(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 October 2024 (31.10.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/227154 A1

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61K 39/395* (2006.01)
A61P 27/02 (2006.01)

(21) International Application Number:
PCT/US2024/026808

(22) International Filing Date:
29 April 2024 (29.04.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/462,638 28 April 2023 (28.04.2023) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report (Art. 21(3))*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*
— *with sequence listing part of description (Rule 5.2(a))*

(54) Title: COMPLEMENT COMPONENT 3 (C3)-SPECIFIC ANTIBODIES AND USES THEREOF

(57) Abstract: The present disclosure relates to the treatment and/or prevention of age-related macular degeneration (AMD), including the advanced form of dry AMD referred to as Geographic Atrophy (GA). In particular, the present disclosure provides novel therapeutic antibodies that target components of the alternative pathway of the complement activation system, including Complement Component 3 (C3) proteins.

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COMPLEMENT COMPONENT 3 (C3)-SPECIFIC ANTIBODIES AND USES THEREOF

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to and the benefit of U.S. Provisional Patent Application No. 63/462,638 filed April 28, 2023, which is incorporated herein by reference in its entirety for all purposes.

SEQUENCE LISTING STATEMENT

[0002] The text of the computer readable sequence listing filed herewith, titled "BWING_41801_601_SequenceListing," created on April 23, 2024, having a file size of 1,199,632 bytes, is hereby incorporated by reference in its entirety

FIELD

[0003] Embodiments of the present disclosure relate to the treatment and/or prevention of age-related macular degeneration (AMD), including the advanced form of dry AMD referred to as Geographic Atrophy (GA). In particular, the present disclosure provides novel therapeutic antibodies that target components of the alternative pathway of the complement activation system, including Complement Component 3 (C3) proteins.

BACKGROUND

[0004] Age-Related Macular Degeneration (AMD) is the leading cause of severe vision loss in adults over age 50. The Centers for Disease Control and Prevention estimate that 1.8 million people have AMD and another 7.3 million are at substantial risk for vision loss from AMD. This eye disease occurs when there are changes to the macula, a small portion of the retina that is located on the inside back layer of the eye. AMD is a loss of central vision that can occur in two forms: "dry" (atrophic) and "wet" (exudative). Most people with macular degeneration have the dry form. Geographic atrophy (GA) is considered the late stage of the dry form of AMD, characterized by focal and progressive loss of photoreceptors. GA is less common than neovascular AMD, and it is responsible for 10-20% of cases of legal blindness in this condition, affecting more than 5 million people worldwide. Currently there is no approved or effective treatment to prevent either the onset

or progression of GA; however, in recent years, significant progress has been made in understanding the pathogenesis of GA, which has led to a number of new potential therapies.

[0005] Genetic and molecular studies have identified the complement system as an important factor in the etiology and progression of AMD. Many of the genetic risk variants cluster in genes of the alternative pathway of the complement system, and complement activation products are elevated in AMD patients. Nevertheless, attempts in treating AMD via complement regulators have not yet been successful, suggesting a level of complexity that could not be predicted only from a genetic point of view. Thus, there remains a need for new therapeutic approaches for the treatment of AMD and GA.

SUMMARY

[0006] Embodiments of the present disclosure include compositions and methods pertaining to an antibody, or antigen binding fragment thereof, which specifically binds Complement Component 3 (C3) polypeptides, optionally wherein said C3 is a Complement Component 3a (C3a) polypeptide or a Complement Component 3b (C3b) polypeptide, which is optionally a polypeptide comprising or consisting of the amino acid sequence of SEQ ID NO: 1064. In accordance with these embodiments, the present disclosure provides an antibody or a fragment thereof, which exhibits any one or more the following functional characteristics: (a) reduces complement activation and/or attenuates complement component 3 (C3) convertase activity, which is optionally measured in an ELISA; and/or (b) cross-reacts with at least one of human C3b protein, Cynomolgus monkey C3 protein, and/or human C3a protein; and/or (c) binds to human C3 with a KD¬ of about 100nM or lower; and/or (d) binds to the same epitope on human C3 as an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or (e) competes for binding to human C3 with an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6. In some embodiments, the antibody or fragment thereof, which is a monoclonal antibody. In some embodiments, the antibody or fragment thereof, which is a human, humanized or chimeric antibody. In further embodiments, the antibody or fragment thereof, is a whole antibody, a single chain variable fragment (scFv), a variable fragment (Fv), a fragment antigen-binding region (Fab), a Fab-C, a Fab'-SH, a (Fab')2, a single-domain

antibody (sdAb), a nanobody, a diabody, a triabody, or an aptamer, optionally wherein the antibody is a whole antibody comprising an Fc region such as a human IgG1, IgG2, IgG3 or IgG4 Fc region.

[0007] In some embodiments, the antibody or fragment thereof, is conjugated to at least one additional moiety, optionally selected from: (a) a therapeutic or cytotoxic moiety; (b) a detection moiety; (c) a purification moiety; (d) a half-life extension moiety, optionally a polypeptide that is at least 20 amino acids in length and comprises any combination of G, A, S T, E, and P residue, which polypeptide is conjugated to the C- or N- terminus of the antibody. In accordance with these embodiments, the present disclosure provides an antibody or a fragment thereof, which is a polypeptide comprising: (a) one, two or all three HCDRs of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally also one, two or all three of the corresponding LCDRs of said exemplary antibody; and/or (b) a VH sequence having at least 90% identity to the VH sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally also a VL sequence having at least 90% identity to the corresponding VL sequence of said exemplary antibody, preferably wherein variation is not permitted in the HCDRs or LCDRs; and/or (c) all six CDRs of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or (d) the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or (e) the full length heavy chain (VH + constant) sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally the corresponding full length light chain (VL + constant) sequence of said exemplary antibody.

[0008] Embodiments of the present disclosure include compositions and methods pertaining to a polynucleotide encoding an antibody or fragment according to any one of the preceding claims, optionally wherein said polynucleotide comprises or consists of a nucleic acid sequence having at least 70, 80, 90 or 100% identity to a nucleic acid sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6. In some embodiments, an expression vector comprises a polynucleotide, which is optionally an adeno-associated virus (AAV) vector, a lentiviral (LV) vector, a herpes simplex virus (HSV) vector, or a retrovirus vector.

[0009] Embodiments of the present disclosure include compositions and methods pertaining to antibodies directed against Complement Component 3 (C3), Complement Component 3a (C3a), and Complement Component 3b (C3b) polypeptides and proteins, including antigen binding

fragments thereof. In accordance with these embodiments, the present disclosure provides a heavy chain variable region (VH) comprising complementarity determining regions (CDRs) HCDR1, HCDR2, and HCDR3, and a light chain variable region (VL) comprising complementarity determining regions (CDRs) LCDR1, LCDR2, and LCDR3. In some embodiments, the HCDR1 comprises one of the following amino acid sequences: the HCDR1 comprises one of the following amino acid sequences: (a) $X_1YX_2X_3X_4$ (SEQ ID NO: 1), wherein X_1 is G, S, N, D, T, or A; X_2 is Y, A, G, W, or T; X_3 is L, M, I, or V; and X_4 is H, N, S, or G; (b) $X_1X_2X_3MX_4$ (SEQ ID NO: 57), wherein X_1 is D, N, S, or A; X_2 is Y, or A; X_3 is A, W, Y, S, C, D, or G; and X_4 is H, S, or N; (c) $X_1X_2X_3WWX_4$ (SEQ ID NO: 95), wherein X_1 is I, S, R, N, or K; X_2 is N, D, S, or G; X_3 is N, S, T, D, Y, or H; and X_4 is S, N, or T; (d) $X_1YYX_2X_3$ (SEQ ID NO: 181), wherein X_1 is S, or D; X_2 is W, or L; and X_3 is S, or T; (e) $X_1X_2X_3YX_4WX_5$ (SEQ ID NO: 204), wherein X_1 is S or N; X_2 is G or N; X_3 is S, K, R, N, or G; X_4 is Y, F, or N; and X_5 is S or N; or (f) TSGVGVG (SEQ ID NO: 227). In some embodiments, the HCDR2 comprises one of the following amino acid sequences: (a) $X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (SEQ ID NO: 20), wherein X_1 is W, I, or V; X_2 is N, S, or Y; X_3 is P, T, A, G, or Y; X_4 is N, Y, G, D, H, or A; X_5 is S, T, N, G, or D; X_6 is G, or S; X_7 is D, G, T, N, V, A, or H; X_8 is T, P, or K; X_9 is N, Y, T, H, R, I, D, or K; X_{10} is Y, or A; X_{11} is V, Q, A, or S; X_{12} is Q, K, P, or D; X_{13} is N, F, K, G, S, or Q; X_{14} is F, Q, L, or V; and X_{15} is Q, G, T, or K; (b) $X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (SEQ ID NO: 70), wherein X_1 is G, R, N, S, H, T, V, or A; X_2 is S, K, N, or G; X_3 is W, S, Q, T, G, or Y; X_4 is N, K, D, S, A, or Y; X_5 is S, T, or G; X_6 is G, D, or S; X_7 is S, G, E, Y, T, or N; X_8 is I, G, T, K, or Y; X_9 is A, T, S, Y, or N; X_{10} is Y, T, P, or F; X_{11} is A, D, or V; X_{12} is D, Y, S, or A; X_{13} is S, A, or V; X_{14} is V, A, or K; and X_{15} is K, P, Q, or G; (c) $X_1IX_2X_3SX_4X_5X_6X_7X_8NPSLX_9S$ (SEQ ID NO: 124), wherein X_1 is K, Q, R, E, or D; X_2 is Y or F; X_3 is H or Q; X_4 is G, E, or R; X_5 is N, I, S, H, F, or T; X_6 is T or I; X_7 is D, N, or M; X_8 is Y or H; and X_9 is K or R; (d) $X_1X_2X_3X_4X_5GX_6TX_7YNPSLKS$ (SEQ ID NO: 189) wherein X_1 is Y or E; X_2 is V or I; X_3 is Y or N; X_4 is Y or H; X_5 is S or I; X_6 is Y, F, or S; and X_7 is N or K; (e) $YIX_1X_2SGX_3TX_4YNPSLKX_5$ (SEQ ID NO: 212) wherein X_1 is Y or N; X_2 is K, Y, or S; X_3 is F, S, Y, or N; X_4 is N, K, or Y; and X_5 is S or N; or (f) $LIYWNX_1X_2X_3X_4YSPSLX_5S$ (SEQ ID NO: 230) wherein X_1 is G or D; X_2 is D or V; X_3 is E or K; X_4 is R or F; and X_5 is K or Q. In some embodiment, the HCDR3 comprises one of the following amino acid sequences: (a) SEQ ID NOs: 39-56; (b) SEQ ID NOs: 83-94; (c) SEQ ID NOs: 153-

180; (d) SEQ ID NOs: 197-203; (e) SEQ ID NOs: 220-226; or (f) SEQ ID NOs: 234-235. In accordance with these embodiments, the LCDR1 comprises an amino acid sequence of any of SEQ ID NOs: 237-267, SEQ ID NOs: 332-333, SEQ ID NOs: 341-348, or SEQ ID NOs: 368-401; the LCDR2 comprises an amino acid sequence of any of SEQ ID NOs: 269-299, SEQ ID NOs: 335-336, SEQ ID NOs: 350-357, or SEQ ID NOs 403-436; and the LCDR3 comprises an amino acid sequence of any of SEQ ID NOs: 300-330, SEQ ID NOs: 339-339, SEQ ID NOs: 359-366, or SEQ ID NOs: 438-471.

[0010] Embodiments of the present disclosure also include antibodies directed against Complement Component 3 (C3), Complement Component 3a (C3a), and Complement Component 3b (C3b) polypeptides and proteins, including antigen binding fragments thereof, comprising a heavy chain variable region (VH) comprising complementarity determining regions (CDRs) HCDR1, HCDR2, and HCDR3, and a light chain variable region (VL) comprising complementarity determining regions (CDRs) LCDR1, LCDR2, and LCDR3. In some embodiments, the LCDR1 comprises one of the following amino acid sequences: (a) X_1ASQ$X_2X_3X_4X_5X_6X_7X_8$ (SEQ ID NO: 236), wherein X_1 is R or Q; X_2 is D, N, T, G, or S; X_3 is V or I; X_4 is S, I, R, G, T, or K; X_5 is T, N, R, or S; X_6 is A, W, F, D, Y, N, or C; X_7 is V or L; X_8 is A, N, G, or H; (b) RSSQX_1LLHX_2NGYNYLD (SEQ ID NO: 331), wherein X_1 is S or I; X_2 is S or T; or (c) RASQS$X_1X_2X_3X_4X_5X_6$ (SEQ ID NO: 340), wherein X_1 is V or I; X_2 is S or R; X_3 is S, D, or R; X_4 is Y or S; X_5 is L or Y; X_6 is A, F, or L; or (d) KSSQX_1X_2LYX_3SNX_4KNYLA (SEQ ID NO: 367), wherein X_1 is S or T; X_2 is V or I; X_3 is R or S; X_4 is N or I. In some embodiments, the LCDR2 comprises one of the following amino acid sequences: (a) X_1AS$X_2X_3X_4X_5$ (SEQ ID NO: 268), wherein X_1 is S, K, A, Y, T, D, or V; X_2 is F, S, N, Q, or T; X_3 is L, S, or F; X_4 is Y, E, Q, or F; X_5 is S or T; (b) LGSX_1RAS (SEQ ID NO: 334), wherein X_1 is N or Y; (c) X_1ASX_2RAT (SEQ ID NO: 349), wherein X_1 is D or G; X_2 is S or N; or (d) WASX_1RES (SEQ ID NO: 402), wherein X_1 is N or T. In some embodiments, the LCDR3 comprises one of the following amino acid sequences: (a) SEQ ID NOs: 300-330; (b) MQX_1LQTPX_2T (SEQ ID NO: 337), wherein X_1 is T or A; X_2 is P or L; (c) QQ$X_1X_2X_3X_4$PX_5T (SEQ ID NO: 358), wherein X_1 is R or Y; X_2 is S, G, or D; X_3 is N or S; X_4 is W or S; X_5 is L, R, I, Y, F, or W; or (d) QQ$X_1X_2X_3$TX_4X_5 (SEQ ID NO: 437), wherein X_1 is Y or F; X_2 is Y or F; X_3 is S, G, or D; X_4 is P or R; X_5 is Y, W, R, T, or P. In accordance with these embodiments, the

HCDR1 comprises an amino acid sequence of any of SEQ ID NOs: 2-19, SEQ ID NOs: 58-69, SEQ ID NOs: 96-123, SEQ ID NOs: 182-188, SEQ ID NOs: 205-211, or SEQ ID NOs: 228-229; the HCDR2 comprises an amino acid sequence of any of SEQ ID NOs: 21-38, SEQ ID NOs: 71-82, SEQ ID NOs: 125-152, SEQ ID NOs 190-196, SEQ ID NOs 213-219, or SEQ ID NOs 231-232; and the HCDR3 comprises an amino acid sequence of any of SEQ ID NOs: 39-56, SEQ ID NOs: 83-94, SEQ ID NOs: 153-180, SEQ ID NOs: 197-203, SEQ ID NOs: 220-226, or SEQ ID NOs: 234-235.

[0011] In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 2; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 21; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 39. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 3; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 22; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 40. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 4; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 23; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 41. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 5; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 24; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 42. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 6; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 25; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 43. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 7; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 26; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 44. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 8; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 27; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 45. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 9; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 28; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 46. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 10; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 29; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 47. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 11; the HCDR2 comprises the

amino acid sequence of SEQ ID NO: 30; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 48. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 12; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 31; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 49. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 13; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 32; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 50. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 14; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 33; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 51. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 15; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 34; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 52. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 16; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 35; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 53. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 17; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 36; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 54. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 18; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 37; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 55. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 19; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 38; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 56. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 58; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 71; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 83. In some embodiments, the amino acid sequence of SEQ ID NO: 59; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 72; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 84. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 60; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 73; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 85. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 61; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 74; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 86. In some embodiments,

the HCDR1 comprises the amino acid sequence of SEQ ID NO: 62; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 75; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 87. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 63; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 76; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 88. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 64; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 77; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 89. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 65; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 78; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 90. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 66; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 79; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 91. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 67; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 80; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 92. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 68; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 81; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 93. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 69; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 82; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 94. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 96; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 125; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 153. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 97; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 126; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 154. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 98; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 127; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 155. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 99; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 128; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 156. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 100; the HCDR2 comprises the

amino acid sequence of SEQ ID NO: 129; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 157. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 101; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 130; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 158. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 102; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 131; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 159. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 103; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 132; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 160. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 104; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 133; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 161. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 105; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 134; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 162. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 106; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 135; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 163. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 107; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 136; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 164. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 108; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 137; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 165. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 109; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 138; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 166. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 110; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 139; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 167. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 111; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 140; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 168. In some embodiments, HCDR1 comprises the amino acid sequence of SEQ ID NO: 112; the HCDR2 comprises the amino acid sequence of

SEQ ID NO: 141; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 169. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 113; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 142; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 170. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 114; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 143; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 171. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 115; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 144; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 172. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 116; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 145; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 173. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 117; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 146; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 174. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 118; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 147; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 175. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 119; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 148; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 176. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 120; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 149; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 177. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 121; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 150; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 178. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 122; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 151; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 179. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 123; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 152; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 180. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 182; the HCDR2 comprises the amino acid sequence of SEQ ID NO:

190; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 197. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 183; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 191; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 198. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 184; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 192; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 199. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 185; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 193; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 200. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 186; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 194; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 201. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 187; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 195; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 202. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 188; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 196; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 203. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 205; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 213; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 220. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 206; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 214; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 221. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 207; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 215; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 222. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 208; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 216; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 223. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 209; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 217; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 224. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 210; the HCDR2 comprises the amino acid sequence of SEQ ID NO:

218; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 225. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 211; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 219; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 226. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 228; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 231; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 234. In some embodiments, the HCDR1 comprises the amino acid sequence of SEQ ID NO: 229; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 232; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 35.

[0012] In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 237; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 269; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 300. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 238; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 270; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 301. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 239; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 271; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 302. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 240; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 272; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 303. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 241; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 273; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 304. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 242; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 274; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 305. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 243; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 275; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 306. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 244; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 276; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 307. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 245; the LCDR2

comprises the amino acid sequence of SEQ ID NO: 277; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 308. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 246; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 278; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 309. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 247; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 279; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 310. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 248; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 280; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 311. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 249; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 281; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 312. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 250; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 282; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 313. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 251; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 283; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 314. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 252; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 284; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 315. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 253; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 285; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 316. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 254; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 286; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 317. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 255; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 287; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 318. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 256; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 288; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 319. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 257; the LCDR2

comprises the amino acid sequence of SEQ ID NO: 289; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 320. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 258; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 290; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 321. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 259; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 291; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 322. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 260; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 292; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 323. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 261; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 293; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 324. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 262; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 294; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 325. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 263; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 295; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 326. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 264; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 296; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 327. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 265; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 297; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 328. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 266; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 298; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 329. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 267; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 299; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 330. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 332; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 335; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 338. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 333; the LCDR2

comprises the amino acid sequence of SEQ ID NO: 336; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 339. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 341; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 350; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 359. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 342; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 351; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 360. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 343; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 352; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 361. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 344; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 353; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 362. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 345; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 354; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 363. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 346; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 355; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 364. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 347; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 356; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 365. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 348; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 357; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 366. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 368; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 403; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 438. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 369; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 404; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 439. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 370; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 405; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 440. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 371; the LCDR2

comprises the amino acid sequence of SEQ ID NO: 406; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 441. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 372; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 407; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 442. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 373; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 408; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 443. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 374; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 409; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 444. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 375; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 410; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 445. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 376; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 411; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 446. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 377; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 412; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 447. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 378; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 413; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 448. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 379; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 414; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 449. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 380; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 415; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 450. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 381; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 416; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 451. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 382; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 417; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 452. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 383; the LCDR2

comprises the amino acid sequence of SEQ ID NO: 418; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 453. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 384; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 419; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 454. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 385; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 420; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 455. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 386; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 421; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 456. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 387; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 422; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 457. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 388; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 423; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 458. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 389; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 424; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 459. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 390; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 425; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 460. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 391; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 426; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 461. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 392; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 427; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 462. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 393; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 428; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 463. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 394; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 429; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 464. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 395; the LCDR2

comprises the amino acid sequence of SEQ ID NO: 430; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 465. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 396; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 431; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 466. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 397; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 432; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 467. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 398; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 433; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 468. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 399; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 434; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 469. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 400; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 435; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 470. In some embodiments, the LCDR1 comprises the amino acid sequence of SEQ ID NO: 401; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 436; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 471.

[0013] In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to any of SEQ ID NOs: 546-619. In some embodiments, the VL comprises an amino acid sequence that is at least 90% identical to any of SEQ ID NOs: 694-767.

[0014] In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 546 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 694. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 547 and the and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 695. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 548 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 696. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 549 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 697. In some embodiments, the VH comprises an amino acid sequence that is at least 90%

identical to SEQ ID NO: 550 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 698. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 551 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 699. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 552 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 700. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 553 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 701. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 554 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 702. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 555 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 703. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 556 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 704. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 557 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 705. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 558 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 706. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 559 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 707. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 560 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 708. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 561 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 709. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 562 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 710. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 563 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 711. In some

embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 564 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 712. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 565 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 713. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 566 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 714. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 567 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 715. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 568 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 716. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 569 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 717. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 570 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 718. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 571 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 719. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 572 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 720. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 573 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 721. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 574 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 722. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 575 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 723. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 576 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 724. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 577 and the VL comprises an

amino acid sequence that is at least 90% identical to SEQ ID NO: 725. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 578 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 726. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 579 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 727. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 580 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 728. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 581 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 729. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 582 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 730. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 583 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 731. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 584 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 732. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 585 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 733. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 586 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 734. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 587 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 735. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 588 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 736. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 589 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 737. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 590 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 738. In some embodiments, the VH comprises an amino acid sequence

that is at least 90% identical to SEQ ID NO: 591 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 739. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 592 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 740. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 593 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 741. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 594 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 742. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 595 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 743. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 596 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 744. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 597 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 745. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 598 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 746. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 599 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 747. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 600 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 748. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 601 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 749. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 602 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 750. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 603 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 751. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 604 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID

NO: 752. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 605 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 753. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 606 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 754. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 607 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 755. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 608 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 756. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 609 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 757. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 610 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 758. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 611 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 759. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 612 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 760. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 613 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 761. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 614 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 762. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 615 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 763. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 616 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 764. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 617 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 765. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 618 and the

VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 766. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 619 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 767.

[0015] In some embodiments, the anti-C3 antibodies of the present disclosure bind an epitope from a C3 polypeptide, or fragment thereof, having an amino acid sequence of SEQ ID NO: 1064. In some embodiments, the anti-C3 antibodies of the present disclosure bind C3, C3a, and/or C3b, and reduce complement activation. In some embodiments, the anti-C3 antibodies of the present disclosure bind C3, C3a, and/or C3b, with a K_D of about 100 nM or lower. In some embodiments, the anti-C3 antibodies of the present disclosure bind C3, C3a, and/or C3b, and attenuate C3 convertase activity.

[0016] In some embodiments, the antibody is a monoclonal antibody, a human antibody, a humanized antibody, and/or a chimeric antibody. In some embodiments, the antibody is a fragment selected from the group consisting of Fab, Fab-C, Fab′-SH, Fv, scFv, and $(Fab')_2$ fragments. In some embodiments, the antibody is a monospecific antibody. In some embodiments, the antibody is a bispecific antibody.

[0017] In some embodiments, the antibody comprises a detection moiety. In some embodiments, the antibody comprises a purification moiety.

[0018] In some embodiments, the antibody comprises a half-life extension moiety. In some embodiments, the half-life extension moiety comprises a polypeptide that is at least 20 amino acids in length and comprises any combination of G, A, S T, E, and P residues. In some embodiments, the half-life extension polypeptide is attached to the C-terminus or N-terminus of the antibody.

[0019] Embodiments of the present disclosure also includes a pharmaceutical composition comprising any of the anti-C3 antibodies described herein. In some embodiments, the composition is suitable for ocular administration. In some embodiments, ocular administration comprises injection into vitreous fluid. In some embodiments, ocular administration comprises delivering the antibody using a conjunctival insert, a contact lens, a gel, a nanoparticle, a mucoadhesive polymer, an ointment, a solution, a suspension, eye drops, and/or an implant.

[0020] Embodiments of the present disclosure also include a method of treating age-related macular degeneration (AMD) comprising administering a pharmaceutical composition comprising

an effective amount of any of the anti-C3 antibodies described herein to a subject in need thereof. In some embodiments, the pharmaceutical composition is administered ocularly and treats at least one AMD symptom. In some embodiments, AMD comprises wet AMD. In some embodiments, AMD comprises dry AMD. In some embodiments, at least one AMD symptom comprises visual distortion, reduced central vision, blurred vision, and/or difficulty adapting to low light. In some embodiments, administering the pharmaceutical composition reduces complement activation in the subject's eye. In some embodiments, the pharmaceutical composition is administered at a dose ranging from about 0.0001 mg/dose to about 100 mg/dose. In some embodiments, the pharmaceutical composition is administered at a dose ranging from about 0.0001 mg/ml to about 100 mg/ml.

[0021] Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 70% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 70% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 80% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 80% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 90% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 90% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989.

[0022] Embodiments of the present disclosure also include an expression vector comprising any of the polynucleotides described herein. In some embodiments, the expression vector is at least one of: an adeno-associated virus (AAV) vector, a lentiviral (LV) vector, a herpes simplex virus (HSV) vector, and a retrovirus vector.

[0023] Embodiments of the present disclosure also include a method of administering ocular gene therapy to a subject in need thereof comprising injecting a pharmaceutical composition comprising an effective amount of an expression vector described herein.

[0024] Embodiments of the present disclosure also include a method of treating age-related macular degeneration (AMD) comprising administering a pharmaceutical composition comprising an effective amount of an expression vector described herein, wherein administering the pharmaceutical composition treats at least one AMD symptom.

BRIEF DESCRIPTION OF THE DRAWING(S)

[0025] FIGS. 1A-1D: Representative ELISA results used to determine antigen positive serum titers of mice immunized with human C3 and cyno C3, according to different immunization protocols/cohorts (Cohort 1: FIG. 1A (human C3) and FIG. 1B (cyno C3); Cohort 2: FIG. 1C (human C3); FIG. 1D (cyno C3)).

[0026] FIG. 2: Representing ELISA results of polyclonal phage pools to confirm enrichment and examine cross reactivity.

[0027] FIG. 3: Representative table containing binding kinetics of the C3 antibodies of the present disclosure.

[0028] FIG. 4: Representative table containing results of C3 antibody cross-reactivity with human C3b protein, Cynomolgus monkey C3 protein, and human C3a protein.

[0029] FIGS. 5A-5B: Representative tables containing binding kinetics of C3 antibodies with respect to human C3 protein (FIG. 5A) and human C3b protein (FIG. 5B).

[0030] FIGS. 6A-6D: Representative results of C3 antibody epitope experiments, including a table containing binning allocations (FIG. 6A), data from a representative heatmap analyzing the ability of the antibodies to block one another for binding to the antigen (FIG. 6B), and representative network plots (FIG. 6C and FIG. 6D), which progressively groups antibodies with similar competition profiles.

[0031] FIGS. 7A-7E: Representative binning network plots based on recombinant human affinities and cyno binding performed with C3b (FIG. 7A); C3b affinity and ligand blocking (FIG. 7B); bins vs. communities for CFHR4b blocking (FIG. 7C); bins vs. communities for CFH blocking (FIG. 7D); and material availability and common vs. diverse light chains (FIG. 7E).

[0032] FIG. 8: Representative results of C3 antibody polyreactivity with baculovirus particles (BVPs).

[0033] FIG. 9: Representative results of C3 antibody polyreactivity with the various proteins indicated.

[0034] FIGS. 10A-10B: Representative results of C3 antibody polyreactivity with CFHR4 (FIG. 10A) and CFH (FIG. 10B).

[0035] FIG. 11: Representative results of the effects of C3 antibodies on alternative pathway complement activation based on the quantification of red blood cell hemolysis.

DETAILED DESCRIPTION

[0036] Embodiments of the present disclosure relate to the treatment and/or prevention of age-related macular degeneration (AMD), including the advanced form of dry AMD referred to as Geographic Atrophy (GA). In particular, the present disclosure provides novel therapeutic antibodies that target components of the alternative pathway of the complement activation system, including Complement Component 3 (C3), Complement Component 3a (C3a), and Complement Component 3b (C3b) polypeptides and proteins, and antigen binding fragments thereof.

[0037] The human complement system comprises a family of proteins that are essential to the human immune response against infections. Complement recognizes microbes or damaged host cells and subsequently triggers an enzymatic cascade that mainly serves to label target cells for phagocytosis by immune cells, produce chemoattractants, and directly kill target cells *via* pore formation. Unwanted complement activation on the body's own cells is a key pathological driver in a wide spectrum of immune diseases including autoimmune, inflammatory, and degenerative diseases. For current and future development of therapeutic complement inhibitors, knowledge of complement activation and how it can be regulated is of great importance.

[0038] Convertase enzymes fulfill a central role in the complement cascade as they cleave C3 and C5, which mediate nearly all complement effector functions. C3 convertases cleave C3 into C3a, a chemoattractant molecule, and C3b, which covalently binds to target surfaces and triggers phagocytosis. C5 convertases cleave C5 into C5a, a potent mediator of leukocyte recruitment and inflammation, and C5b, the initiator of the membrane attack complex and cell lysis. The complement cascade begins *via* specific recognition of target cells in the classical (CP) and lectin (LP) pathways. In the CP, antibodies bind epitopes on the target cell and subsequently recruit the C1 complex ($C1qr_2s_2$). Upon binding to the antibody platforms, C1q-associated protease C1s

converts C4 and C2 to generate a C3 convertase enzyme (C4b2a) on the cell surface. Similarly, the lectin pathway also forms C4b2a *via* activation of mannose-binding lectin-associated serine proteases. The resulting CP/LP C4b2a convertases cleave C3 into C3a and C3b. Following cleavage, a reactive thioester in C3b is exposed, which enables its covalent attachment to target cell surfaces, leading to recognition of the cells by phagocytes. The labeling of target cells with C3b is amplified by the alternative pathway (AP) in which surface-bound C3b binds factor B (FB). The proconvertase C3bB is then cleaved by factor D (FD) to form an active C3 convertase complex that consists of C3b and the protease fragment Bb (C3bBb). Since the resulting active AP C3 convertase (C3bBb) is comprised of C3b itself, substrate cleavage results in generation of additional convertases, further propagating C3b deposition. When the density of C3b molecules on the cell surface becomes sufficiently high, the existing C3 convertases (C4b2a and C3bBb) gain the ability to cleave C5, leading to formation of C5a and C5b.

[0039] Age-related macular degeneration (AMD) is a progressive retinal disease in which the early stage is characterized by relatively few small drusen within the macula. When AMD progresses, drusen size and number increase, eventually leading towards more advanced stages of AMD. Two forms of advanced AMD are distinguished. The first form, neovascular AMD, is characterized by infiltration of abnormal blood vessels into the retina. These newly formed vessels are fragile and when they break, the leakage of blood constituents in the retina leads to sudden vision loss. The second form of advanced AMD, geographic atrophy (GA), is the result of gradual degeneration of the RPE and photoreceptors cells. Although neovascularization occurs in only 15–20% of AMD cases, it is responsible for the vast majority of vision loss caused by AMD. Drugs targeting vascular endothelial growth factor (VEGF), one of the central molecules in neovascularization, have proven to be very successful in neovascular AMD. However, no treatment is available for the remaining majority of early, intermediate or geographic atrophy AMD cases, and furthermore there are no effective means of preventing progression of early to advanced stages. Although it is known that AMD is the result of a complex interaction of environmental and genetic risk factors, studies into the molecular constituents of drusen suggest that AMD may have an immunological component. This suggestion arose after proteins involved in inflammation and/or other immune-associated responses, including components of the complement system, were found within drusen.

[0040] In light of this, experiments were performed to determine the role that C3, C3a, and C3b play in the etiology of AMD and GA, and concomitantly, to develop a therapeutic platform based on modulating C3 activity using anti-C3 antibodies.

Definitions

[0041] To facilitate an understanding of the present technology, a number of terms and phrases are defined below. Additional definitions are set forth throughout the detailed description.

[0042] The use of the terms "a" and "an" and "the" and "at least one" and similar referents in the context of describing the embodiments of the present disclosure (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. The use of the term "at least one" followed by a list of one or more items (for example, "at least one of A and B") is to be construed to mean one item selected from the listed items (A or B) or any combination of two or more of the listed items (A and B), unless otherwise indicated herein or clearly contradicted by context. The terms "comprising," "having," "including," and "containing" are to be construed as open-ended terms (i.e., meaning "including, but not limited to,") unless otherwise noted. Recitation of ranges of values herein are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., "such as") provided herein, is intended merely to better illuminate the various embodiments of the present disclosure, and does not pose a limitation on the scope of these embodiment unless otherwise claimed. No language in the specification should be construed as indicating any non-claimed element as essential to the practice of the various embodiments of the present disclosure.

[0043] As used herein, the term "or" is an inclusive "or" operator and is equivalent to the term "and/or" unless the context clearly dictates otherwise. The term "based on" is not exclusive and allows for being based on additional factors not described, unless the context clearly dictates otherwise. In addition, throughout the specification, the meaning of "a," "an," and "the" include plural references. The meaning of "in" includes "in" and "on."

[0044] The transitional phrase "consisting essentially of" as used in claims in the present application limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention, as discussed in *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For example, a composition "consisting essentially of" recited elements may contain an unrecited contaminant at a level such that, though present, the contaminant does not alter the function of the recited composition as compared to a pure composition, i.e., a composition "consisting of" the recited components.

[0045] The term "one or more," as used herein, refers to a number higher than one. For example, the term "one or more" encompasses any of the following: two or more, three or more, four or more, five or more, six or more, seven or more, eight or more, nine or more, ten or more, eleven or more, twelve or more, thirteen or more, fourteen or more, fifteen or more, twenty or more, fifty or more, 100 or more, or an even greater number.

[0046] The term "one or more but less than a higher number," "two or more but less than a higher number," "three or more but less than a higher number," "four or more but less than a higher number," "five or more but less than a higher number," "six or more but less than a higher number," "seven or more but less than a higher number," "eight or more but less than a higher number," "nine or more but less than a higher number," "ten or more but less than a higher number," "eleven or more but less than a higher number," "twelve or more but less than a higher number," "thirteen or more but less than a higher number," "fourteen or more but less than a higher number," or "fifteen or more but less than a higher number" is not limited to a higher number. For example, the higher number can be 10,000, 1,000, 100, 50, etc. For example, the higher number can be approximately 50 (e.g., 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 32, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3 or 2).

[0047] The term "immunoglobulin" or "antibody," as used herein, refers to a protein that is found in blood or other bodily fluids of vertebrates, which is used by the immune system to identify and neutralize foreign objects, such as bacteria and viruses. Typically, an immunoglobulin or antibody is a protein that comprises at least one complementarity determining region (CDR). The CDRs form the "hypervariable region" of an antibody, which is responsible for antigen binding (discussed further below). A whole antibody typically consists of four polypeptides: two identical

copies of a heavy (H) chain polypeptide and two identical copies of a light (L) chain polypeptide. Each of the heavy chains contains one N-terminal variable (V_H) region and three C-terminal constant (C_{H1}, C_{H2}, and C_{H3}) regions, and each light chain contains one N-terminal variable (V_L) region and one C-terminal constant (C_L) region. The light chains of antibodies can be assigned to one of two distinct types, either kappa (κ) or lambda (λ), based upon the amino acid sequences of their constant domains. In a typical antibody, each light chain is linked to a heavy chain by disulfide bonds, and the two heavy chains are linked to each other by disulfide bonds. The light chain variable region is aligned with the variable region of the heavy chain, and the light chain constant region is aligned with the first constant region of the heavy chain. The remaining constant regions of the heavy chains are aligned with each other.

[0048] The variable regions of each pair of light and heavy chains form the antigen binding site of an antibody. The V_H and V_L regions have the same general structure, with each region comprising four framework (FW or FR) regions. The term "framework region," as used herein, refers to the relatively conserved amino acid sequences within the variable region which are located between the CDRs. There are four framework regions in each variable domain, which are designated FR1, FR2, FR3, and FR4. The framework regions form the β sheets that provide the structural framework of the variable region (see, e.g., C. A. Janeway et al. (eds.), *Immunobiology*, 5th Ed., Garland Publishing, New York, N.Y. (2001)).

[0049] The framework regions are connected by three CDRs. As discussed above, the three CDRs, known as CDR1, CDR2, and CDR3, form the "hypervariable region" of an antibody, which is responsible for antigen binding. The CDRs form loops connecting, and in some cases comprising part of, the beta-sheet structure formed by the framework regions. While the constant regions of the light and heavy chains are not directly involved in binding of the antibody to an antigen, the constant regions can influence the orientation of the variable regions. The constant regions also exhibit various effector functions, such as participation in antibody-dependent complement-mediated lysis or antibody-dependent cellular toxicity via interactions with effector molecules and cells.

[0050] As used herein, when an antibody or other entity (e.g., antigen binding domain) "specifically recognizes" or "specifically binds" an antigen or epitope, it preferentially recognizes the antigen in a complex mixture of proteins and/or macromolecules, and binds the antigen or

epitope with affinity which is substantially higher than to other entities not displaying the antigen or epitope. In this regard, "affinity which is substantially higher" means affinity that is high enough to enable detection of an antigen or epitope which is distinguished from entities using a desired assay or measurement apparatus. Typically, it means binding affinity having a binding constant (K_a) of at least 10^7 M^{-1} (e.g., $>10^7$ M^{-1}, $>10^8$ M^{-1}, $>10^9$ M^{-1}, $>10^{10}$ M^{-1}, $>10^{11}$ M^{-1}, $>10^{12}$ M^{-1}, $>10^{13}$ M^{-1}, etc.). In certain such embodiments, an antibody is capable of binding different antigens so long as the different antigens comprise that particular epitope. In certain instances, for example, homologous proteins from different species may comprise the same epitope.

[0051] The terms "fragment of an antibody," "antibody fragment," and "antigen-binding fragment" of an antibody are used interchangeably herein to refer to one or more fragments of an antibody that retain the ability to specifically bind to an antigen (see, generally, Holliger et al., *Nat. Biotech.*, *23*(9): 1126-1129 (2005)). Any antigen-binding fragment of the antibody described herein is within the scope of the present disclosure. The antibody fragment desirably comprises, for example, one or more CDRs, the variable region (or portions thereof), the constant region (or portions thereof), or combinations thereof. Examples of antibody fragments include, but are not limited to, (i) a Fab fragment, which is a monovalent fragment consisting of the V_L, V_H, C_L, and C_{H1} domains, (ii) a F(ab')2 fragment, which is a bivalent fragment comprising two Fab fragments linked by a disulfide bridge at the hinge region, (iii) a Fv fragment consisting of the V_L and V_H domains of a single arm of an antibody, (iv) a Fab' fragment, which results from breaking the disulfide bridge of an F(ab')2 fragment using mild reducing conditions, (v) a disulfide-stabilized Fv fragment (dsFv), and (vi) a domain antibody (dAb), which is an antibody single variable region domain (V_H or V_L) polypeptide that specifically binds antigen.

[0052] The term "monoclonal antibody," as used herein, refers to an antibody produced by a single clone of B lymphocytes that is directed against a single epitope on an antigen. Monoclonal antibodies typically are produced using hybridoma technology, as first described in Köhler and Milstein, *Eur. J. Immunol.*, *5*: 511-519 (1976). Monoclonal antibodies may also be produced using recombinant DNA methods (see, e.g., U.S. Patent 4,816,567), isolated from phage display antibody libraries (see, e.g., Clackson et al. *Nature*, *352*: 624-628 (1991)); and Marks et al., *J. Mol. Biol.*, *222*: 581-597 (1991)), or produced from transgenic mice carrying a fully human immunoglobulin system (see, e.g., Lonberg, *Nat. Biotechnol.*, *23*(9): 1117-25 (2005), and Lonberg,

Handb. Exp. Pharmacol., *181*: 69-97 (2008)). In contrast, "polyclonal" antibodies are antibodies that are secreted by different B cell lineages within an animal. Polyclonal antibodies are a collection of immunoglobulin molecules that recognize multiple epitopes on the same antigen.

[0053] The terms "nucleic acid," "polynucleotide," "nucleotide sequence," and "oligonucleotide" are used interchangeably herein and refer to a polymer or oligomer of pyrimidine and/or purine bases, preferably cytosine, thymine, and uracil, and adenine and guanine, respectively (See Albert L. Lehninger, *Principles of Biochemistry*, at 793-800 (Worth Pub. 1982)). The terms encompass any deoxyribonucleotide, ribonucleotide, or peptide nucleic acid component, and any chemical variants thereof, such as methylated, hydroxymethylated, or glycosylated forms of these bases. The polymers or oligomers may be heterogenous or homogenous in composition, may be isolated from naturally occurring sources, or may be artificially or synthetically produced. In addition, the nucleic acids may be DNA or RNA, or a mixture thereof, and may exist permanently or transitionally in single-stranded or double-stranded form, including homoduplex, heteroduplex, and hybrid states. In some embodiments, a nucleic acid or nucleic acid sequence comprises other kinds of nucleic acid structures such as, for instance, a DNA/RNA helix, peptide nucleic acid (PNA), morpholino nucleic acid (see, e.g., Braasch and Corey, *Biochemistry*, *41*(14): 4503-4510 (2002) and U.S. Patent 5,034,506), locked nucleic acid (LNA; see Wahlestedt et al., *Proc. Natl. Acad. Sci. U.S.A.*, *97*: 5633-5638 (2000)), cyclohexenyl nucleic acids (see Wang, *J. Am. Chem. Soc.*, *122*: 8595-8602 (2000)), and/or a ribozyme. The terms "nucleic acid" and "nucleic acid sequence" may also encompass a chain comprising non-natural nucleotides, modified nucleotides, and/or non-nucleotide building blocks that can exhibit the same function as natural nucleotides (e.g., "nucleotide analogs").

[0054] The terms "peptide," "polypeptide," and "protein" are used interchangeably herein and refer to a polymeric form of amino acids of any length, which can include coded and non-coded amino acids, chemically or biochemically modified or derivatized amino acids, and polypeptides having modified peptide backbones.

[0055] As used herein, a "nucleic acid" or "nucleic acid molecule" generally refers to any ribonucleic acid or deoxyribonucleic acid, which may be unmodified or modified DNA or RNA. "Nucleic acids" include, without limitation, single- and double-stranded nucleic acids. As used herein, the term "nucleic acid" also includes DNA as described above that contains one or more

modified bases. Thus, DNA with a backbone modified for stability or for other reasons is a "nucleic acid." The term "nucleic acid" as it is used herein embraces such chemically, enzymatically, or metabolically modified forms of nucleic acids, as well as the chemical forms of DNA characteristic of viruses and cells, including for example, simple and complex cells.

[0056] The terms "oligonucleotide" or "polynucleotide" or "nucleotide" or "nucleic acid" refer to a molecule having two or more deoxyribonucleotides or ribonucleotides, preferably more than three, and usually more than ten. The exact size will depend on many factors, which in turn depends on the ultimate function or use of the oligonucleotide. The oligonucleotide may be generated in any manner, including chemical synthesis, DNA replication, reverse transcription, or a combination thereof. Typical deoxyribonucleotides for DNA are thymine, adenine, cytosine, and guanine. Typical ribonucleotides for RNA are uracil, adenine, cytosine, and guanine.

[0057] The terms "complementary" and "complementarity" refer to nucleotides (e.g., 1 nucleotide) or polynucleotides (e.g., a sequence of nucleotides) related by the base-pairing rules. For example, the sequence 5'-A-G-T-3' is complementary to the sequence 3'-T-C-A-5'. Complementarity may be "partial," in which only some of the nucleic acids' bases are matched according to the base pairing rules. Or, there may be "complete" or "total" complementarity between the nucleic acids. The degree of complementarity between nucleic acid strands affects the efficiency and strength of hybridization between nucleic acid strands. This is of particular importance in amplification reactions and in detection methods that depend upon binding between nucleic acids.

[0058] The term "gene" refers to a nucleic acid (e.g., DNA or RNA) sequence that comprises coding sequences necessary for the production of an RNA, or of a polypeptide or its precursor. A functional polypeptide can be encoded by a full-length coding sequence or by any portion of the coding sequence as long as the desired activity or functional properties (e.g., enzymatic activity, ligand binding, signal transduction, etc.) of the polypeptide are retained. The term "portion" when used in reference to a gene refers to fragments of that gene. The fragments may range in size from a few nucleotides to the entire gene sequence minus one nucleotide. Thus, "a nucleotide comprising at least a portion of a "gene" may comprise fragments of the gene or the entire gene.

[0059] The term "gene" also encompasses the coding regions of a structural gene and includes sequences located adjacent to the coding region on both the 5' and 3' ends, e.g., for a distance of

about 1 kb on either end, such that the gene corresponds to the length of the full-length mRNA (e.g., comprising coding, regulatory, structural and other sequences). The sequences that are located 5' of the coding region and that are present on the mRNA are referred to as 5' non-translated or untranslated sequences. The sequences that are located 3' or downstream of the coding region and that are present on the mRNA are referred to as 3' non-translated or 3' untranslated sequences. The term "gene" encompasses both cDNA and genomic forms of a gene. In some organisms (e.g., eukaryotes), a genomic form or clone of a gene contains the coding region interrupted with non-coding sequences termed "introns" or "intervening regions" or "intervening sequences." Introns are segments of a gene that are transcribed into nuclear RNA (hnRNA); introns may contain regulatory elements such as enhancers. Introns are removed or "spliced out" from the nuclear or primary transcript; introns therefore are absent in the messenger RNA (mRNA) transcript. The mRNA functions during translation to specify the sequence or order of amino acids in a nascent polypeptide.

[0060] In addition to containing introns, genomic forms of a gene may also include sequences located on both the 5' and 3' ends of the sequences that are present on the RNA transcript. These sequences are referred to as "flanking" sequences or regions (these flanking sequences are located 5' or 3' to the non-translated sequences present on the mRNA transcript). The 5' flanking region may contain regulatory sequences such as promoters and enhancers that control or influence the transcription of the gene. The 3' flanking region may contain sequences that direct the termination of transcription, posttranscriptional cleavage, and polyadenylation.

[0061] The term "wild-type" when made in reference to a gene refers to a gene that has the characteristics of a gene isolated from a naturally occurring source. The term "wild-type" when made in reference to a gene product refers to a gene product that has the characteristics of a gene product isolated from a naturally occurring source. The term "wild-type" when made in reference to a protein refers to a protein that has the characteristics of a naturally occurring protein. The term "naturally-occurring" as applied to an object refers to the fact that an object can be found in nature. For example, a polypeptide or polynucleotide sequence that is present in an organism (including viruses) that can be isolated from a source in nature, and which has not been intentionally modified by the hand of a person in the laboratory is naturally-occurring. A wild-type gene is often that gene or allele that is most frequently observed in a population and is thus arbitrarily designated the

"normal" or "wild-type" form of the gene. In contrast, the term "modified" or "mutant" when made in reference to a gene or to a gene product refers, respectively, to a gene or to a gene product that displays modifications in sequence and/or functional properties (e.g., altered characteristics) when compared to the wild-type gene or gene product. It is noted that naturally-occurring mutants can be isolated; these are identified by the fact that they have altered characteristics when compared to the wild-type gene or gene product.

[0062] The term "allele" refers to a variation of a gene; the variations include but are not limited to variants and mutants, polymorphic loci, and single nucleotide polymorphic loci, frameshift, and splice mutations. An allele may occur naturally in a population, or it might arise during the lifetime of any particular individual of the population.

[0063] Thus, the terms "variant" and "mutant" when used in reference to a nucleotide sequence refer to a nucleic acid sequence that differs by one or more nucleotides from another, usually related, nucleotide acid sequence. A "variation" is a difference between two different nucleotide sequences; typically, one sequence is a reference sequence.

[0064] The terms "immunogen" and "antigen" are used interchangeably herein and refer to any molecule, compound, or substance that induces an immune response in an animal (e.g., a mammal). An "immune response" can entail, for example, antibody production and/or the activation of immune effector cells. An antigen in the context of the disclosure can comprise any subunit, fragment, or epitope of any proteinaceous or non-proteinaceous (e.g., carbohydrate or lipid) molecule that provokes an immune response in a mammal. The term "epitope" refers to a sequence of an antigen that is recognized by an antibody or an antigen receptor. Epitopes also are referred to in the art as "antigenic determinants." In certain embodiments, an epitope is a region of an antigen that is specifically bound by an antibody. In certain embodiments, an epitope may include chemically active surface groupings of molecules such as amino acids, sugar side chains, phosphoryl, or sulfonyl groups. In certain embodiments, an epitope may have specific three-dimensional structural characteristics (e.g., a "conformational" epitope) and/or specific charge characteristics. The antigen can be a protein or peptide of viral, bacterial, parasitic, fungal, protozoan, prion, cellular, or extracellular origin, which provokes an immune response in a mammal, preferably leading to protective immunity.

[0065] A "pharmaceutically acceptable carrier" as used herein generally refers to an ingredient in a pharmaceutical formulation, other than an active ingredient, which is nontoxic to a subject. A pharmaceutically acceptable carrier includes, but is not limited to, a buffer, excipient, stabilizer, or preservative.

[0066] The term "pharmaceutical formulation" as used herein generally refers to a preparation which is in such form as to permit the biological activity of an active ingredient (e.g., an anti-C3 antibody, an antibody conjugate, a fusion protein, or a polymeric formulation) contained therein to be effective, and which contains no additional components which are unacceptably toxic to a subject to which the formulation would be administered.

[0067] As used herein, "treatment" (and grammatical variations thereof such as "treat" or "treating") generally refers to clinical intervention in an attempt to alter the natural course of the individual being treated, and can be performed either for prophylaxis or during the course of clinical pathology. Desirable effects of treatment include, but are not limited to, preventing occurrence or recurrence of disease, alleviation of symptoms, diminishment of any direct or indirect pathological consequences of the disease, preventing metastasis, decreasing the rate of disease progression, amelioration or palliation of the disease state, and remission or improved prognosis. In some embodiments, anti-C3 antibodies of the present disclosure or other compositions that include an anti-C3 antibody of the present disclosure (e.g., an antibody conjugate, a fusion protein, or a polymeric formulation) are used to delay development of a disease or to slow the progression of a disease.

[0068] The term "half-life" as used herein generally refers to the time required for the concentration of a substance (e.g., an anti-3 antibody, an antibody conjugate, a fusion protein (e.g., a Fab fusion protein), or a polymeric formulation) to decrease by one-half, in vivo (e.g., in the eye (e.g., the vitreous)) or in vitro.

[0069] An "effective amount" of an agent, e.g., a pharmaceutical formulation, as used herein generally refers to an amount effective, at dosages and for periods of time necessary, to achieve the desired therapeutic or prophylactic result.

[0070] An "individual" or "subject" is a mammal. Mammals include, but are not limited to, domesticated animals (e.g., cows, sheep, cats, dogs, and horses), primates (e.g., humans and non-

human primates such as monkeys), rabbits, and rodents (e.g., mice and rats). In certain embodiments, the individual or subject is a human. A "subject" may be a "patient."

Anti-C3 Antibodies

[0071] As described further herein, embodiments of the present disclosure relate to the treatment and/or prevention of age-related macular degeneration (AMD), including the advanced form of dry AMD referred to as Geographic Atrophy (GA). In particular, the present disclosure provides novel therapeutic antibodies that target components of the alternative pathway of the complement activation system, including Complement Component 3 (C3), Complement Component 3a (C3a), and Complement Component 3b (C3b).

[0072] As described further herein, anti-C3 antibodies were generated, and their structural and functional properties were elucidated. Based on these data, embodiments of the present disclosure include anti-C3 antibodies, or antigen-binding fragments thereof, that are comprised of a heavy chain variable region (VH) comprising complementarity determining regions (CDRs) HCDR1, HCDR2, and HCDR3, and a light chain variable region (VL) comprising complementarity determining regions (CDRs) LCDR1, LCDR2, and LCDR3. In some embodiments, the HCDR1 comprises one of the following amino acid sequences: (a) $X_1YX_2X_3X_4$ (SEQ ID NO: 1), wherein X_1 is G, S, N, D, T, or A; X_2 is Y, A, G, W, or T; X_3 is L, M, I, or V; and X_4 is H, N, S, or G; (b) $X_1X_2X_3MX_4$ (SEQ ID NO: 57), wherein X_1 is D, N, S, or A; X_2 is Y, or A; X_3 is A, W, Y, S, C, D, or G; and X_4 is H, S, or N; (c) $X_1X_2X_3WWX_4$ (SEQ ID NO: 95), wherein X_1 is I, S, R, N, or K; X_2 is N, D, S, or G; X_3 is N, S, T, D, Y, or H; and X_4 is S, N, or T; (d) $X_1YYX_2X_3$ (SEQ ID NO: 181), wherein X_1 is S, or D; X_2 is W, or L; and X_3 is S, or T; (e) $X_1X_2X_3YX_4WX_5$ (SEQ ID NO: 204), wherein X_1 is S or N; X_2 is G or N; X_3 is S, K, R, N, or G; X_4 is Y, F, or N; and X_5 is S or N; or (f) TSGVGVG (SEQ ID NO: 227). In some embodiments, the HCDR2 comprises one of the following amino acid sequences: (a) $X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (SEQ ID NO: 20), wherein X_1 is W, I, or V; X_2 is N, S, or Y; X_3 is P, T, A, G, or Y; X_4 is N, Y, G, D, H, or A; X_5 is S, T, N, G, or D; X_6 is G, or S; X_7 is D, G, T, N, V, A, or H; X_8 is T, P, or K; X_9 is N, Y, T, H, R, I, D, or K; X_{10} is Y, or A; X_{11} is V, Q, A, or S; X_{12} is Q, K, P, or D; X_{13} is N, F, K, G, S, or Q; X_{14} is F, Q, L, or V; and X_{15} is Q, G, T, or K; (b) $X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (SEQ ID NO: 70), wherein X_1 is G, R, N, S, H, T, V, or A; X_2 is S, K, N, or G; X_3 is W, S, Q, T, G, or Y; X_4 is N, K, D, S, A, or Y; X_5 is S, T, or G;

X_6 is G, D, or S; X_7 is S, G, E, Y, T, or N; X_8 is I, G, T, K, or Y; X_9 is A, T, S, Y, or N; X_{10} is Y, T, P, or F; X_{11} is A, D, or V; X_{12} is D, Y, S, or A; X_{13} is S, A, or V; X_{14} is V, A, or K; and X_{15} is K, P, Q, or G; (c) $X_1IX_2X_3SX_4X_5X_6X_7X_8NPSLX_9S$ (SEQ ID NO: 124), wherein X_1 is K, Q, R, E, or D; X_2 is Y or F; X_3 is H or Q; X_4 is G, E, or R; X_5 is N, I, S, H, F, or T; X_6 is T or I; X_7 is D, N, or M; X_8 is Y or H; and X_9 is K or R; (d) $X_1X_2X_3X_4X_5GX_6TX_7YNPSLKS$ (SEQ ID NO: 189) wherein X_1 is Y or E; X_2 is V or I; X_3 is Y or N; X_4 is Y or H; X_5 is S or I; X_6 is Y, F, or S; and X_7 is N or K; (e) $YIX_1X_2SGX_3TX_4YNPSLKX_5$ (SEQ ID NO: 212) wherein X_1 is Y or N; X_2 is K, Y, or S; X_3 is F, S, Y, or N; X_4 is N, K, or Y; and X_5 is S or N; or (f) $LIYWNX_1X_2X_3X_4YSPSLX_5S$ (SEQ ID NO: 230) wherein X_1 is G or D; X_2 is D or V; X_3 is E or K; X_4 is R or F; and X_5 is K or Q. In some embodiments, the HCDR3 comprises one of the following amino acid sequences: (a) SEQ ID NOs: 39-56; (b) SEQ ID NOs: 83-94; (c) SEQ ID NOs: 153-180; (d) SEQ ID NOs: 197-203; (e) SEQ ID NOs: 220-226; or (f) SEQ ID NOs: 234-235.

[0073] Embodiments of the present disclosure also include antibodies directed against Complement Component 3 (C3), Complement Component 3a (C3a), and Complement Component 3b (C3b) polypeptides and proteins, including antigen binding fragments thereof, comprising a heavy chain variable region (VH) comprising complementarity determining regions (CDRs) HCDR1, HCDR2, and HCDR3, and a light chain variable region (VL) comprising complementarity determining regions (CDRs) LCDR1, LCDR2, and LCDR3. In some embodiments, the LCDR1 comprises one of the following amino acid sequences: (a) $X_1ASQX_2X_3X_4X_5X_6X_7X_8$ (SEQ ID NO: 236), wherein X_1 is R or Q; X_2 is D, N, T, G, or S; X_3 is V or I; X_4 is S, I, R, G, T, or K; X_5 is T, N, R, or S; X_6 is A, W, F, D, Y, N, or C; X_7 is V or L; X_8 is A, N, G, or H; (b) $RSSQX_1LLHX_2NGYNYLD$ (SEQ ID NO: 331), wherein X_1 is S or I; X_2 is S or T; or (c) $RASQSX_1X_2X_3X_4X_5X_6$ (SEQ ID NO: 340), wherein X_1 is V or I; X_2 is S or R; X_3 is S, D, or R; X_4 is Y or S; X_5 is L or Y; X_6 is A, F, or L; or (d) $KSSQX_1X_2LYX_3SNX_4KNYLA$ (SEQ ID NO: 367), wherein X_1 is S or T; X_2 is V or I; X_3 is R or S; X_4 is N or I. In some embodiments, the LCDR2 comprises one of the following amino acid sequences: (a) $X_1ASX_2X_3X_4X_5$ (SEQ ID NO: 268), wherein X_1 is S, K, A, Y, T, D, or V; X_2 is F, S, N, Q, or T; X_3 is L, S, or F; X_4 is Y, E, Q, or F; X_5 is S or T; (b) $LGSX_1RAS$ (SEQ ID NO: 334), wherein X_1 is N or Y; (c) X_1ASX_2RAT (SEQ ID NO: 349), wherein X_1 is D or G; X_2 is S or N; or (d) $WASX_1RES$ (SEQ ID NO: 402), wherein X_1 is N or T. In some embodiments, the LCDR3

comprises one of the following amino acid sequences: (a) SEQ ID NOs: 300-330; (b) MQX_1LQTPX_2T (SEQ ID NO: 337), wherein X_1 is T or A; X_2 is P or L; (c) $QQX_1X_2X_3X_4PX_5T$ (SEQ ID NO: 358), wherein X_1 is R or Y; X_2 is S, G, or D; X_3 is N or S; X_4 is W or S; X_5 is L, R, I, Y, F, or W; or (d) $QQX_1X_2X_3TX_4X_5$ (SEQ ID NO: 437), wherein X_1 is Y or F; X_2 is Y or F; X_3 is S, G, or D; X_4 is P or R; X_5 is Y, W, R, T, or P. In accordance with these embodiments, the HCDR1 comprises an amino acid sequence of any of SEQ ID NOs: 2-19, SEQ ID NOs: 58-69, SEQ ID NOs: 96-123, SEQ ID NOs: 182-188, SEQ ID NOs: 205-211, or SEQ ID NOs: 228-229; the HCDR2 comprises an amino acid sequence of any of SEQ ID NOs: 21-38, SEQ ID NOs: 71-82, SEQ ID NOs: 125-152, SEQ ID NOs 190-196, SEQ ID NOs 213-219, or SEQ ID NOs 231-232; and the HCDR3 comprises an amino acid sequence of any of SEQ ID NOs: 39-56, SEQ ID NOs: 83-94, SEQ ID NOs: 153-180, SEQ ID NOs: 197-203, SEQ ID NOs: 220-226, or SEQ ID NOs: 234-235.

[0074] In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 2; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 21; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 39. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 3; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 22; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 40. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 4; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 23; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 41. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 5; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 24; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 42. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 6; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 25; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 43. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 7; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 26; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 44. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 8; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 27; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 45. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 9; the HCDR2 comprises the amino acid sequence of SEQ ID NO:

28; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 46. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 10; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 29; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 47. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 11; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 30; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 48. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 12; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 31; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 49. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 13; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 32; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 50. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 14; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 33; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 51. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 15; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 34; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 52. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 16; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 35; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 53. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 17; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 36; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 54. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 18; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 37; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 55. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 19; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 38; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 56. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 58; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 71; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 83. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 59; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 72; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 84. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 60; the HCDR2 comprises the amino

acid sequence of SEQ ID NO: 73; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 85. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 61; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 74; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 86. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 62; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 75; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 87. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 63; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 76; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 88. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 64; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 77; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 89. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 65; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 78; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 90. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 66; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 79; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 91. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 67; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 80; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 92. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 68; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 81; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 93. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 69; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 82; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 94. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 96; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 125; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 153. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 97; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 126; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 154. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 98; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 127; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 155. In some embodiments, an anti-C3 antibody comprises the

HCDR1 of SEQ ID NO: 99; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 128; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 156. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 100; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 129; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 157. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 101; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 130; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 158. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 102; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 131; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 159. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 103; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 132; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 160. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 104; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 133; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 161. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 105; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 134; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 162. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 106; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 135; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 163. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 107; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 136; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 164. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 108; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 137; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 165. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 109; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 138; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 166. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 110; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 139; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 167. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 111; the HCDR2 comprises the amino acid sequence of

SEQ ID NO: 140; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 168. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 112; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 141; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 169. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 113; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 142; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 170. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 114; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 143; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 171. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 115; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 144; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 172. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 116; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 145; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 173. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 117; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 146; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 174. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 118; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 147; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 175. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 119; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 148; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 176. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 120; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 149; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 177. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 121; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 150; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 178. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 122; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 151; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 179. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 123; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 152; and the HCDR3 comprises the amino acid sequence of SEQ ID

NO: 180. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 182; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 190; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 197. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 183; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 191; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 198. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 184; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 192; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 199. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 185; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 193; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 200. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 186; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 194; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 201. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 187; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 195; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 202. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 188; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 196; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 203. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 205; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 213; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 220. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 206; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 214; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 221. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 207; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 215; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 222. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 208; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 216; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 223. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 209; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 217; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 224. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO:

210; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 218; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 225. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 211; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 219; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 226. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 228; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 231; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 234. In some embodiments, an anti-C3 antibody comprises the HCDR1 of SEQ ID NO: 229; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 232; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 35.

[0075] In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 237; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 269; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 300. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 238; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 270; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 301. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 239; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 271; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 302. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 240; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 272; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 303. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 241; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 273; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 304. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 242; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 274; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 305. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 243; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 275; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 306. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 244; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 276; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 307. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 245; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 277; and the

LCDR3 comprises the amino acid sequence of SEQ ID NO: 308. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 246; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 278; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 309. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 247; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 279; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 310. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 248; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 280; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 311. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 249; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 281; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 312. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 250; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 282; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 313. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 251; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 283; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 314. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 252; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 284; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 315. I In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 253; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 285; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 316. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 254; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 286; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 317. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 255; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 287; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 318. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 256; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 288; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 319. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 257; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 289; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 320. In some embodiments, an anti-C3 antibody comprises

the LCDR1 of SEQ ID NO: 258; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 290; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 321. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 259; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 291; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 322. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 260; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 292; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 323. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 261; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 293; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 324. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 262; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 294; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 325. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 263; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 295; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 326. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 264; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 296; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 327. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 265; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 297; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 328. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 266; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 298; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 329. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 267; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 299; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 330. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 332; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 335; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 338. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 333; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 336; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 339. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 341; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 350; and the

LCDR3 comprises the amino acid sequence of SEQ ID NO: 359. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 342; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 351; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 360. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 343; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 352; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 361. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 344; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 353; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 362. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 345; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 354; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 363. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 346; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 355; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 364. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 347; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 356; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 365. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 348; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 357; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 366. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 368; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 403; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 438. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 369; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 404; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 439. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 370; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 405; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 440. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 371; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 406; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 441. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 372; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 407; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 442. In some embodiments, an anti-C3 antibody comprises

the LCDR1 of SEQ ID NO: 373; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 408; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 443. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 374; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 409; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 444. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 375; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 410; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 445. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 376; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 411; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 446. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 377; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 412; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 447. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 378; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 413; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 448. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 379; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 414; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 449. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 380; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 415; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 450. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 381; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 416; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 451. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 382; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 417; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 452. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 383; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 418; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 453. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 384; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 419; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 454. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 385; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 420; and the

LCDR3 comprises the amino acid sequence of SEQ ID NO: 455. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 386; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 421; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 456. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 387; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 422; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 457. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 388; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 423; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 458. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 389; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 424; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 459. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 390; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 425; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 460. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 391; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 426; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 461. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 392; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 427; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 462. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 393; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 428; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 463. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 394; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 429; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 464. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 395; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 430; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 465. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 396; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 431; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 466. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 397; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 432; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 467. In some embodiments, an anti-C3 antibody comprises

the LCDR1 of SEQ ID NO: 398; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 433; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 468. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 399; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 434; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 469. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 400; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 435; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 470. In some embodiments, an anti-C3 antibody comprises the LCDR1 of SEQ ID NO: 401; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 436; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 471.

[0076] In some embodiments, the VH of the anti-C3 antibodies of the present disclosure includes an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to any of SEQ ID NOs: 546-619. In some embodiments, the VL of the anti-C3 antibodies of the present disclosure includes an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to any of SEQ ID NOs: 694-767.

[0077] In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 546 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 694. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 547 and the and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 695. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to

SEQ ID NO: 548 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 696. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 549 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 697. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 550 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 698. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 551 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 699. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 552 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 700. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 553 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 701. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at

least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 554 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 702. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 555 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 703. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 556 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 704. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 557 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 705. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 558 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 706. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 559 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 707. In some embodiments, the VH comprises an

amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 560 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 708. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 561 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 709. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 562 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 710. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 563 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 711. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 564 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 712. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 565 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%,

at least 99%, or 100% identical) to SEQ ID NO: 713. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 566 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 714. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 567 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 715. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 568 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 716. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 569 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 717. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 570 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 718. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 571 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least

91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 719. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 572 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 720. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 573 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 721. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 574 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 722. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 575 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 723. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 576 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 724. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID

NO: 577 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 725. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 578 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 726. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 579 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 727. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 580 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 728. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 581 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 729. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 582 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 730. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%,

at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 583 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 731. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 584 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 732. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 585 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 733. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 586 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 734. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 587 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 735. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 588 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 736. In some embodiments, the VH comprises an amino acid

sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 589 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 737. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 590 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 738. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 591 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 739. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 592 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 740. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 593 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 741. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 594 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or

100% identical) to SEQ ID NO: 742. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 595 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 743. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 596 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 744. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 597 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 745. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 598 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 746. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 599 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 747. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 600 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%,

at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 748. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 601 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 749. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 602 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 750. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 603 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 751. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 604 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 752. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 605 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 753. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 606 and the VL

comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 754. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 607 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 755. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 608 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 756. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 609 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 757. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 610 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 758. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 611 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 759. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least

96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 612 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 760. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 613 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 761. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 614 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 762. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 615 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 763. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 616 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 764. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 617 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 765. In some embodiments, the VH comprises an amino acid sequence that is at least

90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 618 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 766. In some embodiments, the VH comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 619 and the VL comprises an amino acid sequence that is at least 90% identical (e.g., at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical) to SEQ ID NO: 767.

[0078] Nucleic acid or amino acid sequence "identity," as described herein, can be determined by comparing a nucleic acid or amino acid sequence of interest to a reference nucleic acid or amino acid sequence. A number of mathematical algorithms for obtaining the optimal alignment and calculating identity between two or more sequences are known and incorporated into a number of available software programs. Examples of such programs include CLUSTAL-W, T-Coffee, and ALIGN (for alignment of nucleic acid and amino acid sequences), BLAST programs (e.g., BLAST 2.1, BL2SEQ, and later versions thereof) and FASTA programs (e.g., FASTA3x, FAST™, and SSEARCH) (for sequence alignment and sequence similarity searches). Sequence alignment algorithms also are disclosed in, for example, Altschul et al., *J. Molecular Biol.*, *215*(3): 403-410 (1990), Beigert et al., *Proc. Natl. Acad. Sci. USA*, *106*(10): 3770-3775 (2009), Durbin et al., eds., *Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids*, Cambridge University Press, Cambridge, UK (2009), Soding, *Bioinformatics*, *21*(7): 951-960 (2005), Altschul et al., *Nucleic Acids Res.*, *25*(17): 3389-3402 (1997), and Gusfield, *Algorithms on Strings, Trees and Sequences*, Cambridge University Press, Cambridge UK (1997)).

[0079] As would be recognized by one of ordinary skill in the art based on the present disclosure, one or more amino acids of the aforementioned anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies), or antigen fragments thereof, can be replaced or substituted with a different amino acid. An amino acid "replacement" or "substitution" refers to the replacement of one amino acid at a given position or residue by another amino acid at the same position or residue within a polypeptide sequence. Amino acids are broadly grouped as "aromatic" or "aliphatic." An aromatic

amino acid includes an aromatic ring. Examples of "aromatic" amino acids include histidine (H or His), phenylalanine (F or Phe), tyrosine (Y or Tyr), and tryptophan (W or Trp). Non-aromatic amino acids are broadly grouped as "aliphatic." Examples of "aliphatic" amino acids include glycine (G or Gly), alanine (A or Ala), valine (V or Val), leucine (L or Leu), isoleucine (I or Ile), methionine (M or Met), serine (S or Ser), threonine (T or Thr), cysteine (C or Cys), proline (P or Pro), glutamic acid (E or Glu), aspartic acid (A or Asp), asparagine (N or Asn), glutamine (Q or Gln), lysine (K or Lys), and arginine (R or Arg). Aliphatic amino acids may be sub-divided into four sub-groups. The "large aliphatic non-polar sub-group" consists of valine, leucine, and isoleucine. The "aliphatic slightly-polar sub-group" consists of methionine, serine, threonine, and cysteine. The "aliphatic polar/charged sub-group" consists of glutamic acid, aspartic acid, asparagine, glutamine, lysine, and arginine. The "small-residue sub-group" consists of glycine and alanine. The group of charged/polar amino acids may be sub-divided into three sub-groups: the "positively-charged sub-group" consisting of lysine and arginine, the "negatively-charged sub-group" consisting of glutamic acid and aspartic acid, and the "polar sub-group" consisting of asparagine and glutamine. Aromatic amino acids may be sub-divided into two sub-groups: the "nitrogen ring sub-group" consisting of histidine and tryptophan and the "phenyl sub-group" consisting of phenylalanine and tyrosine.

[0080] The amino acid replacement or substitution can be conservative, semi-conservative, or non-conservative. The phrase "conservative amino acid substitution" or "conservative mutation" refers to the replacement of one amino acid by another amino acid with a common property. A functional way to define common properties between individual amino acids is to analyze the normalized frequencies of amino acid changes between corresponding proteins of homologous organisms (Schulz and Schirmer, *Principles of Protein Structure*, Springer-Verlag, New York (1979)). According to such analyses, groups of amino acids may be defined where amino acids within a group exchange preferentially with each other, and therefore resemble each other most in their impact on the overall protein structure. Examples of conservative amino acid substitutions include substitutions of amino acids within the sub-groups described above, for example, lysine for arginine and vice versa such that a positive charge may be maintained, glutamic acid for aspartic acid and vice versa such that a negative charge may be maintained, serine for threonine such that a free -OH can be maintained, and glutamine for asparagine such that a free -NH_2 can be

maintained. "Semi-conservative mutations" include amino acid substitutions of amino acids within the same groups listed above, but not within the same sub-group. For example, the substitution of aspartic acid for asparagine, or asparagine for lysine, involves amino acids within the same group, but different sub-groups. "Non-conservative mutations" involve amino acid substitutions between different groups, for example, lysine for tryptophan, or phenylalanine for serine, etc.

[0081] In addition, one or more amino acids can be inserted into the anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies), or antigen-binding fragments thereof (e.g., insertion into the heavy and/or light chain variable region amino acid sequence). Any number of suitable amino acids can be inserted into the amino acid sequence of the antibody or antigen-binding fragment thereof. In this respect, at least one amino acid (e.g., 2 or more, 5 or more, or 10 or more amino acids), but not more than 20 amino acids (e.g., 18 or less, 15 or less, or 12 or less amino acids), can be inserted into the amino acid sequence of the antibody or antigen-binding fragment thereof. For example, 1-10 amino acids (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 amino acids) may be inserted into the amino acid sequence of the monoclonal antibody or antigen-binding fragment thereof. In this respect, the amino acid(s) can be inserted into an antibody or antigen-binding fragment thereof in any suitable location. Preferably, the amino acid(s) are inserted into a CDR (e.g., CDR1, CDR2, or CDR3) of the antibody or antigen-binding fragment thereof.

[0082] The amino acid sequences of the anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies), or antigen-binding fragments thereof, are not limited to the specific amino acid sequences described herein. Indeed, an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or antigen-binding fragment thereof, can comprise any heavy chain polypeptide or light chain polypeptide that competes with the anti-C3 antibodies or antigen-binding fragments thereof for conformational binding to C3. Antibody competition can be assayed using routine peptide competition assays such as, for example, ELISA, Western blot, or immunohistochemistry methods (see, e.g., U.S. Patents 4,828,981 and 8,568,992; and Braitbard et al., *Proteome Sci.*, *4*: 12 (2006)).

[0083] An anti-C3 antibody (e.g., C3, C3a, and C3b antibody) of the present disclosure may be a whole antibody, or an antigen-binding fragment of a whole antibody. As defined herein, antigen-binding antibody fragments encompassed by the present disclosure include, but are not limited to, $F(ab')_2$, Fab', Fab, Fv, scFv, dsFv, dAb, and single chain binding polypeptides. Antibody fragments and their therapeutic utility are further described in, e.g., Nelson, A.L., MAbs.

2010 Jan-Feb; 2(1): 77-83; Joosten et al., Microbial Cell Factories volume 2, Article number: 1 (2003); and Bates A, Power CA., Antibodies (Basel). 2019;8(2):28; doi:10.3390/antib8020028). In some embodiments, the anti-C3 antigen-binding fragment is a single-chain variable fragment (scFv), which is an engineered antibody generated by the fusion of the heavy (VH) and light chains (VL) of immunoglobulins through a short polypeptide linker. Single chain variable domain (Fv) fragments (scFv) are used in the art in a variety of clinical and therapeutic applications, primarily due to their improved pharmacokinetic properties as compared to the parent monoclonal antibodies and the relative ease of producing them in large quantities at low cost (Monnier et al., Antibodies 2013, 2(2), 193-208; doi.org/10.3390/antib2020193; Safdari et al., Mol Med. 2016; 22: 258-270; and Lu, R., Hwang, Y., Liu, I. et al. Development of therapeutic antibodies for the treatment of diseases. J Biomed Sci 27, 1 (2020). https://doi.org/10.1186/s12929-019-0592-z).

[0084] An anti-C3 antibody (e.g., C3, C3a, and C3b antibody) of the present disclosure may be a diabody. Diabodies are antibody fragments with two antigen-binding sites that may be bivalent or bispecific. See, for example, EP 404,097; WO 1993/01161; Hudson et al., *Nat. Med.* 9:129-134 (2003); and Hollinger et al., *Proc. Natl. Acad. Sci. USA* 90: 6444-6448 (1993). Triabodies and tetrabodies are also described in Hudson et al., *Nat. Med.* 9:129-134 (2003). An anti-C3 antibody of the present disclosure may be a single-domain antibody (also referred to as a nanobody). Single-domain antibodies are antibody fragments comprising all or a portion of the heavy chain variable domain or all or a portion of the light chain variable domain of an antibody. In certain embodiments, a single-domain antibody is a human single-domain antibody (Domantis, Inc., Waltham, Mass.; see, e.g., U.S. Pat. No. 6,248,516 B1). Antibody fragments can be made by various techniques, including but not limited to proteolytic digestion of an intact antibody as well as production by recombinant host cells (e.g., *E. coli* or phage), as described herein.

[0085] In other embodiments, the anti-C3 antibody (e.g., C3, C3a, and C3b antibody) of the present disclosure is a whole antibody. As defined herein, a whole antibody comprises two identical copies of a heavy (H) chain polypeptide and two identical copies of a light (L) chain polypeptide. Each of the heavy chains contains one N-terminal variable (V_H) region and three C-terminal constant (C_{H1}, C_{H2}, and C_{H3}) regions, and each light chain contains one N-terminal variable (V_L) region and one C-terminal constant (C_L). The heavy chain C-terminal constant region contains the fragment crystallizable (Fc) domain, which determines antibody class and is

responsible for humoral and cellular effector functions. Antibodies are divided into five major classes (or "isotypes"), IgG, IgM, IgA, IgD and IgE, which differ in their function in the immune system. IgGs are the most abundant immunoglobulins in the blood, representing 60% of total serum antibodies in humans. IgG antibodies may be subclassified as IgG1, IgG2, IgG3, and IgG4, named in order of their abundance in serum (IgG1 being the most abundant) (Vidarsson et al., Frontiers in Immunology. 5: 520 (2014)). A whole anti-C3 monoclonal antibody described herein may be of any suitable class and/or subclass. In some embodiments, the monoclonal antibody is of class IgG (e.g., IgG1, IgG2, IgG3, or IgG4). For example, the monoclonal antibody may be an IgG1 antibody.

[0086] As discussed above, the Fc domain mediates several effector functions of antibodies, such as binding to receptors on target cells and complement fixation (triggering effector functions that eliminate the antigen). In some embodiments, the Fc domain may be modified or engineered to alter its effector functions. For example, Fc domains may be modified to improve antibody-dependent cellular cytotoxicity (ADCC) and antibody-dependent cellular phagocytosis (ADCP), and to control serum half-life. In some embodiments, the Fc domain of the anti-C3 antibody may be engineered to modulate affinity for an Fc receptor, such as Fcγ receptors (FcγRs) and the neonatal Fc receptor (FcRn). Indeed, optimization of the interactions between antibodies and FcγRs has emerged as a promising approach for enhancing the activity of therapeutic antibodies for the treatment of various diseases (Mimoto et al., Curr. Pharm. Biotechnol. 17, 1298-1314 (2016); Lazar et al., Proc. Natl Acad. Sci. USA 103, 4005-4010 (2006); Richards et al., Mol. Cancer Ther. 7, 2517-2527 (2008); Nordstrom et al., Breast Cancer Res. 13, R123 (2011); and Kang, T.H., Jung, S.T., Exp Mol Med 51, 1-9 (2019)). The Fc domain also may be modified to improve serum half-life, e.g., by engineering IgG Fc for higher FcRn binding (Zalevsky et al., Nat. Biotechnol. 28, 157-159 (2010); and Dall'Acqua et al., J. Immunol. 169, 5171-5180 (2002)). In other embodiments, the Fc domain may be modified to create monovalency or antibody bispecificity for improving therapeutic potency. For example, an Fc domain may be generated that does not form a homodimer but remains as a soluble monomer, mFc, that exhibits high affinity for FcγRI but no detectable binding to FcγRIIIa. In other embodiments, a heterodimeric Fc domain may be generated to obtain bispecific properties for antigen binding to circumvent homodimer formation. Engineered Fc domains may be generated by inducing point mutations or by modifying

glycosylation of the Fc domain (Saunders, K.O., Front Immunol. 2019;10:1296; Kelley, R.F., Meng, Y.G., Liu et al., J Biol Chem. 2014;289:3571-90; Monnet et al., MAbs. 2014;6:422-36; Li et al., Proc Natl Acad Sci U S A. 2017;114:3485-90; and Lin et al., Proc Natl Acad Sci U S A. 2015;112:10611-6; Kang and Jung, *supra*).

[0087] Embodiments of the present disclosure include compositions and methods pertaining to an antibody, or antigen binding fragment thereof, which specifically binds Complement Component 3 (C3) polypeptides, optionally wherein said C3 is a Complement Component 3a (C3a) polypeptide or a Complement Component 3b (C3b) polypeptide, which is optionally a polypeptide comprising or consisting of the amino acid sequence of SEQ ID NO: 1064. In accordance with these embodiments, the present disclosure provides an antibody or a fragment thereof, which exhibits any one or more the following functional characteristics: (a) reduces complement activation and/or attenuates complement component 3 (C3) convertase activity, which is optionally measured in an ELISA; and/or (b) cross-reacts with at least one of human C3b protein, Cynomolgus monkey C3 protein, and/or human C3a protein; and/or (c) binds to human C3 with a KD¬ of about 100nM or lower; and/or (d) binds to the same epitope on human C3 as an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or (e) competes for binding to human C3 with an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6. In some embodiments, the antibody or fragment thereof, which is a monoclonal antibody. In some embodiments, the antibody or fragment thereof, which is a human, humanized or chimeric antibody. In further embodiments, the antibody or fragment thereof, is a whole antibody, a single chain variable fragment (scFv), a variable fragment (Fv), a fragment antigen-binding region (Fab), a Fab-C, a Fab'-SH, a (Fab')2, a single-domain antibody (sdAb), a nanobody, a diabody, a triabody, or an aptamer, optionally wherein the antibody is a whole antibody comprising an Fc region such as a human IgG1, IgG2, IgG3 or IgG4 Fc region. In some embodiments, the antibody or fragment thereof, is conjugated to at least one additional moiety, optionally selected from: (a) a therapeutic or cytotoxic moiety; (b) a detection moiety; (c) a purification moiety; (d) a half-life extension moiety, optionally a polypeptide that is at least 20 amino acids in length and comprises any combination of G, A, S T, E, and P residue, which polypeptide is conjugated to the C- or N- terminus of the antibody. In some embodiments, this is

referred to as "XTENylation," as described further in US8933197, US7846445, US7855279, US8492530, US9938331, US8673860, US9371369, US9926351, US10961287, US10172953, and US10953073. In accordance with these embodiments, the present disclosure provides an antibody or a fragment thereof, which is a polypeptide comprising: (a) one, two or all three HCDRs of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally also one, two or all three of the corresponding LCDRs of said exemplary antibody; and/or (b) a VH sequence having at least 90% identity to the VH sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally also a VL sequence having at least 90% identity to the corresponding VL sequence of said exemplary antibody, preferably wherein variation is not permitted in the HCDRs or LCDRs; and/or (c) all six CDRs of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or (d) the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or (e) the full length heavy chain (VH + constant) sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally the corresponding full length light chain (VL + constant) sequence of said exemplary antibody.

[0088] Embodiments of the present disclosure include compositions and methods pertaining to a polynucleotide encoding an antibody or fragment according to any one of the preceding claims, optionally wherein said polynucleotide comprises or consists of a nucleic acid sequence having at least 70, 80, 90 or 100% identity to a nucleic acid sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6. In some embodiments, an expression vector comprises a polynucleotide, which is optionally an adeno-associated virus (AAV) vector, a lentiviral (LV) vector, a herpes simplex virus (HSV) vector, or a retrovirus vector.

[0089] Embodiments of the present disclosure include a pharmaceutical composition comprising an antibody or fragment, a polynucleotide, or a vector and optionally (a) at least one pharmaceutically acceptable carrier, a buffer, excipient, stabilizer, diluent, or preservative; and/or (b) at least one additional active ingredient. In some embodiments, the pharmaceutical composition, which is suitable for ocular administration to a subject, optionally by delivery using a conjunctival insert, a contact lens, a gel, a nanoparticle, a mucoadhesive polymer, an ointment, a solution, a suspension, eye drops, and/or an implant, preferably by injection into the vitreous fluid. In some embodiments, the antibody or fragment, the polynucleotide, the vector, the

composition, for use as a medicament, optionally for use in a method of treating a disease of the eye in a subject. In further embodiments, the antibody or fragment, the polynucleotide, the vector, the composition for use, wherein said disease is characterized by increased activation of the complement system, in particular the alternative pathway, and in particular within the eye of the subject, for example in drusen or retinal pigment epithelium (RPE) cells of the subject. In some embodiments, the antibody or fragment, the polynucleotide, the vector, the composition for use, wherein the method comprises ocular administration of the antibody, preferably by injection into the vitreous fluid, and wherein said administration preferably relieves at least one symptom in the subject selected from visual distortion, reduced central vision, blurred vision, and/or difficulty adapting to low light. In accordance with these embodiments, where the disease is age-related macular degeneration (AMD), optionally wherein said AMD is dry AMD, which may be at an early, intermediate, or advanced stage (the latter otherwise known as geographic atrophy, GA).

Multi-specific Anti-C3 Antibodies

[0090] As described above, the anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies) of the present disclosure can be a monoclonal antibody, a human antibody, a humanized antibody, and/or a chimeric antibody. In some embodiments, the antibody is a fragment selected from the group consisting of Fab, Fab-C, Fab′-SH, Fv, scFv, and $(Fab')_2$ fragments. In some embodiments, the anti-C3 antibody is a monospecific antibody. In some embodiments, the anti-C3 antibody is a bispecific antibody. In some embodiments, the anti-C3 antibody comprises two or more single-domain antibodies that form a bivalent antibody, a trivalent antibody, or a tetravalent antibody that recognizes different epitopes on the same or different antigens.

[0091] In some embodiments, an anti-C3 antibody provided herein is a chimeric antibody. Certain chimeric antibodies are described, for example, in U.S. Pat. No. 4,816,567; and Morrison et al., *Proc. Natl. Acad. Sci. USA*. 81:6851-6855 (1984). In one example, a chimeric antibody comprises a non-human variable region (e.g., a variable domain derived from a mouse, rat, hamster, rabbit, or non-human primate, such as a monkey) and a human constant domain. In a further example, a chimeric antibody is a "class switched" antibody in which the class or subclass has been changed from that of the parent antibody. Chimeric antibodies include antigen-binding fragments thereof.

[0092] In certain embodiments, a chimeric antibody is a humanized antibody. Typically, a non-human antibody is humanized to reduce immunogenicity to humans, while retaining the specificity and affinity of the parental non-human antibody. Generally, a humanized antibody comprises one or more variable domains in which HVRs, for example, CDRs, (or portions thereof) are derived from a non-human antibody, and FRs (or portions thereof) are derived from human antibody sequences. A humanized antibody optionally will also comprise at least a portion of a human constant region. In some embodiments, some FR residues in a humanized antibody are substituted with corresponding residues from a non-human antibody (e.g., the antibody from which the HVR residues are derived), e.g., to restore or improve antibody specificity or affinity.

[0093] Humanized antibodies and methods of making them are reviewed, for example, in Almagro and Fransson, *Front. Biosci.* 13:1619-1633 (2008), and are further described, for example, in Riechmann et al., *Nature* 332:323-329 (1988); Queen et al., *Proc. Nat'l Acad. Sci. USA* 86:10029-10033 (1989); U.S. Pat. Nos. 5,821,337, 7,527,791, 6,982,321, and 7,087,409; Kashmiri et al., *Methods* 36:25-34 (2005) (describing specificity determining region (SDR) grafting); Padlan, *Mol. Immunol.* 28:489-498 (1991) (describing "resurfacing"); Dall'Acqua et al., *Methods* 36:43-60 (2005) (describing "FR shuffling"); and Osbourn et al., *Methods* 36:61-68 (2005) and Klimka et al., *Br. J. Cancer,* 83:252-260 (2000) (describing the "guided selection" approach to FR shuffling).

[0094] In accordance with the above embodiments, the anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies) of the present disclosure can be made into bivalent, trivalent, or tetravalent formats. For example, an anti-C3 antibody of the present disclosure can be a bivalent, bispecific antibody with heteromeric heavy chains (e.g., Triomab, knobs-into-holes (KIH), Duobody, etc). An anti-C3 antibody of the present disclosure can be a tetravalent multispecific antibody comprised of IgGs with other binding domains fused to either the N- or C-termini of either the heavy or light chains (e.g., dual variable domain [DVD], IgG-scFv fusion, Mabtyrin (IgG with non-antibody binding scaffold "centyrin" fused to C-terminal end of heavy chains). An anti-C3 antibody of the present disclosure can be comprised of IgGs to which additional antigen combining sites have been added within the structure (e.g., two-in-one antibodies, MAT "Modular Antibody Technology" platform from F-Star). An anti-C3 antibody of the present disclosure can be an engineered antibody fragment linked by short peptide linkers which can be made into bivalent,

trivalent, or tetravalent formats addressing two to three targets (e.g., bispecific T-cell engager (BiTE), Nanobody platform, dual- affinity re-targeting (DART) antibodies, "tandem antibody" structures (TandAbs)). And an anti-C3 antibody of the present disclosure can be comprised of chemically coupled IgGs.

[0095] In some embodiments, an anti-C3 antibody (e.g., C3, C3a, and C3b antibody) of the present disclosure is a multispecific antibody, such as a bispecific antibody, which have binding specificities for at least two different antigens. In some embodiments, the anti-C3 antibodies of the present disclosure, or antigen-binding fragments thereof, can be used to form one arm (e.g., antigen-binding portion) of a bispecific antibody, whereas the other arm of the bispecific antibody can be specific for a different antigen. In some embodiments, the other antigen includes, but is not limited to, interleukin-1 beta (IL-1β), interleukin-6 (IL-6); interleukin-6 receptor (IL-6R); interleukin-13 (IL-13); IL-13 receptor (IL-13R); PDGF (e.g., PDGF-BB); angiopoietin; angiopoietin 2 (Ang2); Tie2; S1P; integrins αvβ3, αvβ5, and α5β1; betacellulin; apelin/APJ; erythropoietin; complement factor D; TNFα; HtrA1; a VEGF receptor (e.g., VEGFR1, VEGFR2, VEGFR3, membrane-bound VEGF-receptor (mbVEGFR), or soluble VEGF receptor (sVEGFR)); ST-2 receptor; and proteins genetically linked to age-related macular degeneration (AMD) risk, such as complement pathway components C2, factor B, factor H, CFHR3, CFHR4, C5, C5a, HtrA1, ARMS2, TIMP3, HLA, interleukin-8 (IL-8), CX3CR1, TLR3, TLR4, CETP, LIPC, COL10A1, and TNFRSF10A. In other embodiments, the bispecific antibody may have binding specificity for C3/C3a/C3b and IL-1β; C3/C3a/C3b and IL-6; C3/C3a/C3b and IL-6R; C3/C3a/C3b and IL-13; C3/C3a/C3b and IL-13R; C3/C3a/C3b and PDGF (e.g., PDGF-BB); C3/C3a/C3b and angiopoietin; C3/C3a/C3b and Ang2; C3/C3a/C3b and Tie2; C3/C3a/C3b and S1P; C3/C3a/C3b and integrin αvβ3; C3/C3a/C3b and integrin αvβ5; C3/C3a/C3b and integrin α5β1; C3/C3a/C3b and betacellulin; C3/C3a/C3b and apelin/APJ; C3/C3a/C3b and erythropoietin; C3/C3a/C3b and complement factor D; C3/C3a/C3b and TNFα; C3/C3a/C3b and HtrA1; C3/C3a/C3b and a VEGF receptor (e.g., VEGFR1, VEGFR2, VEGFR3, mbVEGFR, or sVEGFR); C3/C3a/C3b and ST-2 receptor; C3/C3a/C3b and C2; C3/C3a/C3b and factor B; C3/C3a/C3b and factor H; C3/C3a/C3b and CFHR3; C3/C3a/C3b and CFHR4; C3/C3a/C3b and C5; C3/C3a/C3b and C5a; C3/C3a/C3b and ARMS2; C3/C3a/C3b and TIMP3; C3/C3a/C3b and HLA; C3/C3a/C3b and IL-8; C3/C3a/C3b and CX3CR1; C3/C3a/C3b and TLR3; C3/C3a/C3b and TLR4;

C3/C3a/C3b and CETP; C3/C3a/C3b and LIPC; C3/C3a/C3b and COL10A1; or C3/C3a/C3b and TNFRSF10A.

[0096] In some embodiments, a bispecific antibody of the present disclosure includes an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or an antigen-binding fragment thereof, and an anti-VEGF antibody, or an antigen-binding fragment thereof. Such bispecific antibodies can be used to target the complement activation pathway from two different mechanisms, and thus provide additional therapeutic benefits. For example, the anti-C3 arm can be any of the anti-C3 antibodies of the present disclosure, and the anti-VEGF arm can be any VEGF antagonist, including but not limited to, anti-VEGF antibodies (e.g., bevacizumab, sevacizumab, and ranibizumab), anti-VEGFR2 antibodies and related molecules (e.g., ramucirumab, tanibirumab, aflibercept), anti-VEGFR1 antibodies and related molecules (e.g., icrucumab, aflibercept (VEGF Trap-Eye; EYLEA®), and ziv-aflibercept (VEGF Trap; ZALTRAP®)), anti-VEGF arms of VEGF bispecific antibodies (e.g., MP-0250, vanucizumab (VEGF-ANG2)), including anti-VEGF, anti-VEGFR1, and anti-VEGFR2 arms.

[0097] In other embodiments, a bispecific antibody of the present disclosure includes an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or an antigen-binding fragment thereof, and an anti-CFHR4 antibody, or an antigen-binding fragment thereof. Such bispecific antibodies can be used to target the complement activation pathway from two different mechanisms, and thus provide additional therapeutic benefits. For example, the anti-C3 arm can be any of the anti-C3 antibodies of the present disclosure (e.g., C3, C3a, and C3b antibodies), and the anti-CFHR4 arm can be any CFHR4 antagonist.

[0098] In other embodiments, a bispecific antibody of the present disclosure includes an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or an antigen-binding fragment thereof, and an anti-C5 antibody, or an antigen-binding fragment thereof. For example, the anti-C3 arm can be any of the anti-C3 antibodies of the present disclosure, and the anti-C5 arm can be any C5 antagonist, including but not limited to, eculizumab and tesidolumab (LFG316). In other embodiments, a bispecific antibody of the present disclosure includes an anti-C3 antibody, or an antigen-binding fragment thereof, and an anti-FD antibody, or an antigen-binding fragment thereof. For example, the anti-C3 arm can be any of the anti-C3 antibodies of the present

disclosure, and the anti-C5 arm can be any C5 antagonist, including but not limited to, lampalizumab.

Functional Characteristics of Anti-C3 Antibodies

[0099] In accordance with the above embodiments, the present disclosure provides anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies) comprising various functional characteristics. In some embodiments, the anti-C3 antibodies described herein bind an antigen on C3 (SEQ ID NO: 1064), or a variant or isoform thereof, via interaction with its antigenic determinants (epitopes). In some embodiments, binding of an anti-C3 antibody to C3, C3a, and/or C3b reduces complement activation. In some embodiments, the anti-C3 antibody binds human C3, C3a, and/or C3b with a K_D of about 100 nM or lower (FIG. 3). As further described herein, the anti-C3 antibodies of the present disclosure were evaluated for cross-reactivity with various other components of the complement activation pathway. For example, FIG. 4 includes representative data of C3 antibody cross-reactivity with human C3b protein, Cynomolgus monkey C3 protein, and human C3a protein. FIGS. 5A-5B include representative data of binding kinetics of C3 antibodies with respect to human C3 protein (FIG. 5A) and human C3b protein (FIG. 5B). Additionally, FIG. 8 includes representative results of C3 antibody polyreactivity with baculovirus particles (BVPs); FIG. 9 includes representative results of C3 antibody polyreactivity with the various proteins indicated; and FIGS. 10A-10B include representative results of C3 antibody polyreactivity with CFHR4 (FIG. 10A) and CFH (FIG. 10B).

Polypeptides and Expression Vectors

[00100] Embodiments of the present disclosure also include a polynucleotide encoding any of the anti-C3 antibodies of the present disclosure. In some embodiments, the polynucleotide comprises a sequence that is at least 70% identical (e.g., at least 70%, 75%, 80%, 85%, 90%, 95% or 100%) to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 70% identical (e.g., at least 70%, 75%, 80%, 85%, 90%, 95% or 100%) to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 80% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 80% identical to any of SEQ

ID NOs: 768-841, and/or SEQ ID NOs: 916-989. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 90% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693. Embodiments of the present disclosure also include a polynucleotide comprising a nucleic acid sequence that is at least 90% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989.

[00101] In accordance with these embodiments, the present disclosure includes an expression vector comprising any of the polynucleotides encoding an anti-C3 antibody of the present disclosure. In some embodiments, the expression vector is suitable for manufacturing an anti-C3 antibody of the present disclosure for delivery of the antibody to a subject. In certain embodiments, the nucleic acid sequence is in the form of a vector. The vector can be, for example, a plasmid, episome, cosmid, viral vector (e.g., retroviral or adenoviral), or phage. Suitable vectors and methods of vector preparation are well known in the art (see, e.g., Sambrook et al., *Molecular Cloning, a Laboratory Manual*, 4th edition, Cold Spring Harbor Press, Cold Spring Harbor, N.Y. (2012), and Ausubel et al., *Current Protocols in Molecular Biology*, Greene Publishing Associates and John Wiley & Sons, New York, N.Y. (1994)).

[00102] In addition to the nucleic acid encoding an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or antigen-binding fragment thereof, the vector desirably comprises expression control sequences, such as promoters, enhancers, polyadenylation signals, transcription terminators, internal ribosome entry sites (IRES), and the like, that provide for the expression of the antibody-encoding nucleic sequence in a host cell. Exemplary expression control sequences are known in the art and described in, for example, Goeddel, *Gene Expression Technology: Methods in Enzymology*, Vol. 185, Academic Press, San Diego, Calif. (1990).

[00103] A vector comprising a nucleic acid sequence encoding an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or antigen-binding fragment thereof, may be introduced into a host cell that is capable of expressing the polypeptides encoded thereby, including any suitable prokaryotic or eukaryotic cell. Examples of suitable prokaryotic cells include, but are not limited to, cells from the genera *Bacillus* (such as *Bacillus subtilis* and *Bacillus brevis*), *Escherichia* (such as *E. coli*), *Pseudomonas*, *Streptomyces*, *Salmonella*, and *Erwinia*. Particularly useful prokaryotic cells include the various strains of *Escherichia coli* (e.g., K12, HB101 (ATCC No. 33694), DH5α, DH10, MC1061 (ATCC No. 53338), and CC102). Suitable eukaryotic cells are known in the art

and include, for example, yeast cells, insect cells, and mammalian cells. Examples of suitable yeast cells include those from the genera *Hansenula*, *Kluyveromyces*, *Pichia*, *Rhinosporidium*, *Saccharomyces*, and *Schizosaccharomyces*. Suitable insect cells include Sf-9 and HIS cells (Invitrogen, Carlsbad, Calif.) and are described in, for example, Kitts et al., *Biotechniques*, *14*: 810-817 (1993); Lucklow, *Curr. Opin. Biotechnol.*, *4*: 564-572 (1993); and Lucklow et al., *J. Virol.*, *67*: 4566-4579 (1993). Examples of suitable mammalian cells include, but are not limited to, Chinese hamster ovary cells (CHO) (ATCC No. CCL61), CHO DHFR-cells (Urlaub et al., *Proc. Natl. Acad. Sci. USA*, *97*: 4216-4220 (1980)), human embryonic kidney (HEK) 293 or 293T cells (ATCC No. CRL1573), and 3T3 cells (ATCC No. CCL92). Other suitable mammalian cell lines are the monkey COS-1 (ATCC No. CRL1650) and COS-7 cell lines (ATCC No. CRL1651), as well as the CV-1 cell line (ATCC No. CCL70). Further exemplary mammalian host cells include primate cell lines and rodent cell lines, including transformed cell lines. Normal diploid cells, cell strains derived from *in vitro* culture of primary tissue, as well as primary explants also are suitable. Other suitable mammalian cell lines include, but are not limited to, mouse neuroblastoma N2A cells, HeLa, mouse L-929 cells, and BHK or HaK hamster cell lines, all of which are available from the ATCC. Methods for selecting suitable mammalian host cells and methods for transformation, culture, amplification, screening, and purification of such cells are well known in the art (see, e.g., Ausubel et al., eds., *Short Protocols in Molecular Biology*, 5th ed., John Wiley & Sons, Inc., Hoboken, N.J. (2002)). Preferably, the mammalian cell is a human cell.

[00104] In some embodiments, the vector can include means for attaching a detection moiety to an anti-C3 antibody (e.g., C3, C3a, and C3b antibody) of the present disclosure. In some embodiments, the vector can include means for attaching a purification moiety to an anti-C3 antibody of the present disclosure. Exemplary detection and/or purification moieties/tags that can be coupled to an anti-C3 antibody of the present disclosure includes, but is not limited to, hemagglutinin (HA), c-Myc, V5, DYKDDDDK, His tag (e.g., 6x-HIS), Glutathione S-Transferase (GST), Maltose Binding Protein (MBP), a fluorophore (e.g., Green Fluorescent Protein (GFP), Red Fluorescent Protein (RFP), mCherry, a chromophore, and/or a luminescent peptide (e.g., luciferase).

[00105] In some embodiments, the expression vector is suitable for use in gene therapy (e.g., an expression vector for delivering a polynucleotide encoding an anti-C3 antibody of the present

disclosure to a subject). In some embodiments, the expression vector is a herpes simplex virus (HSV) vector, or a retrovirus vector. In some embodiments, the expression vector is an adeno-associated virus (AAV) vector, or comprises an AAV backbone. For example, AAV vectors have been designed, produced and used to mediate gene delivery in human subjects, including for therapeutic purposes. Typically, AAV vectors for use in gene transfer comprise a replication defective AAV genome lacking functional Rep and Cap coding viral sequences. In some embodiments, such replication defective AAV vectors lack most or all of the Rep and Cap coding sequences, and essentially retain one or two AAV ITR sequences and a packaging sequence. The defective genome is packaged in a viral particle, to form a defective, recombined AAV virus, also termed "AAV vector". Methods of producing such AAV vectors have been disclosed in the literature, including using packaging cells, auxiliary viruses or plasmids, and/or baculovirus systems (Samulski et al., (1989) J. Virology 63, 3822; Xiao et al., (1998) J. Virology 72, 2224; Inoue et al., (1998) J. Virol. 72, 7024; WO98/22607; W02005/072364). Methods of producing pseudotyped AAV vectors have also been reported (e.g., WO00/28004), as well as various modifications or formulations of AAV vectors, to reduce their immunogenicity upon in vivo administration (see e.g., W001/23001; WOOO/73316; WO04/112727; W005/005610; WO99/06562). AAV vectors may be prepared or derived from various serotypes of AAVs, which may be even mixed together or with other types of viruses to produce chimeric (e.g., pseudotyped) AAV viruses. Examples of tAAVs are human AAV4 vectors, human AAV7 vectors, human AAV9 vectors, human AAV10 vectors, or bovine AAV vectors. The AAV vector may be derived from a single AAV serotype or comprise sequences or components originating from at least two distinct AAV serotypes (pseudotyped AAV vector), e.g., an AAV vector comprising an AAV genome derived from one AAV serotype (for example AAV9), and a capsid derived at least in part from a distinct AAV serotype. An AAV vector, as used herein, is a vector which comprises at least one component part derivable from an adeno-associated virus. Preferably, that component part is involved in the biological mechanisms by which the vector infects or transduces target cells and expresses an anti-C3 antibody of the present disclosure (e.g., ocular delivery/expression).

[00106] In other embodiments, the expression vector is a lentiviral vector (LV), or comprises an LV backbone. Lentiviruses are part of a larger group of retroviruses. A detailed list of lentiviruses may be found in Coffin et al (1997) "Retroviruses" Cold Spring Harbour Laboratory

Press Eds: JM Coffin, SM Hughes, HE Varmus pp 758-763). For example, lentiviruses can be divided into primate and non-primate groups. Examples of primate lentiviruses include but are not limited to: the human immunodeficiency virus (HIV), the causative agent of human auto immunodeficiency syndrome (AIDS), and the simian immunodeficiency virus (SIV). The non-primate lentiviral group includes the prototype "slow virus" visna/maedi virus (VMV), as well as the related caprine arthritis-encephalitis virus (CAEV), equine infectious anaemia virus (EIAV), feline immunodeficiency virus (FIV), Maedi visna virus (MVV) and bovine immunodeficiency virus (BIV). In one embodiment, the lentiviral vector is derived from HIV- 1, HIV-2, SIV, FIV, BIV, EIAV, CAEV or Visna lentivirus. The lentivirus family differs from retroviruses in that lentiviruses have the capability to infect both dividing and non-dividing cells (Lewis et al (1992) EM BO J 11 (8): 3053-3058 and Lewis and Emerman (1994) J Virol 68 (1):510-516). In contrast, other retroviruses, such as MLV, are unable to infect non-dividing or slowly dividing cells such as those that make up, for example, muscle, brain, lung and liver tissue. A lentiviral vector, as used herein, is a vector which comprises at least one component part derivable from a lentivirus. Preferably, that component part is involved in the biological mechanisms by which the vector infects or transduces target cells and expresses an anti-C3 antibody of the present disclosure (e.g., ocular delivery/expression).

[00107] Additional compositions and method for ocular gene therapy can be found in, e.g., Bordet, T., and Behar-Cohen, F., "Ocular gene therapies in clinical practice: viral vectors and nonviral alternatives," Drug Discovery Today, Volume 24, Issue 8, August 2019, Pages 1685-1693). In some embodiments, gene therapy platforms, methods, and compositions that can be used to deliver an anti-C3 antibody of the present disclosure to a subject (e.g., ocular delivery) includes the platforms, methods, and compositions disclosed in US20220025396, US20220011308, US20210371877, US20210363192, US20190078099, US20190038724, and US10494646B2, which are incorporated herein by reference. In other embodiments, gene therapy platforms, methods, and compositions that can be used to deliver an anti-C3 antibody of the present disclosure to a subject (e.g., ocular delivery) includes the platforms, methods, and compositions based on HMR59 (Hemera Biosciences), which through its protein product soluble CD59, blocks the membrane attack complex that forms during the terminal step in the complement cascade. HMR59 is designed to be administered as a single intraocular injection.

[00108] In accordance with these embodiments, the present disclosure also provides a method of administering ocular gene therapy to a subject in need thereof comprising injecting a pharmaceutical composition comprising an effective amount of an expression vector described herein (e.g., an expression vector comprising a polynucleotides encoding an anti-C3 antibody of the present disclosure). As described further below, the present disclosure also provides a method of treating AMD and/or GA comprising administering a pharmaceutical composition comprising an effective amount of an expression vector described herein (e.g., an expression vector comprising a polynucleotides encoding an anti-C3 antibody of the present disclosure). In some embodiments, administering the pharmaceutical composition treats at least one AMD symptom and/or GA.

Compositions and Methods of Treatment

[00109] The anti-C3 antibodies (e.g., C3, C3a, and C3b antibodies) of the present disclosure can be administered as part of a pharmaceutical composition in a therapeutically effective amount to treat an eye disease (e.g., AMD or GA). In some embodiments, the composition is suitable for ocular administration. In some embodiments, ocular administration comprises injection into vitreous fluid. In some embodiments, ocular administration comprises delivering the antibody using a conjunctival insert, a contact lens, a gel, a nanoparticle, a mucoadhesive polymer, an ointment, a solution, a suspension, eye drops, and/or an implant (e.g., Susvimo™). Recent methods and formulations for ocular administration can be found in, e.g., Souto, E.B., et al. "Advanced Formulation Approaches for Ocular Drug Delivery: State-Of-The-Art and Recent Patents," Pharmaceutics, 2019 Sep; 11(9): 460).

[00110] In accordance with these embodiments, the methods include administering a pharmaceutical composition comprising a therapeutically effective amount of an anti-C3 antibody of the present disclosure. In some embodiments, the pharmaceutical composition is administered ocularly and treats at least one AMD symptom. In some embodiments, AMD comprises wet AMD. In some embodiments, AMD comprises dry AMD (e.g., GA). In some embodiments, the at least one AMD symptom comprises visual distortion, reduced central vision, blurred vision, and/or difficulty adapting to low light. In some embodiments, administering the pharmaceutical composition reduces complement activation in the subject's eye.

[00111] In some embodiments, the pharmaceutical composition comprising a therapeutically effective amount of an anti-C3 antibody (e.g., C3, C3a, and C3b antibody) of the present disclosure is administered at a dose ranging from about 0.0001 mg/dose to about 100 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.001 mg/dose to about 100 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.01 mg/dose to about 100 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.1 mg/dose to about 100 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 1.0 mg/dose to about 100 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 10 mg/dose to about 100 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/dose to about 10 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/dose to about 1.0 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/dose to about 0.1 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/dose to about 0.001 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.01 mg/dose to about 10 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.001 mg/dose to about 1.0 mg/dose. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.1 mg/dose to about 10 mg/dose.

[00112] In some embodiments, the pharmaceutical composition comprising a therapeutically effective amount of an anti-C3 antibody of the present disclosure is administered at a dose ranging from about 0.0001 mg/ml to about 100 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.001 mg/ml to about 100 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.01 mg/ml to about 100 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.1 mg/ml to about 100 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 1.0 mg/ml to about 100 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 10 mg/ml to about 100 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/ml to about 10 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose

ranging from about 0.0001 mg/ml to about 1.0 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/ml to about 0.1 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/ml to about 0.01 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.0001 mg/ml to about 0.001 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.01 mg/ml to about 10 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.001 mg/ml to about 1.0 mg/ml. In some embodiments, the anti-C3 antibody is administered at a dose ranging from about 0.1 mg/ml to about 10 mg/ml.

[00113] As used herein, the terms "treatment," "treating," and the like refer to obtaining a desired pharmacologic and/or physiologic effect. In some embodiments, the effect is therapeutic (e.g., the effect partially or completely cures a disease and/or adverse symptom attributable to the disease). To this end, the methods of the present disclosure comprise administering a "therapeutically effective amount" of an anti-C3 antibody (e.g., C3, C3a, and C3b antibody), or composition comprising an anti-C3 antibody. A "therapeutically effective amount" refers to an amount effective, at dosages and for periods of time necessary, to achieve a desired therapeutic result. The therapeutically effective amount may vary according to factors such as the disease state, age, sex, and weight of the individual, and the ability of the monoclonal antibody to elicit a desired response in the individual. For example, a therapeutically effective amount of an anti-C3 antibody of the present disclosure is an amount which treats at least one AMD and/or GA symptom in a subject. In some embodiments, the pharmacologic and/or physiologic effect may be prophylactic (e.g., the effect completely or partially prevents a disease or symptom thereof). In this respect, the methods of the present disclosure comprise administering a "prophylactically effective amount" of an anti-C3 antibody or composition comprising an anti-C3 antibody. A "prophylactically effective amount" refers to an amount effective, at dosages and for periods of time necessary, to achieve a desired prophylactic result (e.g., prevention of AMD and/or GA onset).

[00114] A typical dose of a therapeutically effective amount of an anti-C3 antibody of the present disclosure can range from, for example, about 0.0001 mg/dose to about 100 mg/dose for each eye to be treated. In some embodiments, a therapeutically effective amount of an anti-C3 antibody of the present disclosure can range from about 0.001 mg/dose to about 100 mg/dose, from

about 0.01 mg/dose to about 100 mg/dose, from about 0.05 mg/dose to about 50 mg/dose, from about 0.1 mg/dose to about 10 mg/dose, from about 0.5 mg/dose to about 5 mg/dose, and from about 1 mg/dose to about 10 mg/dose. In some embodiments, a therapeutically effective concentration of an anti-C3 antibody of the present disclosure can range from, for example, about 0.0001 mg to about 100 mg of the antibody per milliliter of solution. In some embodiments, a therapeutically effective concentration of an anti-C3 antibody of the present disclosure can range from about 0.001 mg/ml to about 100 mg/ml, from about 0.01 mg/ml to about 100 mg/ml, from about 0.1 mg/ml to about 100 mg/ml, from about 1.0 mg/ml and about 100 mg/ml, from about 0.001 mg/ml and about 50 mg/ml, from about 0.01 mg/ml and about 50 mg/ml, from about 0.1 mg/ml and about 50 mg/ml, from about 0.1 mg/ml and about 25 mg/ml, from about 0.1 mg/ml and about 10 mg/ml, and from about 1.0 mg/ml and about 10 mg/ml. In some embodiments, a therapeutically effective dose of an anti-C3 antibody of the present disclosure can be, exactly or approximately, 0.1 mg, 0.2 mg, 0.25 mg, 0.3 mg, 0.35 mg, 0.4 mg, 0.45 mg, 0.5 mg, 0.55 mg, 0.6 mg, 0.65 mg, 0.7 mg, 0.75 mg, 0.8 mg, 0.85 mg, 0.9 mg, 0.95 mg, 1.0 mg, 2.0 mg, 3.0 mg, 4.0 mg, 5.0 mg, 10.0 mg, 15.0 mg, 20.0 mg, or 25.0 mg, or can fall within a range delimited by any two of the foregoing values. For example, in certain embodiments, a sustained release formulation, (e.g., an ocular implant) can be, exactly or approximately, 0.1 mg, 0.2 mg, 0.25 mg, 0.3 mg, 0.35 mg, 0.4 mg, 0.45 mg, 0.5 mg, 0.55 mg, 0.6 mg, 0.65 mg, 0.7 mg, 0.75 mg, 0.8 mg, 0.85 mg, 0.9 mg, 0.95 mg, 1.0 mg, 2.0 mg, 3.0 mg, 4.0 mg, 5.0 mg, 10.0 mg, 15.0 mg, 20.0 mg, or 25.0 mg of an anti-C3 antibody, or an amount that falls within a range delimited by any two of the foregoing values.

[00115] Therapeutic or prophylactic efficacy can be monitored by periodic assessment of treated patients. For repeated administrations over several days or longer, depending on the condition, the treatment is repeated until a desired suppression of disease symptoms occurs. However, other dosage regimens may be useful and are within the scope of the present disclosure. The desired dosage can be delivered by a single bolus administration of the composition, by multiple bolus administrations of the composition, or by continuous infusion administration of the composition. The composition comprising an anti-C3 antibody, or antigen-binding fragment thereof, can be administered to a mammal using standard administration techniques, including ocular, oral, intravenous, intraperitoneal, subcutaneous, pulmonary, transdermal, intramuscular,

intranasal, buccal, sublingual, or suppository administration. The composition preferably is suitable for ocular administration.

[00116] In accordance with the compositions and methods of treatment described herein, embodiments of the present disclosure include anti-C3 antibodies that have enhanced half-life (e.g., after ocular administration), such that the anti-C3 antibody can be administered less often to a subject. In some embodiments, the antibody comprises a half-life extension moiety. In some embodiments, the half-life extension moiety comprises a polypeptide that can be coupled to an anti-C3 antibody of the present disclosure by any means known in the art (e.g., generation of a fusion protein). In some embodiments, the polypeptide that can be coupled to an anti-C3 antibody of the present disclosure is at least 20 amino acids in length and comprises any combination of G, A, S T, E, and P residues. In some embodiments, the half-life extension polypeptide is attached to the C-terminus or N-terminus of the antibody. In some embodiments, this is referred to as "XTENylation," as described further in US8933197, US7846445, US7855279, US8492530, US9938331, US8673860, US9371369, US9926351, US10961287, US10172953, and US10953073.

[00117] The present disclosure also provides a composition comprising any of the anti-C3 antibodies or antigen-binding fragments thereof described herein. The composition desirably is a pharmaceutically acceptable (e.g., physiologically acceptable) composition, which comprises a carrier, preferably a pharmaceutically acceptable (e.g., physiologically acceptable) carrier, and the anti-C3 antibody or antigen-binding fragment thereof. Any suitable carrier can be used within the context of the present disclosure, and such carriers are well known in the art. For example, the composition may contain preservatives, such as, for example, methylparaben, propylparaben, sodium benzoate, and benzalkonium chloride. A mixture of two or more preservatives optionally may be used. In addition, buffering agents may be included in the composition. Suitable buffering agents include, for example, citric acid, sodium citrate, phosphoric acid, potassium phosphate, and various other acids and salts. A mixture of two or more buffering agents optionally may be used. Methods for preparing compositions for pharmaceutical use are known to those skilled in the art and are described in, for example, *Remington: The Science and Practice of Pharmacy*, Lippincott Williams & Wilkins; 21st ed. (May 1, 2005).

[00118] Once administered to a mammal (e.g., a human), the biological activity of the anti-C3 antibody, or antigen-binding fragment thereof, can be measured by any suitable method known in the art. For example, the biological activity can be assessed by determining the stability of the anti-C3 antibody. The biological activity of the anti-C3 antibody also can be assessed by determining its binding affinity to C3, C3a, and/or C3b peptides and/or by assessing its binding affinity to peptides with which it may cross-react. The term "affinity" refers to the equilibrium constant for the reversible binding of two agents and is expressed as the dissociation constant (K_D). Affinity of a binding agent to a ligand, such as affinity of an antibody for an epitope, can be, for example, from about 1 femtomolar (fM) to about 1 millimolar (mM) (e.g., from about 1 picomolar (pM) to about 1 nanomolar (nM), or from about 1 nM to about 1 micromolar (μM)). In some embodiments, the affinity of an anti-C3 antibody may be from about 1 nm to about 20 nm, and desirably from about 5 nm to about 10 nm. Antibody affinity for an antigen or epitope of interest can be measured using any art-recognized assay. Such methods include, for example, fluorescence activated cell sorting (FACS), separable beads (e.g., magnetic beads), antigen panning, and/or ELISA (see, e.g., Janeway et al. (eds.), Immunobiology, 5th ed., Garland Publishing, New York, N.Y., 2001).

[00119] In some embodiments, an anti-C3 antibody, or composition comprising an anti-C3 antibody, may be administered alone or in combination with other drugs. For example, the anti-C3 antibody can be administered in combination with other agents for the treatment or prevention of AMD and/or GA, as disclosed herein. For example, anti-C3 antibodies of the present disclosure, or antibody conjugates, fusion proteins, or polymeric formulations thereof, can be used either alone or in combination with other agents in a therapy. For instance, an anti-C3 antibody may be co-administered with at least one additional therapeutic agent. In certain embodiments, an additional therapeutic agent is another antibody, a chemotherapeutic agent, a cytotoxic agent, an anti-angiogenic agent, an immunosuppressive agent, a prodrug, a cytokine, a cytokine antagonist, cytotoxic radiotherapy, a corticosteroid, an anti-emetic, a cancer vaccine, an analgesic, a growth-inhibitory agent, or combinations thereof.

[00120] For example, in certain embodiments, any of the preceding methods further comprises administering one or more additional compounds. In certain embodiments, the anti-C3 antibody, antibody conjugate, fusion protein, or polymeric formulation is administered simultaneously with the additional compound(s). In certain embodiments, the anti-C3 antibody, antibody conjugate,

fusion protein, or polymeric formulation is administered before or after the additional compound(s). In certain embodiments, the additional compound binds to a second biological molecule selected from the group consisting of VEGF, IL-1β; IL-6; IL-6R; IL-13; IL-13R; PDGF; angiopoietin; Ang2; Tie2; S1P; integrins αvβ3, αvβ5, and α5β1; betacellulin; apelin/APJ; erythropoietin; complement factor D; TNFα; HtrA1; a VEGF receptor; ST-2 receptor; and proteins genetically linked to AMD risk, such as complement pathway components C2, factor B, factor H, CFHR3, CFHR4, C5, C5a, HtrA1, ARMS2, TIMP3, HLA, interleukin-8 (IL-8), CX3CR1, TLR3, TLR4, CETP, LIPC, COL10A1, and TNFRSF10A. In some embodiments, the additional compound is an antibody or antigen-binding fragment thereof. In some embodiments according to (or as applied to) any of the embodiments above, the ocular disorder is an intraocular neovascular disease selected from the group consisting of proliferative retinopathies, choroidal neovascularization (CNV), age-related macular degeneration (AMD), geographic atrophy (GA), diabetic and other ischemia-related retinopathies, diabetic macular edema, pathological myopia, von Hippel-Lindau disease, histoplasmosis of the eye, retinal vein occlusion (RVO), including CRVO and BRVO, corneal neovascularization, retinal neovascularization, and retinopathy of prematurity (ROP).

[00121] In some instances, an anti-C3 antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, may be administered in combination with at least one additional therapeutic agent for treatment of an ocular disorder, for example, an ocular disorder described herein (e.g., AMD (e.g., wet AMD or dry AMD), GA, DME, DR, or RVO). Exemplary additional therapeutic agents for combination therapy for treatment of ocular disorders include, without limitation, anti-angiogenic agents, such as VEGF antagonists, including, for example, anti-VEGF antibodies (e.g., the anti-VEGF Fab LUCENTIS® (ranibizumab)), soluble receptor fusion proteins (e.g., the recombinant soluble receptor fusion protein EYLEA® (aflibercept, also known as VEGF Trap Eye; Regeneron/Aventis)), aptamers (e.g., the anti-VEGF pegylated aptamer MACUGEN® (pegaptanib sodium; NeXstar Pharmaceuticals/OSI Pharmaceuticals)), and VEGFR tyrosine kinase inhibitors (e.g., 4-(4-bromo-2-fluoroanilino)-6-methoxy-7-(1-methylpiperidin-4-ylmethoxy)quinazoline (ZD6474), 4-(4-fluoro-2-methylindol-5-yloxy)-6-methoxy-7-(3-pyrrolidin-1-ylpropoxy)quinazoline (AZD2171), vatalanib (PTK787), semaxaminib (SU5416; SUGEN), and SUTENT® (sunitinib));

Tryptophanyl-tRNA synthetase (TrpRS); squalamine; RETAANE® (anecortave acetate for depot suspension; Alcon, Inc.); Combretastatin A4 Prodrug (CA4P); MIFEPREX® (mifepristone-ru486); subtenon triamcinolone acetonide; intravitreal crystalline triamcinolone acetonide; matrix metalloproteinase inhibitors (e.g., Prinomastat (AG3340; Pfizer)); fluocinolone acetonide (including fluocinolone intraocular implant; Bausch & Lomb/Control Delivery Systems); linomide; inhibitors of integrin β3 function; angiostatin, and combinations thereof.

[00122] Further examples of additional therapeutic agents that can be used in combination with an anti-C3 antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, for treatment of an ocular disorder (e.g., AMD, GA, DME, DR, or RVO), include, but are not limited to, VISUDYNE® (verteporfin; a light-activated drug that is typically used in conjunction with photodynamic therapy with a non-thermal laser), PKC412, Endovion (NS 3728; NeuroSearch A/S), neurotrophic factors (e.g., glial derived neurotrophic factor (GDNF) and ciliary neurotrophic factor (CNTF)), diltiazem, dorzolamide, PHOTOTROP®, 9-cis-retinal, eye medication (e.g., phospholine iodide, echothiophate, or carbonic anhydrase inhibitors), veovastat (AE-941; AEterna Laboratories, Inc.), Sirna-027 (AGF-745; Sirna Therapeutics, Inc.), neurotrophins (including, by way of example only, NT-4/5, Genentech), Cand5 (Acuity Pharmaceuticals), INS-37217 (Inspire Pharmaceuticals), integrin antagonists (including those from Jerini AG and Abbott Laboratories), EG-3306 (Ark Therapeutics Ltd.), BDM-E (BioDiem Ltd.), thalidomide (as used, for example, by EntreMed, Inc.), cardiotrophin-1 (Genentech), 2-methoxyestradiol (Allergan/Oculex), DL-8234 (Toray Industries), NTC-200 (Neurotech), tetrathiomolybdate (University of Michigan), LYN-002 (Lynkeus Biotech), microalgal compound (Aquasearch/Albany, Mera Pharmaceuticals), D-9120 (Celitech Group plc), ATX-S10 (Hamamatsu Photonics), TGF-beta 2 (Genzyme/Celtrix), tyrosine kinase inhibitors (e.g., those from Allergan, SUGEN, or Pfizer), NX-278-L (NeXstar Pharmaceuticals/Gilead Sciences), Opt-24 (OPTIS France SA), retinal cell ganglion neuroprotectants (Cogent Neurosciences), N-nitropyrazole derivatives (Texas A&M University System), KP-102 (Krenitsky Pharmaceuticals), cyclosporin A, therapeutic agents used in photodynamic therapy (e.g., VISUDYNE®; receptor-targeted PDT, Bristol-Myers Squibb, Co.; porfimer sodium for injection with PDT; verteporfin, QLT Inc.; rostaporfin with PDT, Miravent Medical Technologies; talaporfin sodium with PDT, Nippon Petroleum; and motexafin lutetium, Pharmacyclics, Inc.),

antisense oligonucleotides (including, by way of example, products tested by Novagali Pharma SA and ISIS-13650, Isis Pharmaceuticals), and combinations thereof.

[00123] An anti-C3 antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, may be administered in combination with a therapy or surgical procedure for treatment of an ocular disorder (e.g., AMD, GA DME, DR, or RVO), including, for example, laser photocoagulation (e.g., panretinal photocoagulation (PRP)), drusen lasering, macular hole surgery, macular translocation surgery, implantable miniature telescopes, PHI-motion angiography (also known as micro-laser therapy and feeder vessel treatment), proton beam therapy, microstimulation therapy, retinal detachment and vitreous surgery, scleral buckle, submacular surgery, transpupillary thermotherapy, photosystem I therapy, use of RNA interference (RNAi), extracorporeal rheopheresis (also known as membrane differential filtration and rheotherapy), microchip implantation, stem cell therapy, gene replacement therapy, ribozyme gene therapy (including gene therapy for hypoxia response element, Oxford Biomedica; Lentipak, Genetix; and PDEF gene therapy, GenVec), photoreceptor/retinal cells transplantation (including transplantable retinal epithelial cells, Diacrin, Inc.; retinal cell transplant, Cell Genesys, Inc.), acupuncture, and combinations thereof.

[00124] In some embodiments, an anti-C3 antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, can be administered in combination with an anti-angiogenic agent for treatment of an ocular disorder (e.g., AMD, GA, DME, DR, or RVO). Any suitable anti-angiogenic agent can be used in combination with an antibody of the present disclosure, including, but not limited to, those listed by Carmeliet et al. *Nature* 407:249-257, 2000. In some embodiments, the anti-angiogenic agent is a VEGF antagonist, including, but not limited to, an anti-VEGF antibody (e.g., the anti-VEGF Fab LUCENTIS® (ranibizumab), RTH-258 (formerly ESBA-1008, an anti-VEGF single-chain antibody fragment; Novartis), or a bispecific anti-VEGF antibody (e.g., an anti-VEGF/anti-angiopoietin 2 bispecific antibody such as RG-7716; Roche)), a soluble recombinant receptor fusion protein (e.g., EYLEA® (aflibercept)), a VEGF variant, a soluble VEGFR fragment, an aptamer capable of blocking VEGF (e.g., pegaptanib) or VEGFR, a neutralizing anti-VEGFR antibody, a small molecule inhibitor of VEGFR tyrosine kinases, an anti-VEGF DARPin® (e.g., abicipar pegol), a small interfering RNAs which inhibits expression of VEGF or VEGFR, a

VEGFR tyrosine kinase inhibitor (e.g., 4-(4-bromo-2-fluoroanilino)-6-methoxy-7-(1-methylpiperidin-4-ylmethoxy)quinazoline (ZD6474), 4-(4-fluoro-2-methylindol-5-yloxy)-6-methoxy-7-(3-pyrrolidin-1-ylpropoxy)quinazoline (AZD2171), vatalanib (PTK787), semaxaminib (SU5416; SUGEN), and SUTENT® (sunitinib)), and combinations thereof.

[00125] Other suitable anti-angiogenic agents that may be administered in combination with an antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, for treatment of an ocular disorder (e.g., AMD, GA, DME, DR, or RVO) include corticosteroids, angiostatic steroids, anecortave acetate, angiostatin, endostatin, tyrosine kinase inhibitors, matrix metalloproteinase (MMP) inhibitors, insulin-like growth factor-binding protein 3 (IGFBP3), stromal derived factor (SDF-1) antagonists (e.g., anti-SDF-1 antibodies), pigment epithelium-derived factor (PEDF), gamma-secretase, Delta-like ligand 4, integrin antagonists, hypoxia-inducible factor (HIF)-1α antagonists, protein kinase CK2 antagonists, agents that inhibit stem cell (e.g., endothelial progenitor cell) homing to the site of neovascularization (e.g., an anti-vascular endothelial cadherin (CD-144) antibody and/or an anti-SDF-1 antibody), and combinations thereof.

[00126] In some embodiments, an anti-C3 antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, can be administered in combination with an agent that has activity against neovascularization for treatment of an ocular disorder (e.g., AMD, GA, DME, DR, or RVO), such as an anti-inflammatory drug, a mammalian target of rapamycin (mTOR) inhibitor (e.g., rapamycin, AFINITOR® (everolimus), and TORISEL® (temsirolimus)), cyclosporine, a tumor necrosis factor (TNF) antagonist (e.g., an anti-TNFα antibody or antigen-binding fragment thereof (e.g., infliximab, adalimumab, certolizumab pegol, and golimumab) or a soluble receptor fusion protein (e.g., etanercept)), an anti-complement agent, a nonsteroidal anti-inflammatory agent (NSAID), or combinations thereof.

[00127] Any suitable AMD therapeutic agent can be administered as an additional therapeutic agent in combination with an anti-C3 antibody of the present disclosure, or an antibody conjugate, fusion protein, and/or polymeric formulation thereof, for treatment of an ocular disorder (e.g., AMD, GA, DME, DR, or RVO), including, but not limited to, a VEGF antagonist, for example, an anti-VEGF antibody (e.g., LUCENTIS® (ranibizumab), RTH-258 (formerly ESBA-1008, an anti-VEGF single-chain antibody fragment; Novartis), or a bispecific anti-VEGF antibody (e.g.,

an anti-VEGF/anti-angiopoietin 2 bispecific antibody such as RG-7716; Roche)), a soluble VEGF receptor fusion protein (e.g., EYLEA® (aflibercept)), an anti-VEGF DARPin® (e.g., abicipar pegol; Molecular Partners AG/Allergan), or an anti-VEGF aptamer (e.g., MACUGEN® (pegaptanib sodium)); a platelet-derived growth factor (PDGF) antagonist, for example, an anti-PDGF antibody, an anti-PDGFR antibody (e.g., REGN2176-3), an anti-PDGF-BB pegylated aptamer (e.g., FOVISTA®; Ophthotech/Novartis), a soluble PDGFR receptor fusion protein, or a dual PDGF/VEGF antagonist (e.g., a small molecule inhibitor (e.g., DE-120 (Santen) or X-82 (TyrogeneX)) or a bispecific anti-PDGF/anti-VEGF antibody)); VISUDYNE® (verteporfin) in combination with photodynamic therapy; an antioxidant; a complement system antagonist, for example, a complement factor C5 antagonist (e.g., a small molecule inhibitor (e.g., ARC-1905; Opthotech) or an anti-C5 antibody (e.g., LFG-316; Novartis), a properdin antagonist (e.g., an anti-properdin antibody, e.g., CLG-561; Alcon), or a complement factor D antagonist (e.g., an anti-complement factor D antibody, e.g., lampalizumab; Roche)); a visual cycle modifier (e.g., emixustat hydrochloride); squalamine (e.g., OHR-102; Ohr Pharmaceutical); vitamin and mineral supplements (e.g., those described in the Age-Related Eye Disease Study 1 (AREDS1; zinc and/or antioxidants) and Study 2 (AREDS2; zinc, antioxidants, lutein, zeaxanthin, and/or omega-3 fatty acids)); a cell-based therapy, for example, NT-501 (Renexus); PH-05206388 (Pfizer), huCNS-SC cell transplantation (StemCells), CNTO-2476 (Janssen), OpRegen (Cell Cure Neurosciences), or MA09-hRPE cell transplantation (Ocata Therapeutics); a tissue factor antagonist (e.g., hl-con1; Iconic Therapeutics); an alpha-adrenergic receptor agonist (e.g., brimonidine tartrate); a peptide vaccine (e.g., S-646240; Shionogi); an amyloid beta antagonist (e.g., an anti-beta amyloid monoclonal antibody, e.g., GSK-933776); an S1P antagonist (e.g., an anti-S1P antibody, e.g., iSONEP™; Lpath Inc); a ROBO4 antagonist (e.g., an anti-ROBO4 antibody, e.g., DS-7080a; Daiichi Sankyo); a lentiviral vector expressing endostatin and angiostatin (e.g., RetinoStat); and any combination thereof. In some instances, AMD therapeutic agents (including any of the preceding AMD therapeutic agents) can be co-formulated. For example, the anti-PDGFR antibody REGN2176-3 can be co-formulated with aflibercept (EYLEA®). In some instances, such a co-formulation can be administered in combination with an antibody of the present disclosure. In some instances, the ocular disorder is AMD (e.g., wet AMD).

[00128] In addition to therapeutic uses, an anti-C3 antibody or antigen-binding fragment, described herein can be used in diagnostic or research applications. Research applications include, for example, methods that utilize the anti-C3 antibody and a label to detect C3, C3a, and/or C3b in a sample, e.g., in a human body fluid or in a cell or tissue extract. The anti-C3 antibody or antigen-binding fragment thereof may be employed in any suitable assay for measuring C3, C3a, and/or C3b in a sample for diagnostic and/or research purposes. Such assays include, but are not limited to, sandwich immunoassays, enzyme immunoassays (EIA), enzyme-linked immunosorbent assays (ELISA), lateral flow assays, competitive inhibition immunoassays (e.g., forward and reverse), competitive binding assays, Forster resonance energy transfer (FRET), one-step antibody detection assays, single molecule detection assays, radioimmunoassays (RIA), and FACS. Such methods are disclosed in, for example, U.S. Patents 6,143,576; 6,113,855; 6,019,944; 5,985,579; 5,947,124; 5,939,272; 5,922,615; 5,885,527; 5,851,776; 5,824,799; 5,679,526; 5,525,524; and 5,480,792; and Adamczyk et al., *Anal. Chim. Acta*, *579*(1): 61-67 (2006).

[00129] The anti-C3 antibody or antigen-binding fragment thereof can be provided in a kit, e.g., a packaged combination of reagents in predetermined amounts with instructions for performing an assay using the antibody (e.g., an assay that detects C3, C3a, and/or C3b). As such, the disclosure provides a kit comprising the antibody or antigen-binding fragment described herein and instructions for use thereof. The instructions can be in paper form or computer-readable form, such as a disk, CD, DVD, etc. Alternatively or additionally, the kit can comprise a calibrator or control, and/or at least one container (e.g., tube, microtiter plates, or strips) for conducting an assay, and/or a buffer, such as an assay buffer or a wash buffer. Ideally, the kit comprises all components, i.e., reagents, standards, buffers, diluents, etc., which are necessary to perform the assay. Other additives may be included in the kit, such as stabilizers, buffers (e.g., a blocking buffer or lysis buffer), and the like. The relative amounts of the various reagents can be varied to provide for concentrations in solution of the reagents which substantially optimize the sensitivity of the assay. The reagents may be provided as dry powders (typically lyophilized), including excipients which on dissolution will provide a reagent solution having the appropriate concentration.

[00130] The following examples further illustrate the various embodiments of the present disclosure but should not be construed as in any way limiting its scope.

EXAMPLES

[00131] It will be readily apparent to those skilled in the art that other suitable modifications and adaptations of the methods of the present disclosure described herein are readily applicable and appreciable, and may be made using suitable equivalents without departing from the scope of the present disclosure or the aspects and embodiments disclosed herein. Having now described the present disclosure in detail, the same will be more clearly understood by reference to the following examples, which are merely intended only to illustrate some aspects and embodiments of the disclosure, and should not be viewed as limiting to the scope of the disclosure. The disclosures of all journal references, U.S. patents, and publications referred to herein are hereby incorporated by reference in their entireties.

[00132] The present disclosure has multiple aspects, illustrated by the following non-limiting examples.

EXAMPLE 1

[00133] **Recovery of C3 antibody sequences from immunized mice**. C3 antibody sequences were recovered from immunized mice followed by phage display with either fixed or diverse light chains. Selected leads were produced as full aglyco IgG1s and extensively characterized.

[00134] ***C3 Recombinant Proteins***. C3 proteins were procured from Complement Technologies (Tyler, TX); the proteins were purified directly from the relevant species (human or cynomolgus) sera. Recombinant proteins were qualified with analytic SEC and binding studies to established antibodies.

[00135] ***C3 Immunization***. Two cohorts of Alloy Therapeutics transgenic humanized mice, ATX-GK Mix, were immunized with either human C3 or cynomolgus C3 using the following 5 week protocols: *Cohort 1*: 5 ATX-GX mix mice immunized with human C3 (REA23) using standard 5-week RIMMS protocol with 10 ug subcutaneous dosing of antigen. The first dose was emulsified in complete Freund's adjuvant with 4 follow on weekly 10 ug doses in incomplete Freund's adjuvant. *Cohort 2*: As Cohort 1 but with cynomolgus C3 (REA20).

[00136] Sample bleeds were conducted at the fourth week and tested for antigen positive titer and cross reactive titer (human for cynomolgus cohort or cynomolgus for human cohort). ELISA plates were coated with 1 ug/ml of relevant recombinant protein overnight. Coated plates were

incubated with sera across a descending 5 x 10-fold range starting at 1:100 and terminating at 1:10E7 dilutions. Antibodies bound to the coated antigen were detected with anti-mouse IgG HRP secondary antibody and quantified with the aid of one step TMB solution and OD determination at 450 nM using a microplate reader. Note, the positive control antibody used for the ELISA experiment is not cross reactive to the cyno C3 protein (FIGS. 1A-1D).

[00137] ***Antibody Sequence Recovery - Phage Display***. Spleen tissues from high titer mice were preserved at harvest for sequence recovery via phage display. RNA was extracted from said tissues. Two sequence recovery strategies were used in this study, a fixed light strategy and a diverse light chain strategy. For both strategies, variable heavy chains were amplified from the RNA prepared from the spleen tissues via reverse transcription. Following reverse transcription, viable gene specific primers and PCR were used to create DNA fragments which could be cloned into a phage display vector designed to express Fabs on phage g3p protein. For the diverse light chain strategy, the same approach was used to amplify the natural diversity of the light chain from the spleen RNA and clone into the Fab vector. For the fixed light chain strategy, the relevant part of the Fab vector was fixed to two specific sequences with constructs synthesized commercially that match the LC of ATX-P-569 and ATX-P-592.

[00138] Once complete, the libraries of phage expressing unique Fabs or Fabs with fixed light chains were amplified, purified, and depleted on non-specific binders. Phage were allowed to bind to biotinylated C3 antigens (human and/or cyno) captured on streptavidin magnetic beads. Phage remaining bound to antigens beads after several stringent washes was eluted using a basic triethylamine solution and neutralized with Tris buffer pH 8.0. Eluted phages were reinfected into TG1 bacterial cells, amplified by co-infection with M12 helper phage, and purified by PEG precipitation. A small sample was saved for polyclonal analysis. Purified phages expressing Fabs were selected for antigen binding as described earlier in a subsequent 2nd round. Phage from the second round output were diluted and infected in TG1 cells. Polyclonal pools of phage output from both rounds were tested by ELISA to confirm enrichment and examine cross reactivity (FIG. 2).

[00139] Follow on monoclonal ELISA on individual colonies was conducted and from this second ELISA, clones were identified for rolling circle amplification and Sanger Sequencing of the variable heavy and light chain regions of the Fab where appropriate (for diverse libraries only, for fixed LC libraries only sequencing the HC was required). From the sequence analysis, a group

of clones were advanced for reformatting into full length antibodies. The selected group broadly represented the clonotype diversity discovered in both the fixed/cLC and diverse libraries. In total, 113 paired variable heavy and light chain sequences were put into production across the fixed and diverse libraries.

[00140] ***Antibody Production.*** Unique variable heavy and light chain pairs from the phage display campaigns were cloned into vectors designed to express full length antibodies as algyco IgG1s in HEK293 cells under the control of a CMV promoter. Antibody expression vectors were complexed with polyethylenimine and transfected into HEK293 cultures. After 5 days of shaking at 37 C in 293 cell culture media, antibodies were captured on agarose-based protein A resin. After several stringent washes, antibodies were eluted in citrate solution, pH 3, neutralized with Hepes, pH 9, and buffer exchanged into PBS.

EXAMPLE 2

[00141] ***C3 Antibody Binding Kinetics.*** Experiments were conducted to determine the binding kinetics of anti-C3 antibodies, species cross-reactivity, and epitope cross-blocking.

[00142] Kinetic experiments were performed on Carterra LSA with a running buffer of PBS pH 7.40, 1% BSA, 0.05% Tween20. Antibodies were captured on an anti-human Fc capture chip prepared with an HC30M chip. For kinetics analysis, C3a, C3b from Complement Technology, or C3-His from Acro Biosystems, were injected sequentially at a concentration from 0.076 nM to 1500 nM (a serial 3-fold dilution). For each concentration, there was a 5 Min association followed by 15 Min dissociation. Results were processed and analyzed in Carterra LSA Kinetics Software. The kinetic data was referenced with the interstitial reference spots and double-referenced to a buffer cycle, and then fit globally to a 1:1 binding model to determine their apparent association and dissociation kinetic rate constants (K_a and K_D values). The ratio K_D / K_a was used to derive the K_D value of each antigen/mAb interaction ($K_D = K_D / K_a$) (FIG. 3).

[00143] ***Cross-reactivity assay by SPRi.*** The binding experiments were performed on Carterra LSA with a running buffer of PBS pH 7.40, 1% BSA, 0.05% Tween20. Antibodies were covalently printed on an HC30M chip. Chip was activated with 33 mM s-NHS and 133 mM EDC in 100 mM MES pH 5.5 for 7 minutes. Antibodies at 10 mg/ml in acetic acid buffer pH 4.5 were used for printing for 10 min. The printed chip was then quenched with 1 M ethanolamine pH 8.5 for 7 min.

For the reactivity assay, human C3, C3a, C3b, and cyno C3 from Complement Technology was tested with 5 Min association followed by 15 Min dissociation. Results were processed and analyzed in Carterra LSA Kinetics Software. The data was referenced with the interstitial reference spots and double-referenced to a buffer cycle, and then the responses (nm) after association were reported. Isotype control was used to determine the cutoff response for positive binding (FIGS. 4 and 5).

[00144] ***Epitope Binning.*** High-throughput epitope binning experiment was done on real-time label-free biosensors (Carterra LSA) to sort large panels of mAbs into bins based on their ability to block one another for binding to the antigen. In a pairwise epitope binning analysis, antigen and antibody 2 (analyte antibody) are sequentially applied to the sensor chip (HC200M) covalently pre-loaded with antibody 1 (ligand antibody). An increase in response upon exposure to the analyte antibody indicates non-competition between the two antibodies, whereas a lack of change in the signal indicates competition. Antibodies having the same blocking profiles towards others in the test set are grouped into one bin. Community network plots are used to explore clustering of mAbs that share similar but not necessarily identical competition profiles. Rather than relying strictly on the sandwiching/blocking assignments in the heat map, as the Bin network plots do, hierarchical clustering is applied to the sorted heat map to generate dendrograms, which progressively group mAbs (FIGS. 6 and 7).

EXAMPLE 3

[00145] **C3 Antibody Polyreactivity.** Experiments were conducted to determine the reactivity of the C3 antibodies of the present disclosure with various other proteins using ELISA and Carterra LSA platforms (FIGS. 8 and 9). The methods used were similar as reported by Hötzel et al. (2012). Briefly, baculovirus particles (BVP, Lake Pharma) was diluted 1:100 in 50 mM sodium bicarbonate (pH 9.3). After overnight incubation of 50 μL of BVP on ELISA plates (3369; Corning) at 4 °C overnight, unbound BVPs were aspirated from the wells. All remaining steps were performed at RT. The plate was blocked with 100 μL of blocking buffer (PBS with 1% BSA) for 1 h before three washes with 100 μL of PBS. Next, 50 μL of 16 nM testing antibodies was added to the wells and incubated for 1 h followed by washes with 100 μL of PBS. HRP-conjugated goat anti-human IgG antibody at 1:1000 (Jackson ImmunoResearch) was used as the secondary

antibody, and incubated for 1 h followed by washes as before. Finally, 50 μL of TMB substrate (34021; Fisher Scientific) was added to each well and incubated for 10–15 min. The reactions were stopped by adding 50 μL of 2 M sulfuric acid to each well. The absorbance was read at 450 nm and BVP score determined by normalizing absorbance by control wells with no test antibody.

[00146] Additional experiments were conducted to determine the blocking potential of the C3 antibodies of the present disclosure for CFHR4 (FIG. 10B) and CFH (FIG. 10B).

EXAMPLE 4

[00147] Experiments were conducted to assess the effects of the C3 antibodies of the present disclosure on alternative pathway complement activation based on the quantification of red blood cell hemolysis (FIG. 11). Briefly, to measure complement activity, sheep or human red blood cells (SRBCs and HRBCs) were used to perform a hemolytic assay. Erythrocytes were washed and suspended in Gelatin Veronal buffer containing Mg2+ and Ca2+ (GVB++). A 1% erythrocyte suspension was incubated for 30 min at 37 °C with 1/200 diluted rabbit anti-SRBC or rabbit anti-HRBC serum. The Ab-sensitized erythrocytes were washed and re-suspended in GVB+ + to 2%. Then, 100μl of the erythrocyte suspension with GVB+ + diluted with an equal volume of serum. To lyse the SRBCs, the serum was diluted to 30%, 15%, 7.5%, and 3.75%. To lyse the HRBCs, the freshly prepared mouse serum was diluted at 15%, 7.5%, 3.75%, 1.875%.

[00148] Experiments were conducted in 96-well plates in triplicate. The plates were incubated for 30 min at 37 °C. Unlysed cells were removed by centrifugation, and hemoglobin in the supernatant was measured on the basis of the ABS_{450}. The percentage lysis was calculated as follows: % LYSIS = (test ABS_{450} − blank ABS_{450}/total lysis ABS_{450}) × 100.

[00149] To reconstitute the complement-mediated hemolysis caused by the C9−/− serum, Ab - sensitized HRBCs were incubated primarily with GVB+ + - diluted 15% mC9−/− derived serum. The unlysed erythrocytes were washed and collected by centrifugation. A 2% erythrocyte suspension was prepared by adding normal saline (NS) to the HRBC pellet. mC9+/+, mC9+/− or mC9−/− serum was pretreated with 10 mM EDTA for 30 min and then diluted with NS before addition of an equal volume to the erythrocyte suspension. Hemoglobin in the supernatant and the percentage lysis were analyzed as described above.

[00150] As shown in FIG. 11, an assay was conducted to test whether the C3b antibodies of the present disclosure were capable of activating the alternative complement pathway by quantifying sheep red blood cell (SRBC) hemolysis. The assay was run twice in parallel, once with sensitized SRBC (FIG. 11) and once with non-sensitized SRBC. As shown, eight C3b antibodies were tested in parallel with compstatin, a cyclic peptide that binds to C3 and inhibits its cleavage. The compstatin assays were run with and without normal human serum (NHS). NHS is the source of complement components and in its absence there is no SRBC lysis. (This is the expected result as any lysis in the absence of NHS would be non-complement mediated, e.g., the result of residual detergent.) The results indicated that the C3b antibodies tested reduced percent hemolysis at increasing concentrations, thus demonstrating their efficacy at inhibiting activation of the alternative complement pathway.

[00151] Sequences

[00152] The various amino acid sequences and nucleic acid sequences referenced herein are provided below.

[00153] Table 1: Anti-C3 antibodies (CDR sequences)

SEQ ID NO:	Antibody Name:	Descriptor:	Sequence:
VH Family: IGHV-1,3,5,7			
1	-	HCDR1 Consensus	$X_1YX_2X_3X_4$ (X_1 is G, S, N, D, T, or A; X_2 is Y, A, G, W, or T; X_3 is L, M, I, or V; X_4 is H, N, S, or G)
2	ATX-P-3369	HCDR1	GYYLH
3	ATX-P-3396	HCDR1	GYYMH
4	ATX-P-3413	HCDR1	GYYMH
5	ATX-P-3418	HCDR1	SYAMN
6	ATX-P-3419	HCDR1	SYGIS
7	ATX-P-3426	HCDR1	SYWIG
8	ATX-P-3428	HCDR1	GYGIS
9	ATX-P-3431	HCDR1	NYWIG
10	ATX-P-3432	HCDR1	DYYMH
11	ATX-P-3433	HCDR1	DYYMH
12	ATX-P-3435	HCDR1	NYGIS
13	ATX-P-3440	HCDR1	TYGIS
14	ATX-P-3452	HCDR1	GYYMN
15	ATX-P-3454	HCDR1	NYAVN
16	ATX-P-3458	HCDR1	GYYLH
17	ATX-P-3466	HCDR1	SYTMN
18	ATX-P-3469	HCDR1	AYAIH
19	ATX-P-3470	HCDR1	SYTMN
20	-	HCDR2 Consensus	$X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$

			(X_1 is W, I, or V; X_2 is N, S, or Y; X_3 is P, T, A, G, or Y; X_4 is N, Y, G, D, H, or A; X_5 is S, T, N, G, or D; X_6 is G, or S; X_7 is D, G, T, N, V, A, or H; X_8 is T, P, or K; X_9 is N, Y, T, H, R, I, D, or K; X_{10} is Y, or A; X_{11} is V, Q, A, or S; X_{12} is Q, K, P, or D; X_{13} is N, F, K, G, S, or Q; X_{14} is F, Q, L, or V; X_{15} is Q, G, T, or K)
21	ATX-P-3369	HCDR2	WINPNSGDTNYVQNFQG
22	ATX-P-3396	HCDR2	WINPNSGGTYAQKFQG
23	ATX-P-3413	HCDR2	WINPNSGGTTYAQKFQG
24	ATX-P-3418	HCDR2	WINTNTGTPTYAQGFTG
25	ATX-P-3419	HCDR2	WISAYNGNTHYAQNLQG
26	ATX-P-3426	HCDR2	IIYPGDSDTRYSPSFQG
27	ATX-P-3428	HCDR2	WISAYNGNTHYAQNLQG
28	ATX-P-3431	HCDR2	IIYPGDSDTIYSPSFQG
29	ATX-P-3432	HCDR2	WINPNSGVTYYAQKFQG
30	ATX-P-3433	HCDR2	WINPNNGGTDYAQKFQG
31	ATX-P-3435	HCDR2	WISAYNGNTHYAQKLQG
32	ATX-P-3440	HCDR2	WISAYSGNTNYAQKLQG
33	ATX-P-3452	HCDR2	WINPNSGATNYAQKFQG
34	ATX-P-3454	HCDR2	WINTNTGHPTYAQGFTG
35	ATX-P-3458	HCDR2	WINPHSGGTIYAQKFQD
36	ATX-P-3466	HCDR2	WINTATGTPTYAQGFTG
37	ATX-P-3469	HCDR2	VISYDGSNKKYADSVKG
38	ATX-P-3470	HCDR2	WINTNTGTPTYAQGFTG
39	ATX-P-3369	HCDR3	SYVDTSSSAFDI
40	ATX-P-3396	HCDR3	ERGDYDGDAFDI
41	ATX-P-3413	HCDR3	EAGGSGEYFQH
42	ATX-P-3418	HCDR3	HSTSFDY
43	ATX-P-3419	HCDR3	SIAALDF
44	ATX-P-3426	HCDR3	HDYFDIGGYFDY
45	ATX-P-3428	HCDR3	AGLGIDY
46	ATX-P-3431	HCDR3	GRGYSGYEGAFDI
47	ATX-P-3432	HCDR3	DRTFYFDY
48	ATX-P-3433	HCDR3	GVYDVVVPTAIVNWFDP
49	ATX-P-3435	HCDR3	AAAAVDY
50	ATX-P-3440	HCDR3	ERVSNWVFDF
51	ATX-P-3452	HCDR3	DGAKWNHEGYYFDY
52	ATX-P-3454	HCDR3	DSSSWGY
53	ATX-P-3458	HCDR3	WNSGDSYYYYMDV
54	ATX-P-3466	HCDR3	YSGSHSFDY
55	ATX-P-3469	HCDR3	GLPFDY
56	ATX-P-3470	HCDR3	YTGNYSFDY
VH Family: IGHV3			
57	-	HCDR1 Consensus	$X_1X_2X_3MX_4$ (X_1 is D, N, S, or A; X_2 is Y, or A; X_3 is A, W, Y, S, C, D, or G; X_4 is H, S, or N)
58	ATX-P-3362	HCDR1	DYAMH
59	ATX-P-3366	HCDR1	NAWMS
60	ATX-P-3395	HCDR1	SYWMH
61	ATX-P-3397	HCDR1	NYYMN
62	ATX-P-3405	HCDR1	SYSMN
63	ATX-P-3407	HCDR1	SYCMN
64	ATX-P-3408	HCDR1	SYWMH
65	ATX-P-3410	HCDR1	AYDMH

66	ATX-P-3444	HCDR1	SYGMN
67	ATX-P-3463	HCDR1	SYAMH
68	ATX-P-3468	HCDR1	SYAMH
69	ATX-P-3471	HCDR1	SYAMS
70	-	HCDR2 Consensus	$X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (X_1 is G, R, N, S, H, T, V, or A; X_2 is S, K, N, or G; X_3 is W, S, Q, T, G, or Y; X_4 is N, K, D, S, A, or Y; X_5 is S, T, or G; X_6 is G, D, or S; X_7 is S, G, E, Y, T, or N; X_8 is I, G, T, K, or Y; X_9 is A, T, S, Y, or N; X_{10} is Y, T, P, or F; X_{11} is A, D, or V; X_{12} is D, Y, S, or A; X_{13} is S, A, or V; X_{14} is V, A, or K; X_{15} is K, P, Q, or G)
71	ATX-P-3362	HCDR2	GISWNSGSIAYADSVKG
72	ATX-P-3366	HCDR2	RIKSKTDGGTTDYAAPVKG
73	ATX-P-3395	HCDR2	RINSDGSSTSYADSVQG
74	ATX-P-3397	HCDR2	NIKQDGSEKYYVDSVKG
75	ATX-P-3405	HCDR2	SISSSSSYIYYADSVKG
76	ATX-P-3407	HCDR2	SINSDSSYIYYADSVKG
77	ATX-P-3408	HCDR2	HINSDGSSTNYADSVKG
78	ATX-P-3410	HCDR2	TIGTAGDTYYPDSVKG
79	ATX-P-3444	HCDR2	SISGYGSYIYYAASVKG
80	ATX-P-3463	HCDR2	VISYDGSNKYYADSVKG
81	ATX-P-3468	HCDR2	VISYDGSNKYYADSVKG
82	ATX-P-3471	HCDR2	AISGSGDSTYFADSVKG
83	ATX-P-3362	HCDR3	VAAAAGIPFFDY
84	ATX-P-3366	HCDR3	RYNSDFDY
85	ATX-P-3395	HCDR3	GQHLVQDY
86	ATX-P-3397	HCDR3	DGYYNFDAFDI
87	ATX-P-3405	HCDR3	EGYDNWNSACDI
88	ATX-P-3407	HCDR3	EGYYNWNGGNDY
89	ATX-P-3408	HCDR3	EGYWNGDTFDI
90	ATX-P-3410	HCDR3	GGSSSWYDWYFDL
91	ATX-P-3444	HCDR3	ELGGIYYGVGYFDL
92	ATX-P-3463	HCDR3	RGGYSYGPFEH
93	ATX-P-3468	HCDR3	RGNWNYGPFHY
94	ATX-P-3471	HCDR3	ILGYCSGTSCYGLFDN
VH Family: IGHV4-4			
95	-	HCDR1 Consensus	$X_1X_2X_3WWX_4$ (X_1 is I, S, R, N, or K; X_2 is N, D, S, or G; X_3 is N, S, T, D, Y, or H; X_4 is S, N, or T)
96	ATX-P-3360	HCDR1	INNWWS
97	ATX-P-3361	HCDR1	SNNWWS
98	ATX-P-3363	HCDR1	RDNWWS
99	ATX-P-3365	HCDR1	SNNWWS
100	ATX-P-3373	HCDR1	NDNWWS
101	ATX-P-3378	HCDR1	NDNWWS
102	ATX-P-3382	HCDR1	SNSWWN
103	ATX-P-3383	HCDR1	KDNWWT
104	ATX-P-3384	HCDR1	SDNWWN
105	ATX-P-3386	HCDR1	NDNWWS
106	ATX-P-3387	HCDR1	NDNWWN
107	ATX-P-3389	HCDR1	SSNWWS
108	ATX-P-3391	HCDR1	NDNWWS
109	ATX-P-3392	HCDR1	NDNWWS
110	ATX-P-3412	HCDR1	SSTWWS

111	ATX-P-3421	HCDR1	SNNWWS
112	ATX-P-3430	HCDR1	SSDWWS
113	ATX-P-3437	HCDR1	SNNWWS
114	ATX-P-3438	HCDR1	NDYWWN
115	ATX-P-3441	HCDR1	SGHWWS
116	ATX-P-3442	HCDR1	SSDWWS
117	ATX-P-3453	HCDR1	SNNWWS
118	ATX-P-3455	HCDR1	SDNWWS
119	ATX-P-3456	HCDR1	SNNWWS
120	ATX-P-3459	HCDR1	SDNWWN
121	ATX-P-3462	HCDR1	SNNWWS
122	ATX-P-3467	HCDR1	SDYWWS
123	ATX-P-3472	HCDR1	NDNWWS
124	-	HCDR2 Consensus	$X_1IX_2X_3SX_4X_5X_6X_7X_8NPSLX_9S$ (X_1 is K, Q, R, E, or D; X_2 is Y or F; X_3 is H or Q; X_4 is G, E, or R; X_5 is N, I, S, H, F, or T; X_6 is T or I; X_7 is D, N, or M; X_8 is Y or H; X_9 is K or R)
125	ATX-P-3360	HCDR2	KIYHSGNTDYNPSLKS
126	ATX-P-3361	HCDR2	QIYHSGITNYNPSLKS
127	ATX-P-3363	HCDR2	QIYQSGSTNYNPSLKS
128	ATX-P-3365	HCDR2	QIYHSGHTNYNPSLKS
129	ATX-P-3373	HCDR2	KIYHSEFTNYNPSLKS
130	ATX-P-3378	HCDR2	KIYHSEFTNYNPSLKS
131	ATX-P-3382	HCDR2	QIFHSGHTNYNPSLKS
132	ATX-P-3383	HCDR2	KIYHSGSTNYNPSLKS
133	ATX-P-3384	HCDR2	KIYHSGNTDYNPSLKS
134	ATX-P-3386	HCDR2	KIYHSGFTNYNPSLKS
135	ATX-P-3387	HCDR2	KIYHSGFTDYNPSLKS
136	ATX-P-3389	HCDR2	RIYHSGHTNYNPSLKS
137	ATX-P-3391	HCDR2	KIYHSEFTNYNPSLKS
138	ATX-P-3392	HCDR2	KIYHSEFTNYNPSLKS
139	ATX-P-3412	HCDR2	EIYHSGSTNYNPSLKS
140	ATX-P-3421	HCDR2	QIYHSENTNYNPSLKS
141	ATX-P-3430	HCDR2	EIYHSGSTNYNPSLKS
142	ATX-P-3437	HCDR2	EIYHSGNINYNPSLKS
143	ATX-P-3438	HCDR2	EIYHSGHTNYNPSLKS
144	ATX-P-3441	HCDR2	EIYHSGNTNYNPSLKS
145	ATX-P-3442	HCDR2	EIYHSRNTNYNPSLKS
146	ATX-P-3453	HCDR2	RIYHSGTTNYNPSLES
147	ATX-P-3455	HCDR2	EIYHSENTNYNPSLKS
148	ATX-P-3456	HCDR2	DIYHSGNTNYNPSLKS
149	ATX-P-3459	HCDR2	KIYHSGNTNYNPSLKS
150	ATX-P-3462	HCDR2	KIYQSGSTMYNPSLKS
151	ATX-P-3467	HCDR2	KIYHSGNTNHNPSLKS
152	ATX-P-3472	HCDR2	KIYHSEFTNYNPSLRS
153	ATX-P-3360	HCDR3	GSDYDFWSGYLDY
154	ATX-P-3361	HCDR3	AQWELRAGWFDP
155	ATX-P-3363	HCDR3	VYDWNYGGHFDY
156	ATX-P-3365	HCDR3	GATEILGYFDL
157	ATX-P-3373	HCDR3	EYHNFMDV
158	ATX-P-3378	HCDR3	EYENFMDV
159	ATX-P-3382	HCDR3	GGEYENSANWFDP

160	ATX-P-3383	HCDR3	GGDIAMEGDWFAP
161	ATX-P-3384	HCDR3	GGTETTGYMDV
162	ATX-P-3386	HCDR3	GGDNFMEGEGLGT
163	ATX-P-3387	HCDR3	GNHNYLWIGYLGT
164	ATX-P-3389	HCDR3	GRDLTGYFDY
165	ATX-P-3391	HCDR3	GVDFWSGSHMDV
166	ATX-P-3392	HCDR3	EGLELPHMDV
167	ATX-P-3412	HCDR3	SLYNWNDAAFDI
168	ATX-P-3421	HCDR3	VDDWNYGGHFDY
169	ATX-P-3430	HCDR3	GGHIGYYYMDV
170	ATX-P-3437	HCDR3	GGEYGDPVGYFDL
171	ATX-P-3438	HCDR3	GGTEITGYMDV
172	ATX-P-3441	HCDR3	GHYGDYVVYFDY
173	ATX-P-3442	HCDR3	GGVVADYYMDV
174	ATX-P-3453	HCDR3	GEEWELRGGVFDI
175	ATX-P-3455	HCDR3	GRELTGLFDY
176	ATX-P-3456	HCDR3	GGIAVTAYFDY
177	ATX-P-3459	HCDR3	GVDFWSGSHMDV
178	ATX-P-3462	HCDR3	DKPPLLGAFDY
179	ATX-P-3467	HCDR3	EGLELPHMDV
180	ATX-P-3472	HCDR3	EYQNYMDV
VH Family: IGHV4-5			
181	-	HCDR1 Consensus	$X_1YYX_2X_3$ (X_1 is S, or D; X_2 is W, or L; X_3 is S, or T)
182	ATX-P-3370	HCDR1	SYYWS
183	ATX-P-3371	HCDR1	SYYWS
184	ATX-P-3376	HCDR1	SYYWS
185	ATX-P-3420	HCDR1	DYYLT
186	ATX-P-3446	HCDR1	SYYWS
187	ATX-P-3449	HCDR1	SYYWS
188	ATX-P-3451	HCDR1	DYYWT
189	-	HCDR2 Consensus	$X_1X_2X_3X_4X_5GX_6TX_7YNPSLKS$ (X_1 is Y or E; X_2 is V or I; X_3 is Y or N; X_4 is Y or H; X_5 is S or I; X_6 is Y, F, or S; X_7 is N or K)
190	ATX-P-3370	HCDR2	YVYYSGYTKYNPSLKS
191	ATX-P-3371	HCDR2	YIYYSGFTKYNPSLNS
192	ATX-P-3376	HCDR2	YIYYSGFTKYNPSLKS
193	ATX-P-3420	HCDR2	EINHSGSTNYNPSLKS
194	ATX-P-3446	HCDR2	YVYYSGYTKYNPSLKS
195	ATX-P-3449	HCDR2	YIYYSGFTKYNPSLKS
196	ATX-P-3451	HCDR2	EVNHIGSTNYNPSLKS
197	ATX-P-3370	HCDR3	VESKWNYGPFDI
198	ATX-P-3371	HCDR3	REPRGRYNWNYGPFDI
199	ATX-P-3376	HCDR3	HPRGYNYGPFDY
200	ATX-P-3420	HCDR3	GSEDYYYYMDV
201	ATX-P-3446	HCDR3	VESKWNYGPFAI
202	ATX-P-3449	HCDR3	VDSKWNYGSFHI
203	ATX-P-3451	HCDR3	YSTSWYGWFDP
VH Family: IGHV4-6			
204	-	HCDR1 Consensus	$X_1X_2X_3YX_4WX_5$ (X_1 is S or N; X_2 is G or N; X_3 is S, K, R, N, or G; X_4 is Y, F, or N; X_5 is S or N)

205	ATX-P-3367	HCDR1	SGSYYWS
206	ATX-P-3375	HCDR1	SGKYFWS
207	ATX-P-3377	HCDR1	SGRYYWS
208	ATX-P-3436	HCDR1	SGSYYWS
209	ATX-P-3447	HCDR1	SGNYYWS
210	ATX-P-3448	HCDR1	SGGYNWN
211	ATX-P-3450	HCDR1	NNRYYWS
212	-	HCDR2 Consensus	$YIX_1X_2SGX_3TX_4YNPSLKX_5$ (X_1 is Y or N; X_2 is K, Y, or S; X_3 is F, S, Y, or N; X_4 is N, K, or Y; X_5 is S or N)
213	ATX-P-3367	HCDR2	YIYKSGFTNYNPSLKS
214	ATX-P-3375	HCDR2	YIYYSGSTNYNPSLKN
215	ATX-P-3377	HCDR2	YIYSSGYTNYNPSLKS
216	ATX-P-3436	HCDR2	YIYYSGSTKYNPSLKS
217	ATX-P-3447	HCDR2	YIYSSGSTNYNPSLKS
218	ATX-P-3448	HCDR2	YINYSGNTYYNPSLKS
219	ATX-P-3450	HCDR2	YIYYSGSTNYNPSLKS
220	ATX-P-3367	HCDR3	GGRGYSYGPFDY
221	ATX-P-3375	HCDR3	GGHNWNYAAFDI
222	ATX-P-3377	HCDR3	SRGYRYGPFDY
223	ATX-P-3436	HCDR3	DKGHWNYGAFDI
224	ATX-P-3447	HCDR3	SPRGYSYGPFAY
225	ATX-P-3448	HCDR3	GPLDTAMAPFDY
226	ATX-P-3450	HCDR3	DRPSRYKWNYDAFAI
VH Family: IGHV2			
227	-	HCDR1 Consensus	TSGVGVG
228	ATX-P-3406	HCDR1	TSGVGVG
229	ATX-P-3414	HCDR1	TSGVGVG
230	-	HCDR2 Consensus	$LIYWNX_1X_2X_3X_4YSPSLX_5S$ (X_1 is G or D; X_2 is D or V; X_3 is E or K; X_4 is R or F; X_5 is K or Q)
231	ATX-P-3406	HCDR2	LIYWNGDERYSPSLKS
232	ATX-P-3414	HCDR2	LIYWNDVKFYSPSLQS
233	-	HCDR3 Consensus	$X_1X_2NWX_3YX_4AFDI$ (X_1 is S or G; X_2 is P or D; X_3 is G or N; X_4 is E or R)
234	ATX-P-3406	HCDR3	SPNWGYEAFDI
235	ATX-P-3414	HCDR3	GDNWNYRAFDI
VL Family: IGKV-1,6			
236	-	LCDR1 Consensus	$X_1ASQX_2X_3X_4X_5X_6X_7X_8$ (X_1 is R or Q; X_2 is D, N, T, G, or S; X_3 is V or I; X_4 is S, I, R, G, T, or K; X_5 is T, N, R, or S; X_6 is A, W, F, D, Y, N, or C; X_7 is V or L; X_8 is A, N, G, or H)
237	ATX-P-1899	LCDR1	RASQDVSTAVA
238	ATX-P-3395	LCDR1	RASQNIITWLA
239	ATX-P-3396	LCDR1	RASQNIITWLA
240	ATX-P-3397	LCDR1	RASQNIITWLA
241	ATX-P-3405	LCDR1	RASQNIITWLA
242	ATX-P-3406	LCDR1	RASQNIITWLA
243	ATX-P-3407	LCDR1	RASQNIITWLA
244	ATX-P-3408	LCDR1	RASQNIITWLA
245	ATX-P-3410	LCDR1	RASQNIITWLA
246	ATX-P-3412	LCDR1	RASQNIITWLA
247	ATX-P-3413	LCDR1	RASQNIITWLA

248	ATX-P-3414	LCDR1	RASQNIITWLA
249	ATX-P-3418	LCDR1	RASQTIRNFLN
250	ATX-P-3419	LCDR1	RASQGIRNDLG
251	ATX-P-3420	LCDR1	RASQSISRYLN
252	ATX-P-3428	LCDR1	RASQGIRNDLG
253	ATX-P-3430	LCDR1	RASQSISNYLN
254	ATX-P-3431	LCDR1	RASQSIGSNLH
255	ATX-P-3432	LCDR1	RASQGISSYLA
256	ATX-P-3433	LCDR1	RASQSITSYLN
257	ATX-P-3435	LCDR1	RASQGIRNDLG
258	ATX-P-3441	LCDR1	RASQSISSYLN
259	ATX-P-3442	LCDR1	RASQTIRSYLN
260	ATX-P-3448	LCDR1	QASQDISNYLN
261	ATX-P-3451	LCDR1	RASQDISNYLN
262	ATX-P-3454	LCDR1	QASQDIKNCLN
263	ATX-P-3458	LCDR1	RASQGISSWLA
264	ATX-P-3462	LCDR1	RASQSISSYLN
265	ATX-P-3466	LCDR1	RASQGISNYLA
266	ATX-P-3469	LCDR1	RASQGISNYLA
267	ATX-P-3470	LCDR1	RASQGISNYLA
268	-	LCDR2 Consensus	$X_1ASX_2X_3X_4X_5$ (X_1 is S, K, A, Y, T, D, or V; X_2 is F, S, N, Q, or T; X_3 is L, S, or F; X_4 is Y, E, Q, or F; X_5 is S or T)
269	ATX-P-1899	LCDR2	SASFLYS
270	ATX-P-3395	LCDR2	KASSLES
271	ATX-P-3396	LCDR2	KASSLES
272	ATX-P-3397	LCDR2	KASSLES
273	ATX-P-3405	LCDR2	KASSLES
274	ATX-P-3406	LCDR2	KASSLES
275	ATX-P-3407	LCDR2	KASSLES
276	ATX-P-3408	LCDR2	KASSLES
277	ATX-P-3410	LCDR2	KASSLES
278	ATX-P-3412	LCDR2	KASSLES
279	ATX-P-3413	LCDR2	KASSLES
280	ATX-P-3414	LCDR2	KASSLES
281	ATX-P-3418	LCDR2	AASSLQS
282	ATX-P-3419	LCDR2	AASSLQS
283	ATX-P-3420	LCDR2	AASSLQS
284	ATX-P-3428	LCDR2	AASNLQS
285	ATX-P-3430	LCDR2	AASSLQS
286	ATX-P-3431	LCDR2	YASQSFS
287	ATX-P-3432	LCDR2	TASTLQS
288	ATX-P-3433	LCDR2	AASSLQS
289	ATX-P-3435	LCDR2	AASSLQS
290	ATX-P-3441	LCDR2	AASSFQS
291	ATX-P-3442	LCDR2	AASSLQS
292	ATX-P-3448	LCDR2	DASNLET
293	ATX-P-3451	LCDR2	AASSLES
294	ATX-P-3454	LCDR2	DASNLET
295	ATX-P-3458	LCDR2	AASSLQS
296	ATX-P-3462	LCDR2	AASSLQS
297	ATX-P-3466	LCDR2	VASTLQS

298	ATX-P-3469	LCDR2	AASTLQS
299	ATX-P-3470	LCDR2	AASTLQS
300	ATX-P-1899	LCDR3	QQSYATLPT
301	ATX-P-3395	LCDR3	QQYSSYSYT
302	ATX-P-3396	LCDR3	QQYSSYSYT
303	ATX-P-3397	LCDR3	QQYSSYSYT
304	ATX-P-3405	LCDR3	QQYSSYSYT
305	ATX-P-3406	LCDR3	QQYSSYSYT
306	ATX-P-3407	LCDR3	QQYSSYSYT
307	ATX-P-3408	LCDR3	QQYSSYSYT
308	ATX-P-3410	LCDR3	QQYSSYSYT
309	ATX-P-3412	LCDR3	QQYSSYSYT
310	ATX-P-3413	LCDR3	QQYSSYSYT
311	ATX-P-3414	LCDR3	QQYSSYSYT
312	ATX-P-3418	LCDR3	QQTYSIPIT
313	ATX-P-3419	LCDR3	LQDYNYPWT
314	ATX-P-3420	LCDR3	QQSYSSPIT
315	ATX-P-3428	LCDR3	LQDYNWPWT
316	ATX-P-3430	LCDR3	QQSYSSPLT
317	ATX-P-3431	LCDR3	HQSSSLPRT
318	ATX-P-3432	LCDR3	QQLNGYPPT
319	ATX-P-3433	LCDR3	QQSYSTPLT
320	ATX-P-3435	LCDR3	LQDYNWPYT
321	ATX-P-3441	LCDR3	QQSYSNPYT
322	ATX-P-3442	LCDR3	QQSYTTPLT
323	ATX-P-3448	LCDR3	QQANSFPLT
324	ATX-P-3451	LCDR3	QQSYSTPT
325	ATX-P-3454	LCDR3	QQFDNLPLT
326	ATX-P-3458	LCDR3	QQANSFPLT
327	ATX-P-3462	LCDR3	QQSYSTPYT
328	ATX-P-3466	LCDR3	QNYISAPLT
329	ATX-P-3469	LCDR3	QKYISAPLT
330	ATX-P-3470	LCDR3	QDYTSAPLT
VL Family: IGKV2			
331	-	LCDR1 Consensus	RSSQX$_1$LLHX$_2$NGYNYLD (X$_1$ is S or I; X$_2$ is S or T)
332	ATX-P-3426	LCDR1	RSSQSLLHSNGYNYLD
333	ATX-P-3452	LCDR1	RSSQILLHTNGYNYLD
334	-	LCDR2 Consensus	LGSX$_1$RAS (X$_1$ is N or Y)
335	ATX-P-3426	LCDR2	LGSNRAS
336	ATX-P-3452	LCDR2	LGSYRAS
337	-	LCDR3 Consensus	MQX$_1$LQTPX$_2$T (X$_1$ is T or A; X$_2$ is P or L)
338	ATX-P-3426	LCDR3	MQTLQTPPT
339	ATX-P-3452	LCDR3	MQALQTPLT
VL Family: IGKV3			
340	-	LCDR1 Consensus	RASQSX$_1$X$_2$X$_3$X$_4$X$_5$X$_6$ (X$_1$ is V or I; X$_2$ is S or R; X$_3$ is S, D, or R; X$_4$ is Y or S; X$_5$ is L or Y; X$_6$ is A, F, or L)
341	ATX-P-3436	LCDR1	RASQSVSSYLA
342	ATX-P-3440	LCDR1	RASQSVRSSYFA

343	ATX-P-3444	LCDR1	RASQSISSSYLA
344	ATX-P-3446	LCDR1	RASQSVRSSYLA
345	ATX-P-3447	LCDR1	RASQSVSSSYLA
346	ATX-P-3449	LCDR1	RASQSVSSSYLA
347	ATX-P-3468	LCDR1	RASQSVSDSYLA
348	ATX-P-3471	LCDR1	RASQSVSRSYLA
349	-	LCDR2 Consensus	X_1ASX$_2$RAT (X_1 is D or G; X_2 is S or N)
350	ATX-P-3436	LCDR2	DASNRAT
351	ATX-P-3440	LCDR2	GASSRAT
352	ATX-P-3444	LCDR2	GASSRAT
353	ATX-P-3446	LCDR2	GASSRAT
354	ATX-P-3447	LCDR2	GASSRAT
355	ATX-P-3449	LCDR2	GASSRAT
356	ATX-P-3468	LCDR2	GASSRAT
357	ATX-P-3471	LCDR2	GASSRAT
358	-	LCDR3 Consensus	QQX$_1$X$_2$X$_3$X$_4$PX$_5$T (X_1 is R or Y; X_2 is S, G, or D; X_3 is N or S; X_4 is W or S; X_5 is L, R, I, Y, F, or W)
359	ATX-P-3436	LCDR3	QQRSNWPLT
360	ATX-P-3440	LCDR3	QQYGSSPRT
361	ATX-P-3444	LCDR3	QQYGSSPIT
362	ATX-P-3446	LCDR3	QQYGSSPYT
363	ATX-P-3447	LCDR3	QQYGSSPFT
364	ATX-P-3449	LCDR3	QQYGSSPYT
365	ATX-P-3468	LCDR3	QQYDSSPFT
366	ATX-P-3471	LCDR3	QQYGSSPWT
VL Family: IGKV4			
367	-	LCDR1 Consensus	KSSQX$_1$X$_2$LYX$_3$SNX$_4$KNYLA (X_1 is S or T; X_2 is V or I; X_3 is R or S; X_4 is N or I)
368	ATX-P-3360	LCDR1	KSSQSVLYSSNNKNYLA
369	ATX-P-3361	LCDR1	KSSQSVLYSSNNKNYLA
370	ATX-P-3362	LCDR1	KSSQSVLYSSNNKNYLA
371	ATX-P-3363	LCDR1	KSSQSVLYSSNNKNYLA
372	ATX-P-3365	LCDR1	KSSQSVLYSSNNKNYLA
373	ATX-P-3366	LCDR1	KSSQSVLYSSNNKNYLA
374	ATX-P-3367	LCDR1	KSSQSVLYSSNNKNYLA
375	ATX-P-3369	LCDR1	KSSQSVLYSSNNKNYLA
376	ATX-P-3370	LCDR1	KSSQSVLYSSNNKNYLA
377	ATX-P-3371	LCDR1	KSSQSVLYSSNNKNYLA
378	ATX-P-3373	LCDR1	KSSQSVLYSSNNKNYLA
379	ATX-P-3375	LCDR1	KSSQSVLYSSNNKNYLA
380	ATX-P-3376	LCDR1	KSSQSVLYSSNNKNYLA
381	ATX-P-3377	LCDR1	KSSQSVLYSSNNKNYLA
382	ATX-P-3378	LCDR1	KSSQSVLYSSNNKNYLA
383	ATX-P-3382	LCDR1	KSSQSVLYSSNNKNYLA
384	ATX-P-3383	LCDR1	KSSQSVLYSSNNKNYLA
385	ATX-P-3384	LCDR1	KSSQSVLYSSNNKNYLA
386	ATX-P-3386	LCDR1	KSSQSVLYSSNNKNYLA
387	ATX-P-3387	LCDR1	KSSQSVLYSSNNKNYLA
388	ATX-P-3389	LCDR1	KSSQSVLYSSNNKNYLA
389	ATX-P-3391	LCDR1	KSSQSVLYSSNNKNYLA

390	ATX-P-3392	LCDR1	KSSQSVLYSSNNKNYLA
391	ATX-P-3421	LCDR1	KSSQTVLYRSNNKNYLA
392	ATX-P-3437	LCDR1	KSSQSVLYSSNNKNYLA
393	ATX-P-3438	LCDR1	KSSQSVLYSSNNKNYLA
394	ATX-P-3450	LCDR1	KSSQSVLYSSNNKNYLA
395	ATX-P-3453	LCDR1	KSSQSVLYRSNNKNYLA
396	ATX-P-3455	LCDR1	KSSQTILYRSNIKNYLA
397	ATX-P-3456	LCDR1	KSSQSVLYSSNNKNYLA
398	ATX-P-3459	LCDR1	KSSQSVLYSSNNKNYLA
399	ATX-P-3463	LCDR1	KSSQSVLYSSNNKNYLA
400	ATX-P-3467	LCDR1	KSSQSVLYSSNNKNYLA
401	ATX-P-3472	LCDR1	KSSQSVLYSSNNKNYLA
402	-	LCDR2 Consensus	WASX_1RES (X_1 is N or T)
403	ATX-P-3360	LCDR2	WASNRES
404	ATX-P-3361	LCDR2	WASNRES
405	ATX-P-3362	LCDR2	WASNRES
406	ATX-P-3363	LCDR2	WASNRES
407	ATX-P-3365	LCDR2	WASNRES
408	ATX-P-3366	LCDR2	WASNRES
409	ATX-P-3367	LCDR2	WASNRES
410	ATX-P-3369	LCDR2	WASNRES
411	ATX-P-3370	LCDR2	WASNRES
412	ATX-P-3371	LCDR2	WASNRES
413	ATX-P-3373	LCDR2	WASNRES
414	ATX-P-3375	LCDR2	WASNRES
415	ATX-P-3376	LCDR2	WASNRES
416	ATX-P-3377	LCDR2	WASNRES
417	ATX-P-3378	LCDR2	WASNRES
418	ATX-P-3382	LCDR2	WASNRES
419	ATX-P-3383	LCDR2	WASNRES
420	ATX-P-3384	LCDR2	WASNRES
421	ATX-P-3386	LCDR2	WASNRES
422	ATX-P-3387	LCDR2	WASNRES
423	ATX-P-3389	LCDR2	WASNRES
424	ATX-P-3391	LCDR2	WASNRES
425	ATX-P-3392	LCDR2	WASNRES
426	ATX-P-3421	LCDR2	WASTRES
427	ATX-P-3437	LCDR2	WASTRES
428	ATX-P-3438	LCDR2	WASTRES
429	ATX-P-3450	LCDR2	WASTRES
430	ATX-P-3453	LCDR2	WASTRES
431	ATX-P-3455	LCDR2	WASTRES
432	ATX-P-3456	LCDR2	WASTRES
433	ATX-P-3459	LCDR2	WASTRES
434	ATX-P-3463	LCDR2	WASTRES
435	ATX-P-3467	LCDR2	WASTRES
436	ATX-P-3472	LCDR2	WASTRES
437	-	LCDR3 Consensus	QQ$X_1X_2X_3$TX_4X_5 (X_1 is Y or F; X_2 is Y or F; X_3 is S, G, or D; X_4 is P or R; X_5 is Y, W, R, T, or P)
438	ATX-P-3360	LCDR3	QQYYSTPYT

439	ATX-P-3361	LCDR3	QQYYSTPYT
440	ATX-P-3362	LCDR3	QQYYSTPYT
441	ATX-P-3363	LCDR3	QQYYSTPYT
442	ATX-P-3365	LCDR3	QQYYSTPYT
443	ATX-P-3366	LCDR3	QQYYSTPYT
444	ATX-P-3367	LCDR3	QQYYSTPYT
445	ATX-P-3369	LCDR3	QQYYSTPYT
446	ATX-P-3370	LCDR3	QQYYSTPYT
447	ATX-P-3371	LCDR3	QQYYSTPYT
448	ATX-P-3373	LCDR3	QQYYSTPYT
449	ATX-P-3375	LCDR3	QQYYSTPYT
450	ATX-P-3376	LCDR3	QQYYS TPYT
451	ATX-P-3377	LCDR3	QQYYSTPYT
452	ATX-P-3378	LCDR3	QQYYSTPYT
453	ATX-P-3382	LCDR3	QQYYSTPYT
454	ATX-P-3383	LCDR3	QQYYSTPYT
455	ATX-P-3384	LCDR3	QQYYSTPYT
456	ATX-P-3386	LCDR3	QQYYSTPYT
457	ATX-P-3387	LCDR3	QQYYSTPYT
458	ATX-P-3389	LCDR3	QQYYSTPYT
459	ATX-P-3391	LCDR3	QQYYSTPYT
460	ATX-P-3392	LCDR3	QQYYSTPYT
461	ATX-P-3421	LCDR3	QQYYSTPWT
462	ATX-P-3437	LCDR3	QQYFGTPRT
463	ATX-P-3438	LCDR3	QQYYSTPRT
464	ATX-P-3450	LCDR3	QQYYSTPWT
465	ATX-P-3453	LCDR3	QQYYGTPRT
466	ATX-P-3455	LCDR3	QQYYSTRT
467	ATX-P-3456	LCDR3	QQYYSTPRT
468	ATX-P-3459	LCDR3	QQYYSTPPT
469	ATX-P-3463	LCDR3	QQFYDTPRT
470	ATX-P-3467	LCDR3	QQYYSTPWT
471	ATX-P-3472	LCDR3	QQYYSTPYT

[00154] Table 2: Anti-C3 antibodies (VH sequences)

SEQ ID NO:	**Antibody Name:**	**Descriptor:**	**Sequence:**
472	ATX-P-3360	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CATTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGCTTGGAAAAATCTATCATAGTGGGAACACCGAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAG TCCAAGAATCAGTTCTCCCTGAGGCTGAGTTCTGTGACCGCCGCG GACACGGCCGTATATTATTGTGCGAGCGGAAGCGATTACGATTTT TGGAGTGGTTATTTGGACTACTGGGGCCAGGGAACCCTGGTCACC GTCTCCTCA
473	ATX-P-3362	VH nt	GAAGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGG CAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTTGAT GATTATGCCATGCACTGGGTCCGGCAAGCTCCAGGGAAGGGCCT GGAGTGGGTCTCAGGTATTAGTTGGAATAGTGGTAGCATAGCCTA TGCGGACTCTGTGAAGGGCCGATTCACCATCTCCAGAGACAACGC

			CAAGAACTCCCTGTATCTGCAAATGAACAGTCTGAGAGTTGAGG ACACGGCCTTTTTTTACTGTGCAAGAGTCGCAGCAGCAGCTGGTA TCCCTTTCTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCT CCTCA
474	ATX-P-3363	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC TGGGACCCTGACCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAA CAGGGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCGGGGAAGG GGCTGGAGTGGATTGGACAAATCTATCAGAGTGGGAGCACCAAC TACAACCCGTCCCTCAAGAGTCGGGTCACCATATCAGTCGACAAG TCCAAGAACCAGTTCTCCCTGAAGCTGAGTTCTGTGACCGCCGCG GACACGGCCGTATATTACTGTGCGAGAGTATATGACTGGAACTAC GGGGGTCACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTC TCCTCA
475	ATX-P-3365	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCATCAG CAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGACAAATCTATCATAGTGGCCACACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCGGTTGACATGT CCAAGAACCAGTTCTCCCTGAAGCTGACCTCTGTGACCGCCGCGG ACACGGCCGTGTATTACTGTGCGAGGGGGGCTACAGAAATTCTG GGGTACTTCGATCTCTGGGGCCGTGGCACCCTGGTCACTGTCTCC TCA
476	ATX-P-3367	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCGTCAG CAGTGGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGA AGGGACTGGAGTGGATTGGATATATCTATAAAAGTGGGTTCACC AATTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGAC ACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCT GCGGACACGGCCGTGTATTACTGTGCGATAGGGGGACGTGGATA CAGCTATGGTCCTTTTGACTACTGGGGCCAGGGAACCCTGGTCAC CGTCTCCTCA
477	ATX-P-3369	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCTTCAC CGGCTACTATTTACACTGGGTGCGACAGGCCCCTGGACAAGGACT TGAGTGGATGGGATGGATCAACCCTAACAGTGGTGACACAAACT ATGTACAGAACTTTCAGGGCAGGGTCACCATGACCAGGGACACG TCCATCAGCACAGCCTACATGGAGCTGAGCAGGCTGAGATCTGA CGACACGGCCGTGTATTACTGTGCGAGATCCTACGTGGATACCAG CTCGTCGGCTTTTGATATCTGGGGACAAGGGACAATGGTCACCGT CTCTTCA
478	ATX-P-3370	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCAG TAGTTACTACTGGAGCTGGATCCGGCAGCCCCCCGGGAAGGGAC TGGAGTGGATTGGGTATGTCTATTACAGTGGGTACACCAAGTACA ACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGCCCA AGACCCAGTTCTCCCTGAAGATGAGCTCTGTGACCGCTGCGGACA CGGCCGTGTATTACTGTGCGAGCGTCGAATCAAAGTGGAACTACG GGCCTTTTGATATCTGGGGACAAGGGACAATGGTCACCGTCTCTT CA
479	ATX-P-3371	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGACTCCATCAG TAGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGAAGGGAC TGGAGTGGATTGGATATATCTATTACAGTGGGTTCACCAAGTACA ACCCCTCCCTCAACAGTCGAGTCACCATATCAGTAGACACGTCCA

			AGAGCCAGTTCTCCCTGAAGCTGACCTCTGTGACCGCTGCGGACA CGGCCGTGTATTACTGTGCGATGAGAGAGCCGAGAGGCCGGTAT AACTGGAACTACGGGCCTTTTGATATCTGGGGACAAGGGACAAT GGTCACCGTCTCTTCA
480	ATX-P-3373	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG TAATGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCCGGGAAGG GACTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTCACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGGAGCTGAACTCTGTGACCGCCGCGG ACACGGCCGTGTATTACTGTGCGAGAGAGTATCATAATTTCATGG ACGTCTGGTGCAAAGGGACCACGGTCACCGTCTCCTCA
481	ATX-P-3375	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGACTCCGTCAG CAGTGGTAAATACTTCTGGAGCTGGATCCGGCAGTCCCCAGGGA AGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGGAGCACC AACTACAACCCCTCCCTCAAGAATCGAGTCACCATATCGGTAGAC ACGTCCAAGAAGGAGTTGTCTCTGAAGCTGAGTTCTGTGACCGCT GCGGACACGGCCGTTTATTACTGTGCGAGAGGAGGGCATAACTG GAACTACGCTGCTTTTGATATCTGGGGACAAGGGACAATGGTCAC CGTCTCTTCA
482	ATX-P-3378	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG TAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGGAAGG GGTTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTCACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGGAGCTGAGCTCTGTGGCCGCCGCGG ACACGGCCGTGTATTACTGTGCGAGAGAGTATGAGAACTTCATGG ACGTCTGGGGCAAGGGGACCACGGTCACCGTCTCCTCA
483	ATX-P-3382	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCATCAG CAGTAATAGCTGGTGGAATTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGGCAAATCTTTCATAGTGGACACACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATGTCTATAGACAAGT CCAAGAACCAGTTCTCCCTGAAACTGACCTCTGTGACCGCCGCGG ACACGGCCCTGTATTACTGTGCGAGAGGAGGGGAGTATGAAAAC TCGGCGAACTGGTTCGACCCCTGGGGCCAAGGAACCCTGGTCACC GTCTCTTCA
484	ATX-P-3383	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGTCTCCATCAA CAAGGATAACTGGTGGACTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGGAAAATCTATCATAGTGGGAGCACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAC TCCAAGAACCAATTCTCCCTGAAGCTGAACTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTACGAGAGGGGGGGATATAGCTAT GGAGGGGGACTGGTTCGCCCCCTGGGGCCAGGGAACCCTGGTCA CCGTCTCCTCA
485	ATX-P-3384	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAGTGATAACTGGTGGAATTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGCTTGGAAAAATCTATCATAGTGGGAACACCGAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAG TCCAAGAATCAGTTCTCCCTGAGGCTGAGTTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGTGGAACTGAAACTAC

			GGGGTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCT CCTCA
486	ATX-P-3386	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAATGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAATGGATTGGGAAAATCTATCATAGTGGGTTCACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGAAGCTGAACTCTGTGACCGCCGCGG ACACGGCCGTGTATTACTGTGCGAGAGGGGGGGATAACTTTATG GAGGGGGAGGGGTTAGGGACCTGGGGCCCGGGAACCCTGGTCAC CGTCTCCTCA
487	ATX-P-3387	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAATGATAACTGGTGGAATTGGGTCCGCCAGTCCCCAGGGAAGG GGCTGGAGTGGATTGGAAAAATCTATCATAGTGGGTTCACCGACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCGG ACACGGCCGTGTATTATTGTGCGAGAGGAAACCATAACTATTTGT GGATTGGGTATTTGGGGACCTGGGGCCCGGGAACCCTGGTCACC GTCTCCTCA
488	ATX-P-3389	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCATCTGCGCTGTCTCTGGTGGCTCCATCAG TAGTAGTAATTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGGAGAATCTATCATAGTGGGCACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAG TCCAAGAACCAGTTCTCCCTGAAGCTGACCTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGGAGGGACTTAACTGG ATACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTC A
489	ATX-P-3391	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAACCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG TAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGGAAGG GGCTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTCACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGGAGCTGAGCTCTGTGACCGCCGCGG ACACGGCCGTATATTACTGTGCGAGAGGGGTCGATTTTTGGAGTG GTTCCCACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCT CCTCA
490	ATX-P-3392	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG TAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGGAAGG GGCTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTCACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CTAAGAACCAGTTTTCCCTGGAACTGAGCTCTGTGACCGCCGCGG ACACGGCCGTGTATTTCTGTGCGCGAGAAGGACTGGAACTACCCC ACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCTCA
491	ATX-P-3395	VH nt	GAGGTGCAGCTGGTGGAGTCCGGGGGAGGCGTGGTCAAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGCTACTGGATGCACTGGGTCCGCCAAGCTCCAGGGAAGGGGC TGGTGTGGGTCTCACGTATTAATAGTGATGGAAGTAGCACAAGCT ACGCGGACTCCGTGCAGGGCCGATTCACCATCTCCAGAGACATCG CCAAGAACACGCTGTATCTGCAAATGAACAGTCTGAGAGCCGAG GACACGGCTGTGTATTACTGTGCAAGAGGGCAGCACCTGGTTCAG GACTATTGGGGCCAGGGAACCCTGGTCACCGTCTCTTCA

492	ATX-P-3396	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAACCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCTTCAC CGGCTACTATATGCACTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGGCACAAAC TATGCACAGAAGTTTCAGGGCAGGGTCACCATGACCAGGGACAC GTCCATCAGCACAGCCTACATGGAGCTGAGCAGGCTGAGATCTG ACGACACGGCCGTGTATTACTGTGCGAGAGAACGGGGCGACTAT GATGGCGATGCTTTTGATATCTGGGGACAAGGGACAATGGTCACC GTCTCTTCA
493	ATX-P-3397	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCCAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTTAG TAACTATTACATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGC TGGAGTGGGTGGCCAACATAAAGCAAGATGGAAGTGAGAAATAC TATGTGGACTCTGTGAAGGGCCGCTTCACCATCTCCAGAGACAAC GCCAAGAACTCACTGTATCTCCAAATGAACAGCCTGAGAGCCGA GGACACGGCTGTGTATTACTGTGCGAGAGATGGGTACTACAACTT CGATGCTTTTGATATCTGGGGACAAGGGACAATGGTCACCGTCTC TTCA
494	ATX-P-3405	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGCTATAGCATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGC TGGAGTGGGTCTCATCCATTAGTAGTAGTAGTAGTTACATATACT ACGCAGACTCAGTGAAGGGCCGATTCACCATCTCCAGAGACAAC GCCAAGAACTCACTGTATCTGCAAATGAACAGCCTGAGAGCCGA GGACACGGCCGTGTATTACTGTGCGAGAGAAGGGTATGATAACT GGAACTCTGCTTGTGATATCTGGGGACAAGGGACAATGGTCACC GTCTCTTCA
495	ATX-P-3406	VH nt	CAGATCACCTTGAAGGAGTCTGGTCCTACGCTGGTGAAACCCACA CAGACCCTCACGCTGACCTGCACCTTCTCTGGGTTTTCACTCAGC ACTAGTGGAGTGGGTGTGGGCTGGATCCGTCAGCCCCCAGGAAA GGCCCTGGAGTGGCTTGCACTCATTTATTGGAATGGTGATGAGCG CTACAGCCCATCTCTGAAGAGCAGGCTCACCATCACCAAGGACA CCTCCAAAAACCAAGTGGTCCTTACAATGACCAACATGGACCCTG TGGACACAGCCACATATTACTGTGCACACAGTCCGAACTGGGGAT ATGAAGCTTTTGATATCTGGGGACAAGGGACAATGGTCACCGTCT CTTCA
496	ATX-P-3407	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCCTGGTCCCGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGCTATTGCATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGC TGGAGTGGGTCTCATCCATTAATAGTGATAGTAGTTACATATACT ACGCGGACTCAGTGAAGGGCCGATTCACCATCTCCAGAGACAAC GCCAAGAACTCACTGTATCTGCAAATGAACAGCCTGAGAGCCGA GGACACGGCTGTGTATTACTGTGCGAGAGAGGGATACTACAACT GGAACGGAGGGAATGACTACTGGGGCCAGGGAACCCTGGTCACC GTCTCCTCA
497	ATX-P-3408	VH nt	GAGGTGCAGCTGGTGGAGTCCGGGGGAGGCTTAGTTCAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGCTATTGGATGCACTGGGTCCGCCAAGCTCCAGGGAAGGGGC TGGTGTGGGTCTCACATATTAATAGTGATGGGAGTAGCACAAACT ACGCGGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGACAAC GCCAAGAACACGCTGTATCTGCAGATGAACAGTCTGAGATCCGA GGACACGGCTGTATATTACTGTGCAAGAGAGGGTTACTGGAACG GTGATACTTTTGATATCTGGGGACAAGGGACAATGGTCACCGTCT CTTCA

498	ATX-P-3410	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TGCCTACGACATGCACTGGGTCCGCCAAACTCCAGGAAAAGGTCT GGAGTGGGTCTCAACTATTGGTACTGCTGGTGACACATACTATCC AGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGATTTTGCCAG GAGGTCCTTGTATCTTCACATGAACAATCTGAGAGCCGGGGACAC GGCTGTATATTACTGTGCAAGAGGGGGCAGCAGCAGCTGGTACG ACTGGTACTTCGATCTCTGGGGCCGTGGCACCCTGGTCACTGTCT CCTCA
499	ATX-P-3412	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAGTAGTACCTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGGGAAATCTATCATAGTGGGAGCACCAAC TATAACCCGTCCCTCAAGAGTCGAGTCACCATATCACTAGACAAG TCCAAGAACCAGTTTTCCCTGAAGCTGAGCTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGATTAGTTTATACAACTGGAAC GATGCTGCTTTTGATATCTGGGGACAAGGGACAATGGTCACCGTC TCTTCA
500	ATX-P-3413	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGTCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGACTTCTGGATACACGTTCAC CGGCTACTATATGCACTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGGCACAACC TATGCACAGAAGTTTCAGGGCAGGGTCACCATGACCAGGGACAC GTCCATCAGCACAGCCTACATGGAGCTGAACAGGCTGAGATCTG ACGACACGGCCGTGTATTACTGTGCGAGAGAGGCAGGTGGTTCA GGTGAATACTTCCAGCACTGGGGCCAGGGCACCCCGGTCACCGTC TCTTCA
501	ATX-P-3414	VH nt	CAGATCACCTTGAAGGAGTCTGGTCCTACGCTGGTGAAACCCACA CAGACCCTCACGCTGACCTGCACCTTCTCTGGGTTCTCACTCAGC ACTAGTGGAGTGGGTGTGGGCTGGATCCGTCAGCCCCCAGGAAA GGCCCTGGAGTGGCTTGCACTCATTTATTGGAATGATGTTAAGTT CTACAGTCCATCTCTGCAGAGCAGGCTCACCATCACCAAGGACAC CTCCAAAAACCAGGTGGTCCTTACACTGACCAACATGGACCCTGT GGACACAGCCACATATTACTGTGCACACGGGGATAACTGGAACT ACCGTGCTTTTGATATCTGGGGACAAGGGACAATGGTCACCGTCT CTTCA
502	ATX-P-3419	VH nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACACCTTTAC CAGCTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAGCGCTTATAATGGTAACACACACT ATGCACAGAACCTCCAGGGCAGAGTCACCATGACCACAGACACA TCCACGAGCACAGCCTACATGGAGCTGAGGAGCCTGAGATCTGA CGACACGGCCGTGTATTACTGTGCGAGGAGTATAGCAGCCCTTGA CTTCTGGGGCCAGGGAACCCCGGTCACCGTCTCCTCA
503	ATX-P-3421	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GACTGGAGTGGATTGGACAAATCTATCATAGTGAAAACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAG TCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCG GACACGGCCATCTATTACTGTGCGAGAGTGGATGACTGGAACTAC GGGGGTCACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTC TCCTCA

504	ATX-P-3428	VH nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCTGG GGCCTCAGTTAAGGTCTCCTGCAAGGCTTCTGGTTACACCTTTAC CGGCTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAGCGCTTACAATGGTAACACACACT ATGCACAGAACCTCCAGGGCAGAGTCACCATGACCACCGACACA TCCACGAACACAGCCTACATGGAGCTGAGGAGCCTTATATCTGAC GACACGGCCTTTTATTATTGTGCGAGAGCGGGACTGGGGATCGAC TACTGGGGCCAGGGAACCCTGGTCACTGTCTCCTCA
505	ATX-P-3430	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAGTAGTGACTGGTGGAGTTGGGTCCGCCAGTCCCCAGGGAAGG GGCTGGAGTGGATTGGGGAAATCTATCATAGTGGGAGCACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCTCCATATCAGTAGACAAG TCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGGGGGCACATAGGCTA CTACTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTC CTCA
506	ATX-P-3431	VH nt	GAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCCGG GGAGTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACAGCTTTAC CAACTACTGGATCGGCTGGGTGCGCCAGATGCCCGGGAAAGGCC TGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGATACCATAT ACAGCCCGTCCTTCCAAGGCCAGGTCACCTTCTCAGCCGACAAGT CCATCAACACCGCCTACCTGCAGTGGAGCAGCCTGAAGGCCTCG GACACCGCCATGTATTACTGTGCGAGAGGACGTGGATATAGTGG CTACGAAGGTGCTTTTGATATCTGGGGACAAGGGACAATGGTCAC CGTCTCTTCA
507	ATX-P-3435	VH nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACACCTTTAC CAACTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAGCGCTTACAATGGTAACACACACT ATGCACAGAAACTCCAGGGCAGAGTCACCATGACCACAGACACA TCCACGAGCACAGCCTACATGGAGCTGAGGAGCCTGAGATCAGA CGACACGGCCGTGTATTACTGTGCGAGAGCGGCAGCAGCCGTTG ACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCTTCA
508	ATX-P-3436	VH nt	CAGGTGCAGCTGCAGGAGTCGGGTCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCAGTTGCACTGTCTCTGGTGGCTCCGTCAG CAGTGGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGA AGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGGAGCACC AAGTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGAC ACGTCCAAGAACCAGGTCTCCCTGAAGCTGAGTTCTGTGACCGCT GCGGACACGGCCGTGTATTACTGTGCGAGAGATAAGGGGCACTG GAACTACGGTGCTTTTGATATCTGGGGACAAGGGACAATGGTCAC CGTCTCTTCA
509	ATX-P-3437	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGGGAAATCTATCATAGTGGAAATATTAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTGGACAAGT CCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCGG ACACGGCCGTGTATTACTGTGCGAGAGGGGGGGAATACGGTGAC CCCGTGGGGTACTTCGATCTCTGGGGCCGTGGCACCCTGGTCACT GTCTCCTCA
510	ATX-P-3440	VH nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACACCTTTAC

			CACCTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAGCGCTTACAGTGGTAACACAAAC TATGCACAGAAGCTCCAGGGCAGAGTCACCATGACCACAGACAC ATCCACGAGCACAGCCTACATGGAGCTGAGGAGCCTGAGATCTG ACGACACGGCCGTGTATTACTGTGCGAGAGAGAGAGTCTCCAAC TGGGTCTTTGACTTCTGGGGCCAGGGAACCCTGGTCACTGTCTCC TCA
511	ATX-P-3442	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGTTCCATCAG CAGTAGTGACTGGTGGAGCTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGGGAAATCTATCATAGTAGGAACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAG TCCAAGAACCAGTTCTCCCTGAAGCTGAGTTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGTGGAGGTGTGGTGGCCGA CTACTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTC CTCA
512	ATX-P-3444	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCCTGGTCAAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGCTATGGCATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGC TGGAGTGGGTCTCATCCATTAGTGGTTATGGTAGTTACATATACT ACGCAGCCTCAGTGAAGGGCCGATTCACCATCTCCAGAGACAGC GCCAAGAACTCACTGTATCTGCAAATGAACAGCCTGAGCGCCGA GGACACAGCTGTGTATTACTGTGCGAGAGAATTAGGTGGGATCTA CTACGGGGTAGGGTACTTCGATCTCTGGGGCCGTGGCACCCTGGT CACTGTCTCCTCA
513	ATX-P-3447	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCGTCAG CAGTGGTAATTACTATTGGAGCTGGATCCGGCAGCCCCCAGGGA AGGGACTGGAGTGGATTGGGTATATCTATTCCAGTGGGAGCACC AACTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAATAGAC ACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCT GCGGACACGGCCGTGTATTACTGTGCGAGAAGTCCTCGTGGATAC AGCTATGGTCCCTTTGCCTACTGGGGCCAGGGGACCCTGGTCACC GTCTCTTCA
514	ATX-P-3448	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC ACAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCAG CAGTGGTGGTTACAACTGGAACTGGATCCGCCAGCACCCAGGGA AGGGCCTGGAATGGATTGGGTACATCAATTACAGTGGGAATACC TATTACAACCCGTCCCTCAAGAGTCGAGTTACCATATCAGTAGAC ACGTCTAAGAACCAGTTCTCCCTGAAGCTGAGTTCTGTGACTGCC GCGGACACGGCCGTTTATTACTGTGCGAGAGGGCCCCTGGATACA GCTATGGCCCCCTTTGACTACTGGGGCCAGGGAACCCTGGTCACC GTCTCCTCA
515	ATX-P-3449	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGTACTGTCTCTGGTGACTCCATCAG TAGTTACTACTGGAGTTGGATCCGGCAGCCCCCAGGGAAGGGAC TGGAGTGGATTGGATATATCTATTATAGTGGGTTCACCAAGTACA ACCCCTCCCTCAAGAGTCGAGTCACCATTTCAGTAGACACGTCCA AGAACCAGTTCTCCCTGAGGCTGAGCTCTGTGACCGCTGCGGACA CGGCCGTGTATTACTGTGCGAGCGTCGATTCAAAGTGGAACTACG GGTCTTTTCATATCTGGGGACAAGGGACAATGGTCACCGTCTCTT CA
516	ATX-P-3450	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGGCTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCTCTGTCTCTGGTGACTCCGTCAG

			CAATAATCGTTATTATTGGAGCTGGATTCGGCAGCCCCCAGGGAA GGGACTGGAGTGGATTGGGTATATCTATTACAGTGGGAGCACCA ACTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACA CGTCCAAGAACCAGTTGTCCCTGAACCTGAGTTCTGTGACCGCTG CGGACACGGCCGTGTATTACTGTGCGAGAGATCGCCCATCCCGGT ATAAGTGGAATTACGATGCTTTTGCTATCTGGGGACAAGGGACAA TGGTCACCGTCTCTTCA
517	ATX-P-3451	VH nt	CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGGGTCCTTCAG TGATTACTACTGGACCTGGATCCGCCAGCCCCCAGGGAAGGGGCT GGAGTGGATTGGTGAAGTCAATCATATTGGAAGCACCAACTACA ACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCA AGAACCAGTTCTCCCTGAACCTGAGCTCTGTGACCGCCGCGGACA CGGCTGTGTATTACTGTGCGAAGTATAGCACTTCCTGGTACGGCT GGTTCGACCCCTGGGGCCAGGGAACCCTGGTCACTGTCTCCTCA
518	ATX-P-3453	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGGCTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCATCAG CAGTAATAACTGGTGGAGTTGGTTCCGCCAGCCCCCAGGGAAGG GACTGGAGTGGATTGGGAGAATCTATCATAGTGGGACCACCAAC TACAACCCGTCCCTCGAGAGTCGAGTCACCATATCAGTAGACAAC TCCAGGAACCAGTTCTCCCTGAAACTGAGCTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGCGAGGAGTGGGAGCT GCGGGGAGGTGTTTTTGATATCTGGGGACAAGGGACAATGGTCA CCGTCTCTTCA
519	ATX-P-3454	VH nt	CAGGTGCAGCTGGTGCAATCTGGGCCTGAGTTGAAGAAGCCTGG GGCCTCAGTAAAGGTTTCCTGCAAGGCTTCTGGATACACCTTCAC TAACTATGCTGTGAATTGGGTGCGACAGGCCCCTGGACAAGGGCT TGAGTGGATGGGATGGATCAACACCAACACTGGGCACCCAACGT ATGCCCAGGGCTTCACAGGACGGTTTGTCTTCTCCTTGGACACCT CTGTCAGTACGGCATATCTGCAGATCAGCAGCCTAAAGGCTGAG GACACTGCCGTTTATTACTGTGCGAGAGACAGCAGCAGCTGGGG CTACTGGGGCCAGGGAACCCTGGTCACTGTCTCCTCA
520	ATX-P-3455	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGACGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCATCAG TAGTGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GACTGGAGTGGATTGGGGAAATCTATCACAGTGAAAACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAG TCCAAGAACCAGTTCTCCCTGAGGCTGAACTCTGTGACCGCCGCG GACACGGCCATGTATTACTGTGCGAGAGGGAGGGAGCTAACTGG CCTCTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTC A
521	ATX-P-3456	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG CAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGAAAGG GACTGGAATGGATTGGGGACATCTATCATAGTGGAAACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCCTATCAGTAGACATG TCCAAGAACCAGTTCTCCCTGAAACTGAACTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGAGGTATAGCAGTGAC TGCCTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTC CTCA
522	ATX-P-3458	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCTTCAC CGGCTACTATTTGCACTGGGTGCGACAGGCCCCTGGACAAGGGCT TGAGTGGATGGGATGGATCAACCCTCACAGTGGTGGCACAATCT

			ATGCACAGAAGTTTCAGGACAGGGTCACCATGACCAGGGACACG TCCATCAGCACAGCCTACATGGAGCTGAGCAGGCTGAGATCTGA CGACACGGCCGTGTATTACTGTGCGAACTGGAACTCCGGGGACTC CTACTACTACTACATGGACGTCTGGGGCAAAGGGACCACGGTCA CCGTCTCCTCA
523	ATX-P-3459	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGTTCCATCAG CAGTGATAACTGGTGGAATTGGGTCCGCCAGCCCCCAGGGAAGG GGCTGGAGTGGATTGGAAAAATCTATCATAGTGGGAACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACGAG TCCAAGAACCAGTTCTCCCTGAGGCTGTACTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGGGTCGATTTTTGGAGT GGTTCCCACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGT CTCCTCA
524	ATX-P-3462	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATTAG CAGTAATAATTGGTGGAGTTGGGTCCGCCAGGCCCCAGGGAAGG GGCTGGAGTGGATTGGGAAGATCTATCAAAGTGGGAGCACCATG TACAACCCGTCCCTCAAGAGTCGAGTCACCATGTCGGTAGACAAG TCCAAGAACCAGTTCTCCCTGATTCTGAGTTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGATAAACCCCCTTTACTG GGAGCCTTTGACTACTGGGGCCAGGGAACCCTGGTCACTGTCTCC TCA
525	ATX-P-3463	VH nt	CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGG GAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGCTATGCCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCT GGAGTGGGTGGCAGTTATATCATATGATGGAAGTAATAAATACT ATGCGGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGACAATT CCAAGAACACGCTGTCTCTGCAAATGAACAGCCTGAGAGCTGAG GACACGGCTGTGTATTACTGTGCGAAAAGGGGGGGATACAGCTA TGGTCCTTTTGAACACTGGGGCCAGGGAACCCTGGTCACCGTCTC CTCA
526	ATX-P-3466	VH nt	CAGGTGCAGCTGGTGCAATCTGGGTCTGAATTGAAGAAGCCTGG GGCCTCAGTGAAGGTTTCCTGCAAGGCTTCTGGATACACCTTCAC TAGCTATACTATGAATTGGGTGCGACAGGCCCCTGGACAAGGGCT TGAGTGGGTGGGATGGATCAACACCGCCACTGGGACCCCAACGT ATGCCCAGGGCTTCACAGGACGGTATGTCTTCTCCTTGGACACCT CTGTCAGCACGGCTTATCTGCAGATCAGCGGCCTAAAGGCTGAGG ACACTGCCGTGTATTTCTGTGCGAGGTATAGTGGGAGCCACTCCT TTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCTTCA
527	ATX-P-3467	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG TAGTGATTACTGGTGGAGTTGGGTCCGCCAGTCCCCAGGGAAGG GGCTGGAGTGGATTGGGAAAATCTATCATAGTGGGAACACCAAC CACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAATAGACAA GTCCAGGAACCAGTTCTCCCTGAATCTGAACTCTGTGACCGCCGC GGACACGGCCGTGTATTACTGTGCGAGAGAAGGACTGGAACTTC CCCACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCT CA
528	ATX-P-3468	VH nt	CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCCAGCCTGG GAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TAGTTATGCTATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCT GGAGTGGGTGACAGTTATATCATATGATGGAAGTAATAAATACT ATGCAGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGACAATT

			CCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCTGAG GACACGGCTGTGTATTACTGTGCGAAAAGGGGTAACTGGAACTA CGGACCTTTTCACTACTGGGGCCAGGGAACCCTGGTCACTGTCTC CTCA
529	ATX-P-3469	VH nt	CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGG GAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAG TGCCTATGCCATCCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCT GGAGTGGGTGGCAGTTATATCATATGATGGAAGTAATAAAAAGT ATGCAGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGACAATT CCAAGAACACGCTGGATCTGGAAATGAACAGCCTGAGAGCTGAG GACACGGCTGTGTACTACTGTGCGAAAGGGCTACCTTTTGACTAC TGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
530	ATX-P-3470	VH nt	CAGGTGCAGCTGGTGCAATCTGGGTCTGACTTGAAGAAGCCTGG GGCCTCAGTGAAGGTTTCCTGCAAGGCTTCTGGATACACCTTCAC TAGTTATACTATGAATTGGGTGCGACAGGCCCCTGGACAAGGGCT TGAGTGGATGGGATGGATCAACACCAACACTGGGACCCCAACGT ATGCCCAGGGCTTCACAGGACGGTTTGTCTTCTCCTTGGACACCT CTGTCAGCACGGCATATCTGCAGATCAGCAGCCTAAAGGCTGAG GACACTGCCGTGTATTACTGTACGAGGTATACTGGGAACTACTCC TTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
531	ATX-P-3471	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGTCTTGGTACAGCCTGG GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTTAG GAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGC TGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGATAGCACATACT TCGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATT CCAAGAACACGCTGTCTCTGCAAATGAACAGCCTGAGAGCCGAG GACACGGCCGTATATTACTGTGCGAGCATCCTAGGATATTGTAGT GGTACCAGCTGCTATGGCCTCTTTGACAACTGGGGCCAGGGAACC CTGGTCACCGTCTCCTCA
532	ATX-P-3472	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCATCAG TAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGGAAGG GGCTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTCACCAACT ACAACCCGTCCCTCAGGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGGAGCTGACCTCTGTGACCGCCGCGG ACACGGCCGTGTATTACTGTGCGAGAGAGTATCAGAACTACATG GACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCTCA
533	ATX-P-3361	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGTTGTCTCTGGTGACTCCATCAG CAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GTCTGGAGTGGATTGGACAAATCTATCATAGTGGAATCACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTCTCCCTGGAGCTGACCTCTGTGACCGCCGCGG ACGCGGCCGTGTATTACTGTGCGAGGGCCCAGTGGGAACTACGA GCGGGCTGGTTCGACCCCTGGGGCCAGGGAACCCTGGTCACCGTC TCCTCA
534	ATX-P-3366	VH nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTAAAGCCTGG GGGGACCCTTACACTCTCCTGTGCAGCCTCTGGATTCACTTTCAGT AACGCCTGGATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCT GGAGTGGGTTGGCCGTATTAAAAGCAAAACTGATGGCGGGACAA CAGACTACGCTGCACCCGTGAAAGGCAGATTCACCATCTCAAGA GATGATTCAAAAAACACGCTGTATCTGCAAATGAACAGCCTGAA AACCGAGGACACAGCCGTGTATTACTGTACCCCCCGGTACAACTC

			GGACTTTGACTACTGGGGCCAAGGAACCCTGGTCACCGTCTCTTCA
535	ATX-P-3376	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCAGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGAAGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGGTTCACCAAGTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGACCCACCCTCGTGGATACAACTATGGTCCCTTTGACTACTGGGGCCAGGGAACCCTGGTCACTGTCTCCTCA
536	ATX-P-3377	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCGTCAACAGTGGTCGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGAAGGGACTGGAGTGGATTGGGTATATCTATTCCAGTGGGTACACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATGTTACTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAACTCCGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGGTCACGTGGATACCGCTATGGTCCCTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
537	ATX-P-3418	VH nt	CAGGTGCAGCTGGTGCAATCTGGGTCTGAGTTGAAGAAGCCTGGGGCCTCAGTGAAGGTTTCCTGCGAGGCTTCTGGATACACCTTCACTAGCTATGCTATGAATTGGGTGCGACAGGCCCCTGGACAAGGGCTTGAGTGGATGGGATGGATCAACACCAACACTGGGACCCCAACTTATGCCCAGGGCTTCACAGGACGGTTTGTCTTCTCCTTGGACACCTCTGTCAGCACGGCATATCTGCAGATCAGCAGCCTAAAGGCTGAGGACACTGCCGTGTATTACTGTGCGAGTCATAGCACCTCGTTTGACTACTGGGGCCAGGGGACCCTGGTCACCGTCTCCTCA
538	ATX-P-3420	VH nt	CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCCATGGTGGGTCCTTCAGTGATTACTACTTGACCTGGATTCGCCAGCCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATCAATCATAGTGGAAGCACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCTTATCAATAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAGAGGTAGTGAAGACTACTACTATTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCTCA
539	ATX-P-3426	VH nt	GAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCCGGGGAGTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACATCTTTACCAGCTACTGGATCGGCTGGGTGCGCCAGATGCCCGGGAAAGGCCTGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGATACCAGATACAGCCCGTCTTTCCAAGGCCAGGTCACCATCTCAGCCGACAAGTCCATCATCACCGCCTACCTGCAGTGGAGCAGCCTGAAGGCCTCGGACACCGCCATGTATTACTGTGCGAGACACGACTACTTTGATATTGGAGGTTATTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
540	ATX-P-3432	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGGCCTCAGTGAAGGTCTCCTGCAAGGCTGATGGATACACCTTCACCGACTACTATATGCACTGGGTGCGACAGGCCCCTGGACAAGGGCATGAGTGGATGGGATGGATCAACCCTAACAGTGGTGTCACATACTATGCACAGAAGTTTCAGGGCAGGGTCACCATGACCAGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAACAGACTTAGATCTGACGACACGGCCGTGTATTACTGTGCGAGAGATCGGACCTTCTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACTGTCTCCTCA

541	ATX-P-3433	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCTTCAC CGACTACTATATGCACTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAACCCTAACAATGGTGGCACAGAC TATGCACAGAAGTTTCAGGGCAGGGTCACCATGACCAGGGACAC GTCCATCAGCACAGCCTACATGGAGTTACACAGGCTAAGATCTGA CGACACGGCCGTGTATTTCTGTGCGAGAGGGGTCTATGATGTAGT AGTTCCAACTGCTATCGTCAACTGGTTCGACCCCTGGGGCCAGGG AACCCTGGTCACCGTCTCCTCA
542	ATX-P-3438	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCATCAG CAATGATTACTGGTGGAATTGGGTCCGCCAGCCCCCAGGGAAGG GTCTGGAGTGGATTGGAGAAATCTATCATAGTGGGCACACCAACT ACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGT CCAAGAACCAGTTGTCCCTGAAGCTGACCTCTGTGAACGCCGCGG ACACGGCCGTGTATTACTGTGCGAGAGGTGGAACTGAAATTACG GGGTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTC CTCA
543	ATX-P-3441	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGCCTCCATCAG AAGTGGTCACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGAAGG GACTGGAGTGGATTGGGGAAATCTATCATAGTGGGAACACCAAC TACAACCCGTCCCTCAAGAGTCGAGTCACCCTATCAGTAGACAAG TCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCG GACACGGCCGTGTATTACTGTGCGAGAGGTCACTACGGTGACTAC GTCGTCTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACTGTC TCCTCA
544	ATX-P-3446	VH nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTC GGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCAG TAGTTACTATTGGAGCTGGATCCGGCAGCCCCCAGGGAAGGGAC TGGAATGGATTGGTTATGTCTATTACAGTGGGTACACCAAGTACA ATCCCTCCCTCAAGAGTCGAGTCACCATATCAATAGACGCGTCCA AGAACCAGTTCTCCCTGAAGCTGACCTCTGTGACCGCTGCGGACA CGGCCGTGTATTACTGTGCGACCGTCGAATCAAAGTGGAACTACG GGCCTTTTGCTATCTGGGGACAAGGGACAATGGTCACCGTCTCTT CA
545	ATX-P-3452	VH nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGG GGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCTTCAC CGGCTACTATATGAACTGGGTGCGACAGGCCCCTGGACAAGGGC TTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGCCACAAAC TATGCACAGAAGTTTCAGGGCAGGGTCACCATGACCAGGGACAC GTCCATCAGCACAGACTACATGGAACTGAGCAGGCTGAGATCTG ACGACACGGCCGTTTATTACTGTGCGAGAGATGGGGCTAAGTGG AATCACGAGGGTTACTACTTTGACTACTGGGGCCAGGGAACCCTG GTCACCGTCTCCTCA
546	ATX-P-3360	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISINNWWSWVRQPPGKGL EWLGKIYHSGNTDYNPSLKSRVTISVDKSKNQFSLRLSSVTAADTAV YYCASGSDYDFWSGYLDYWGQGTLVTVSS
547	ATX-P-3362	VH aa	EVQLVESGGGLVQPGRSLRLSCAASGFTFDDYAMHWVRQAPGKGL EWVSGISWNSGSIAYADSVKGRFTISRDNAKNSLYLQMNSLRVEDT AFFYCARVAAAAGIPFFDYWGQGTLVTVSS
548	ATX-P-3363	VH aa	QVQLQESGPGLVKPSGTLTLTCAVSGGSINRDNWWSWVRQPPGKGL EWIGQIYQSGSTNYNPSLKSRVTISVDKSKNQFSLKLSSVTAADTAV YYCARVYDWNYGGHFDYWGQGTLVTVSS

549	ATX-P-3365	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISSNNWWSWVRQPPGKGL EWIGQIYHSGHTNYNPSLKSRVTISVDMSKNQFSLKLTSVTAADTAV YYCARGATEILGYFDLWGRGTLVTVSS
550	ATX-P-3367	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGGSVSSGSYYWSWIRQPPGKGL EWIGYIYKSGFTNYNPSLKSRVTISVDTSKNQFSLKLSSVTAADTAVY YCAIGGRGYSYGPFDYWGQGTLVTVSS
551	ATX-P-3369	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYLHWVRQAPGQGL EWMGWINPNSGDTNYVQNFQGRVTMTRDTSISTAYMELSRLRSDD TAVYYCARSYVDTSSSAFDIWGQGTMVTVSS
552	ATX-P-3370	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPPGKGLEWI GYVYYSGYTKYNPSLKSRVTISVDTPKTQFSLKMSSVTAADTAVYY CASVESKWNYGPFDIWGQGTMVTVSS
553	ATX-P-3371	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGDSISSYYWSWIRQPPGKGLEWI GYIYYSGFTKYNPSLNSRVTISVDTSKSQFSLKLTSVTAADTAVYYC AMREPRGRYNWNYGPFDIWGQGTMVTVSS
554	ATX-P-3373	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQPPGKGL EWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELNSVTAADTAV YYCAREYHNFMDVWCKGTTVTVSS
555	ATX-P-3375	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGDSVSSGKYFWSWIRQSPGKGL EWIGYIYYSGSTNYNPSLKNRVTISVDTSKKELSLKLSSVTAADTAV YYCARGGHNWNYAAFDIWGQGTMVTVSS
556	ATX-P-3378	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGKGL EWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELSSVAAADTAVY YCAREYENFMDVWGKGTTVTVSS
557	ATX-P-3382	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISSNSWWNWVRQPPGKGL EWIGQIFHSGHTNYNPSLKSRVTMSIDKSKNQFSLKLTSVTAADTAL YYCARGGEYENSANWFDPWGQGTLVTVSS
558	ATX-P-3383	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGVSINKDNWWTWVRQPPGKG LEWIGKIYHSGSTNYNPSLKSRVTISVDNSKNQFSLKLNSVTAADTA VYYCTRGGDIAMEGDWFAPWGQGTLVTVSS
559	ATX-P-3384	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSDNWWNWVRQPPGKGL EWLGKIYHSGNTDYNPSLKSRVTISVDKSKNQFSLRLSSVTAADTAV YYCARGGTETTGYMDVWGKGTTVTVSS
560	ATX-P-3386	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQPPGKGL EWIGKIYHSGFTNYNPSLKSRVTISVDKSKNQFSLKLNSVTAADTAV YYCARGGDNFMEGEGLGTWGPGTLVTVSS
561	ATX-P-3387	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWNWVRQSPGKGL EWIGKIYHSGFTDYNPSLKSRVTISVDKSKNQFSLKLSSVTAADTAV YYCARGNHNYLWIGYLGTWGPGTLVTVSS
562	ATX-P-3389	VH aa	QVQLQESGPGLVKPSGTLSLICAVSGGSISSSNWWSWVRQPPGKGLE WIGRIYHSGHTNYNPSLKSRVTISVDKSKNQFSLKLTSVTAADTAVY YCARGRDLTGYFDYWGQGTLVTVSS
563	ATX-P-3391	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGKGL EWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELSSVTAADTAVY YCARGVDFWSGSHMDVWGKGTTVTVSS
564	ATX-P-3392	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGKGL EWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELSSVTAADTAVY FCAREGLELPHMDVWGKGTTVTVSS
565	ATX-P-3395	VH aa	EVQLVESGGGVVKPGGSLRLSCAASGFTFSSYWMHWVRQAPGKGL VWVSRINSDGSSTSYADSVQGRFTISRDIAKNTLYLQMNSLRAEDTA VYYCARGQHLVQDYWGQGTLVTVSS
566	ATX-P-3396	VH aa	QVQLVQSGAEVKNPGASVKVSCKASGYTFTGYYMHWVRQAPGQG LEWMGWINPNSGGTNYAQKFQGRVTMTRDTSISTAYMELSRLRSD DTAVYYCARERGDYDGDAFDIWGQGTMVTVSS

567	ATX-P-3397	VH aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSNYYMNWVRQAPGKGL EWVANIKQDGSEKYYVDSVKGRFTISRDNAKNSLYLQMNSLRAEDT AVYYCARDGYYNFDAFDIWGQGTMVTVSS
568	ATX-P-3405	VH aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYSMNWVRQAPGKGLE WVSSISSSSSYIYYADSVKGRFTISRDNAKNSLYLQMNSLRAEDTAV YYCAREGYDNWNSACDIWGQGTMVTVSS
569	ATX-P-3406	VH aa	QITLKESGPTLVKPTQTLTLTCTFSGFSLSTSGVGVGWIRQPPGKALE WLALIYWNGDERYSPSLKSRLTITKDTSKNQVVLTMTNMDPVDTAT YYCAHSPNWGYEAFDIWGQGTMVTVSS
570	ATX-P-3407	VH aa	EVQLVESGGGLVPPGGSLRLSCAASGFTFSSYCMNWVRQAPGKGLE WVSSINSDSSYIYYADSVKGRFTISRDNAKNSLYLQMNSLRAEDTAV YYCAREGYYNWNGGNDYWGQGTLVTVSS
571	ATX-P-3408	VH aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYWMHWVRQAPGKGL VWVSHINSDGSSTNYADSVKGRFTISRDNAKNTLYLQMNSLRSEDT AVYYCAREGYWNGDTFDIWGQGTMVTVSS
572	ATX-P-3410	VH aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSAYDMHWVRQTPGKGLE WVSTIGTAGDTYYPDSVKGRFTISRDFARRSLYLHMNNLRAGDTAV YYCARGGSSSWYDWYFDLWGRGTLVTVSS
573	ATX-P-3412	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSSTWWSWVRQPPGKGLE WIGEIYHSGSTNYNPSLKSRVTISLDKSKNQFSLKLSSVTAADTAVYY CAISLYNWNDAAFDIWGQGTMVTVSS
574	ATX-P-3413	VH aa	QVQLVQSGSEVKKPGASVKVSCKTSGYTFTGYYMHWVRQAPGQGL EWMGWINPNSGGTTYAQKFQGRVTMTRDTSISTAYMELNRLRSDD TAVYYCAREAGGSGEYFQHWGQGTPVTVSS
575	ATX-P-3414	VH aa	QITLKESGPTLVKPTQTLTLTCTFSGFSLSTSGVGVGWIRQPPGKALE WLALIYWNDVKFYSPSLQSRLTITKDTSKNQVVLTLTNMDPVDTAT YYCAHGDNWNYRAFDIWGQGTMVTVSS
576	ATX-P-3419	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQAPGQGLE WMGWISAYNGNTHYAQNLQGRVTMTTDTSTSTAYMELRSLRSDDT AVYYCARSIAALDFWGQGTPVTVSS
577	ATX-P-3421	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQPPGKGL EWIGQIYHSENTNYNPSLKSRVTISVDKSKNQFSLKLSSVTAADTAIY YCARVDDWNYGGHFDYWGQGTLVTVSS
578	ATX-P-3428	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYGISWVRQAPGQGL EWMGWISAYNGNTHYAQNLQGRVTMTTDTSTNTAYMELRSLISDD TAFYYCARAGLGIDYWGQGTLVTVSS
579	ATX-P-3430	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSSDWWSWVRQSPGKGL EWIGEIYHSGSTNYNPSLKSRVSISVDKSKNQFSLKLSSVTAADTAVY YCARGGHIGYYYMDVWGKGTTVTVSS
580	ATX-P-3431	VH aa	EVQLVQSGAEVKKPGESLKISCKGSGYSFTNYWIGWVRQMPGKGLE WMGIIYPGDSDTIYSPSFQGQVTFSADKSINTAYLQWSSLKASDTAM YYCARGRGYSGYEGAFDIWGQGTMVTVSS
581	ATX-P-3435	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTNYGISWVRQAPGQGL EWMGWISAYNGNTHYAQKLQGRVTMTTDTSTSTAYMELRSLRSDD TAVYYCARAAAAVDYWGQGTLVTVSS
582	ATX-P-3436	VH aa	QVQLQESGPGLVKPSETLSLSCTVSGGSVSSGSYYWSWIRQPPGKGL EWIGYIYYSGSTKYNPSLKSRVTISVDTSKNQVSLKLSSVTAADTAV YYCARDKGHWNYGAFDIWGQGTMVTVSS
583	ATX-P-3437	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQPPGKGL EWIGEIYHSGNINYNPSLKSRVTISVDKSKNQFSLKLSSVTAADTAVY YCARGGEYGDPVGYFDLWGRGTLVTVSS
584	ATX-P-3440	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQAPGQGLE WMGWISAYSGNTNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDT AVYYCARERVSNWVFDFWGQGTLVTVSS

585	ATX-P-3442	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSSDWWSWVRQPPGKGL EWIGEIYHSRNTNYNPSLKSRVTISVDKSKNQFSLKLSSVTAADTAV YYCASGGVVADYYMDVWGKGTTVTVSS
586	ATX-P-3444	VH aa	EVQLVESGGGLVKPGGSLRLSCAASGFTFSSYGMNWVRQAPGKGLE WVSSISGYGSYIYYAASVKGRFTISRDSAKNSLYLQMNSLSAEDTAV YYCARELGGIYYGVGYFDLWGRGTLVTVSS
587	ATX-P-3447	VH aa	QVQLQESGPGLVKPSETLSLTCAVSGGSVSSGNYYWSWIRQPPGKG LEWIGYIYSSGSTNYNPSLKSRVTISIDTSKNQFSLKLSSVTAADTAV YYCARSPRGYSYGPFAYWGQGTLVTVSS
588	ATX-P-3448	VH aa	QVQLQESGPGLVKPSQTLSLTCTVSGGSISSGGYNWNWIRQHPGKGL EWIGYINYSGNTYYNPSLKSRVTISVDTSKNQFSLKLSSVTAADTAV YYCARGPLDTAMAPFDYWGQGTLVTVSS
589	ATX-P-3449	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGDSISSYYWSWIRQPPGKGLEWI GYIYYSGFTKYNPSLKSRVTISVDTSKNQFSLRLSSVTAADTAVYYC ASVDSKWNYGSFHIWGQGTMVTVSS
590	ATX-P-3450	VH aa	QVQLQESGPGLVKPSETLSLTCSVSGDSVSNNRYYWSWIRQPPGKGL EWIGYIYYSGSTNYNPSLKSRVTISVDTSKNQLSLNLSSVTAADTAV YYCARDRPSRYKWNYDAFAIWGQGTMVTVSS
591	ATX-P-3451	VH aa	QVQLQQWGAGLLKPSETLSLTCAVYGGSFSDYYWTWIRQPPGKGLE WIGEVNHIGSTNYNPSLKSRVTISVDTSKNQFSLNLSSVTAADTAVY YCAKYSTSWYGWFDPWGQGTLVTVSS
592	ATX-P-3453	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISSNNWWSWFRQPPGKGL EWIGRIYHSGTTNYNPSLESRVTISVDNSRNQFSLKLSSVTAADTAVY YCARGEEWELRGGVFDIWGQGTMVTVSS
593	ATX-P-3454	VH aa	QVQLVQSGPELKKPGASVKVSCKASGYTFTNYAVNWVRQAPGQGL EWMGWINTNTGHPTYAQGFTGRFVFSLDTSVSTAYLQISSLKAEDT AVYYCARDSSSWGYWGQGTLVTVSS
594	ATX-P-3455	VH aa	QVQLQESGPGLVTPSGTLSLTCAVSGDSISSDNWWSWVRQPPGKGL EWIGEIYHSENTNYNPSLKSRVTISVDKSKNQFSLRLNSVTAADTAM YYCARGRELTGLFDYWGQGTLVTVSS
595	ATX-P-3456	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQPPGKGL EWIGDIYHSGNTNYNPSLKSRVTLSVDMSKNQFSLKLNSVTAADTA VYYCARGGIAVTAYFDYWGQGTLVTVSS
596	ATX-P-3458	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYLHWVRQAPGQGL EWMGWINPHSGGTIYAQKFQDRVTMTRDTSISTAYMELSRLRSDDT AVYYCANWNSGDSYYYYMDVWGKGTTVTVSS
597	ATX-P-3459	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSDNWWNWVRQPPGKGL EWIGKIYHSGNTNYNPSLKSRVTISVDESKNQFSLRLYSVTAADTAV YYCARGVDFWSGSHMDVWGKGTTVTVSS
598	ATX-P-3462	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQAPGKGL EWIGKIYQSGSTMYNPSLKSRVTMSVDKSKNQFSLILSSVTAADTAV YYCARDKPPLLGAFDYWGQGTLVTVSS
599	ATX-P-3463	VH aa	QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYAMHWVRQAPGKGL EWVAVISYDGSNKYYADSVKGRFTISRDNSKNTLSLQMNSLRAEDT AVYYCAKRGGYSYGPFEHWGQGTLVTVSS
600	ATX-P-3466	VH aa	QVQLVQSGSELKKPGASVKVSCKASGYTFTSYTMNWVRQAPGQGL EWVGWINTATGTPTYAQGFTGRYVFSLDTSVSTAYLQISGLKAEDT AVYFCARYSGSHSFDYWGQGTLVTVSS
601	ATX-P-3467	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSDYWWSWVRQSPGKGL EWIGKIYHSGNTNHNPSLKSRVTISIDKSRNQFSLNLNSVTAADTAVY YCAREGLELPHMDVWGKGTTVTVSS
602	ATX-P-3468	VH aa	QVQLVESGGGLVQPGRSLRLSCAASGFTFSSYAMHWVRQAPGKGLE WVTVISYDGSNKYYADSVKGRFTISRDNSKNTLYLQMNSLRAEDTA VYYCAKRGNWNYGPFHYWGQGTLVTVSS

603	ATX-P-3469	VH aa	QVQLVESGGGVVQPGRSLRLSCAASGFTFSAYAIHWVRQAPGKGLE WVAVISYDGSNKKYADSVKGRFTISRDNSKNTLDLEMNSLRAEDTA VYYCAKGLPFDYWGQGTLVTVSS
604	ATX-P-3470	VH aa	QVQLVQSGSDLKKPGASVKVSCKASGYTFTSYTMNWVRQAPGQGL EWMGWINTNTGTPTYAQGFTGRFVFSLDTSVSTAYLQISSLKAEDTA VYYCTRYTGNYSFDYWGQGTLVTVSS
605	ATX-P-3471	VH aa	EVQLVESGGVLVQPGGSLRLSCAASGFTFRSYAMSWVRQAPGKGLE WVSAISGSGDSTYFADSVKGRFTISRDNSKNTLSLQMNSLRAEDTAV YYCASILGYCSGTSCYGLFDNWGQGTLVTVSS
606	ATX-P-3472	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGKGL EWIGKIYHSEFTNYNPSLRSRVTISVDKSKNQFSLELTSVTAADTAVY YCAREYQNYMDVWGKGTTVTVSS
607	ATX-P-3461	VH aa	QVQLQESGPGLVKPSGTLSLTCVVSGDSISSNNWWSWVRQPPGKGL EWIGQIYHSGITNYNPSLKSRVTISVDKSKNQFSLELTSVTAADAAVY YCARAQWELRAGWFDPWGQGTLVTVSS
608	ATX-P-3466	VH aa	EVQLVESGGGLVKPGGTLTLSCAASGFTFSNAWMSWVRQAPGKGL EWVGRIKSKTDGGTTDYAAPVKGRFTISRDDSKNTLYLQMNSLKTE DTAVYYCTPRYNSDFDYWGQGTLVTVSS
609	ATX-P-3476	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPPGKGLEWI GYIYYSGFTKYNPSLKSRVTISVDTSKNQFSLKLSSVTAADTAVYYC ATHPRGYNYGPFDYWGQGTLVTVSS
610	ATX-P-3477	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGGSVNSGRYYWSWIRQPPGKG LEWIGYIYSSGYTNYNPSLKSRVTMLLDTSKNQFSLKLNSVTAADTA VYYCARSRGYRYGPFDYWGQGTLVTVSS
611	ATX-P-3418	VH aa	QVQLVQSGSELKKPGASVKVSCEASGYTFTSYAMNWVRQAPGQGL EWMGWINTNTGTPTYAQGFTGRFVFSLDTSVSTAYLQISSLKAEDTA VYYCASHSTSFDYWGQGTLVTVSS
612	ATX-P-3420	VH aa	QVQLQQWGAGLVKPSETLSLTCAVHGGSFSDYYLTWIRQPPGKGLE WIGEINHSGSTNYNPSLKSRVTLSIDTSKNQFSLKLSSVTAADTAVYY CARGSEDYYYYMDVWGKGTTVTVSS
613	ATX-P-3426	VH aa	EVQLVQSGAEVKKPGESLKISCKGSGYIFTSYWIGWVRQMPGKGLE WMGIIYPGDSDTRYSPSFQGQVTISADKSIITAYLQWSSLKASDTAM YYCARHDYFDIGGYFDYWGQGTLVTVSS
614	ATX-P-3432	VH aa	QVQLVQSGAEVKKPGASVKVSCKADGYTFTDYYMHWVRQAPGQG HEWMGWINPNSGVTYYAQKFQGRVTMTRDTSISTAYMELNRLRSD DTAVYYCARDRTFYFDYWGQGTLVTVSS
615	ATX-P-3433	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTDYYMHWVRQAPGQG LEWMGWINPNNGGTDYAQKFQGRVTMTRDTSISTAYMELHRLRSD DTAVYFCARGVYDVVVPTAIVNWFDPWGQGTLVTVSS
616	ATX-P-3438	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISNDYWWNWVRQPPGKGL EWIGEIYHSGHTNYNPSLKSRVTISVDKSKNQLSLKLTSVNAADTAV YYCARGGTEITGYMDVWGKGTTVTVSS
617	ATX-P-3441	VH aa	QVQLQESGPGLVKPSGTLSLTCAVSGASIRSGHWWSWVRQPPGKGL EWIGEIYHSGNTNYNPSLKSRVTLSVDKSKNQFSLKLSSVTAADTAV YYCARGHYGDYVVYFDYWGQGTLVTVSS
618	ATX-P-3446	VH aa	QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPPGKGLEWI GYVYYSGYTKYNPSLKSRVTISIDASKNQFSLKLTSVTAADTAVYYC ATVESKWNYGPFAIWGQGTMVTVSS
619	ATX-P-3452	VH aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYMNWVRQAPGQG LEWMGWINPNSGATNYAQKFQGRVTMTRDTSISTDYMELSRLRSD DTAVYYCARDGAKWNHEGYYFDYWGQGTLVTVSS

[00155] Table 3: Anti-C3 antibodies (VL sequences)

SEQ ID NO:	Antibody Name:	Descriptor:	Sequence:
620	ATX-P-3360	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
621	ATX-P-3362	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
622	ATX-P-3363	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
623	ATX-P-3365	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
624	ATX-P-3367	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
625	ATX-P-3369	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
626	ATX-P-3370	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC

			GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
627	ATX-P-3371	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
628	ATX-P-3373	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
629	ATX-P-3375	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
630	ATX-P-3378	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
631	ATX-P-3382	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
632	ATX-P-3383	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
633	ATX-P-3384	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT

			ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
634	ATX-P-3386	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
635	ATX-P-3387	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
636	ATX-P-3389	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
637	ATX-P-3391	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
638	ATX-P-3392	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
639	ATX-P-3395	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA

640	ATX-P-3396	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
641	ATX-P-3397	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
642	ATX-P-3305	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
643	ATX-P-3306	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
644	ATX-P-3307	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
645	ATX-P-3308	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
646	ATX-P-3310	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA

			GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
647	ATX-P-3312	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
648	ATX-P-3313	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
649	ATX-P-3314	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAGAATATTATT ACCTGGTTGGCTTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA CCTCCTGATCTATAAGGCGTCTAGTTTAGAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACCAT CAGCAGCCTGCAGCCTGATGATTTTGCAACTTATTACTGCCAACA GTATAGTAGTTATTCGTACACTTTTGGCCAGGGGACCAAGCTGGA GATCAAA
650	ATX-P-3319	VL nt	GCCATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGGGCATTAG AAATGATTTAGGCTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTATGCTGCATCCAGTTTACAAAGTGGGGTCCCAT CAAGGTTCAGCGGCAGTGGATCTGGCACAGATTTCACTCTCACCA TCAGCAGCCTGCAGCCTGAAGATTTTGCAACTTATTACTGTCTAC AAGATTACAATTACCCGTGGACGTTCGGCCAAGGGACCAAGGTG GAAATCAAA
651	ATX-P-3321	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGACTGTTTT GTACAGGTCCAACAATAAGAACTACTTAGCTTGGTATCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCGTGGACGTTC GGCCAAGGGACCAAGGTGGAAATCAAA
652	ATX-P-3328	VL nt	GCCATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCTTCTGTAG GAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGGGCATTAGA AATGATTTAGGCTGGTATCAGCAGAATCCCGGGAAAGCCCCTAA GCTCCTGATTTATGCTGCATCCAATTTACAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGCACAGATTTCACTCTCACCAT CAGCAGCCTGCAGCCTGAAGATTTTGTTACTTATTACTGTCTACA AGATTACAATTGGCCGTGGACGTTCGGCCAAGGGACACGACTGG AGATTAAA
653	ATX-P-3330	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGAGCATTAG CAACTATTTAAATTGGTATCAACAGAAACCAGAGAAAGCCCCTA AGTTCCTGATCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCAT

			CAAGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGTCTGCAACCTGAAGATTTTGCAACTTACTACTGTCAAC AGAGTTACAGTTCCCCGCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAA
654	ATX-P-3331	VL nt	GAAATTGTGTTGACTCAGTCTCCAGACTTTCAGTCTGTGACTCCA AAGGAGAAAGTCACCATCACCTGCCGGGCCAGTCAGAGCATTGG TAGTAACTTACACTGGTTCCAGCAGAAACCAGATCAGTCTCCAAA ACTCCTCATCAAGTATGCTTCCCAGTCCTTCTCAGGGGTCCCCTCG AGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACCCTCACCATC AATAGCCTGGAAGCTGAAGATGCTGCAATGTATTACTGTCATCAG AGTAGTAGTTTACCTCGGACGTTCGGCCAAGGGACCAAGGTGGA AATCAAA
655	ATX-P-3335	VL nt	GCCATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGGGCATTAG AAATGATTTAGGCTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTATGCTGCATCCAGTTTACAAAGTGGGGTCCCAT CAAGGTTCAGCGGCAGTGGATCTGGCACAGATTTCACTCTCACCA TCAGCAGCCTGCAGCCTGAAGATTTTGCATCTTATTACTGTCTAC AAGATTACAATTGGCCGTACACTTTTGGCCAGGGGACCAAGCTGG AGATCAAA
656	ATX-P-3336	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAG AAGCAGCTACTTTGCCTGGTACCAGCAGAAACCTGGCCAGGCTCC CAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCC AGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCAC CATCAGCAGACTGGAGCCTGAAGATTTTGCAGTGTATTACTGTCA GCAGTATGGTAGCTCACCTCGGACGTTCGGCCAAGGGACCAAGG TGGAAATCAAA
657	ATX-P-3337	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTTTGGTACTCCTCGGACGTTCG GCCAAGGGACCAAGGTGGAAATCAAA
658	ATX-P-3340	VL nt	GAAATTGTGTTGACACAGTCTCCAGCCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAG CAGCTACTTAGCCTGGTACCAACAGAAACCTGGCCAGGCTCCCAG GCTCCTCATCTATGATGCATCCAACAGGGCCACTGGCATCCCAGC CAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCACCAT CAGCAGCCTGCAGTCTGAAGATTTTGCAGTTTATTACTGTCAGCA GCGTAGCAATTGGCCGCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAA
659	ATX-P-3342	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGACCATTAG GAGCTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCAT CAAGGTTCAGTGGCAGTGGATCTGGGACAAATTTCACTCTCACCA TCAGCAGTCTGCAACCTGAAGATTTTGCAACTTACTCCTGTCAAC AGAGTTACACTACCCCGCTCACTTTCGGCGGAGGGACCAAGGTG GAGATCAAA
660	ATX-P-3344	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTATTAG

			CAGCAGCTACTTAGCCTGGTACCAGCGGGAACCTGGCCAGGCTCC CAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCC AGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCAC CATCAGCAGACTGGAGCCTGAAGATTTTGTAGTGTATTACTGTCA ACAATATGGTAGCTCACCGATCACCTTCGGCCAAGGGACACGACT GGAGATTAAA
661	ATX-P-3347	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTCG CAGCAGCTACTTAGCCTGGTACCAGCAGAAACCTGGCCAGGCTCC CAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCC AGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCAC CTTCAGCAGACTGGAGCCTGAAGATTTTGCAGTGTATTACTGTCA GCAGTATGGTAGCTCACCGTACACTTTTGGCCAGGGGACCAAGCT GGAGATCAAA
662	ATX-P-3348	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCAGGCGAGTCAGGACATTAG CAACTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTACGATGCATCCAATTTGGAAACAGGGGTCCCAT CAAGGTTCAGTGGAAGTGGATCTGGGACAGATTTTACTTTCACCA TCAGCAGCCTGCAGCCTGAAGATTTTGCAACTTACTATTGTCAAC AGGCTAACAGTTTCCCGCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAA
663	ATX-P-3349	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAG CAGCAGCTACTTAGCCTGGTACCAGCAGAAACCTGGCCAGGCTCC CAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCC AGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCAC CATCAGCAGACTGGAGCCTGAAGATTTTGCAGTGTATTACTGTCA GCAGTATGGTAGCTCACCATTCACTTTCGGCCCTGGGACCAAAGT GGATATCAAA
664	ATX-P-3350	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCGTGGACGTTC GGCCAAGGGACACGACTGGAGATTAAA
665	ATX-P-3351	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCGAGTCAGGACATTAG CAACTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTATGCTGCATCCAGTTTGGAAAGTGGGGTCCCAT CAAGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGTCTGCAACCTGAAGATTTTGCAACTTACTACTGTCAAC AGAGTTACAGTACCCCTACTTTCGGCGGAGGGACCAAGGTGGAG ATCAAA
666	ATX-P-3353	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGGTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGCCAGCCTCCTAAACTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATGGTACTCCTCGGACGTTC GGCCAAGGGACCAAGGTGGAAATCAAA

667	ATX-P-3354	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCAGGCGAGTCAGGACATTAA GAACTGTTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTACGATGCATCCAATTTGGAAACAGGGGTCCCAT CAAGGTTCAGTGGAAGTGGATCTGGGACAGATTTTACTTTCACCA TCAGCAGCCTGCAGCCTGAAGATATTGCAACATATTACTGTCAAC AGTTTGATAATCTCCCTCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAA
668	ATX-P-3355	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGACTATTTT ATACAGGTCCAACATTAAGAACTACTTAGCTTGGTACCAGCAGAA ACCAGGACAGCCTCCTAAACTGCTCATTTCCTGGGCATCTACCCG GGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCGGACGTTCGGCC AGGGGACCAAGCTGGAGATCAAA
669	ATX-P-3356	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCTCGGACGTTC GGCCAAGGGACCAAGGTGGAAATCAAA
670	ATX-P-3358	VL nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATCTGTA GGAGACAGAGTCACTATCACTTGTCGGGCGAGTCAGGGTATTAG CAGCTGGTTAGCCTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AACTCCTGATCTATGCTGCATCCAGTTTGCAGAGTGGGGTCCCAT CAAGGTTCAGCGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGCCTGCAGCCTGAAGATTTTGCAACTTACTATTGTCAAC AGGCTAACAGTTTCCCTCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAA
671	ATX-P-3359	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCTCCGACGTTCG GCCAAGGGACCAAGGTGGAAATCAAA
672	ATX-P-3362	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGAGCATTAG CAGCTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCAT CAAGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGTCTGCAACCTGAAGATTTTGCAACTTACTACTGTCAAC AGAGTTACAGTACCCCGTACACTTTTGGCCAGGGGACCAAGCTGG AGATCAAA
673	ATX-P-3363	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG

			GCAGTTTATTACTGTCAGCAATTTTATGATACTCCTCGGACGTTCG GCCAAGGGACCAAGGTGGAAATCAAA
674	ATX-P-3366	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCGAGTCAGGGCATTAG CAATTATTTAGCCTGGTATCAGCAGAAACCAGGGAAAGTTCCTAA GCTCCTGATCTATGTTGCATCCACTTTGCAATCAGGGGTCCCATCT CGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATC AGCAGCCTGCAGCCTGAAGATGTTGCAACTTATTACTGTCAAAAT TATATCAGTGCCCCGCTCACTTTCGGCGGAGGGACCAAGGTGGAG ATCAAA
675	ATX-P-3367	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCGTGGACGTTC GGCCAAGGGACCAAGGTGGAAATCAAA
676	ATX-P-3368	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAG CAGCAGCTACTTAGCCTGGTACCAGCAGAAACCTGGCCAGGCTCC CAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCC AGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCAC CATCAGCAGACTGGAGCCTGAAGATTTTGCAGTGTATTACTGTCA GCAGTATGGTAGCTCACCGTACACTTTTGGCCAGGGGACCAAGCT GGAGATCAAA
677	ATX-P-3369	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCAACATCACTTGCCGGGCGAGTCAGGGCATTAG CAATTATTTAGCCTGGTATCAGCAGAAACCAGGGAAAGTTCCTAA GCTCCTGATCTATGCTGCATCCACTTTGCAATCAGGGGTCCCATCT CGTTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATC AGCAGCCTGCAGCCTGAAGATGTTGCAAGTTATTTCTGTCAAAAA TATATCAGTGCCCCGCTCACTTTCGGCGGAGGGACCAAGGTGGAG ATCAAA
678	ATX-P-3370	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCGAGTCAGGGCATTAG CAATTATTTAGCCTGGTATCAGCAGAAACCAGGGAAAGTTCCTAA GCTCCTGATCTATGCTGCATCCACTTTGCAATCAGGGGTCCCATCT CGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATC AGCAGCCTGCAGCCTGAAGACGTTGCAAGTTATTACTGTCAAGAT TATACCAGTGCCCCGCTCACTTTCGGCGGAGGGACCAAGGTGGA GATCAAA
679	ATX-P-3371	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAG TGACAGCTACTTAGCCTGGTACCAGCAGGAACCTGGCCAGGCGC CCAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCC CAGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCA CCATCAGCAGACTGGAGCCTGAAGATTTTGCATTATATTACTGTC AGCAATATGATTCCTCGCCATTCACTTTCGGCCCTGGGACCAAAG TGGATATCAAA
680	ATX-P-3472	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC

			GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTG GCCAGGGGACCAAGCTGGAGATCAAA
681	ATX-P-3361	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
682	ATX-P-3366	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
683	ATX-P-3376	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
684	ATX-P-3377	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTAACC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCTCCGGGTCTGGGA CAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGG CAGTTTATTACTGTCAGCAATATTATAGTACTCCGTACACTTTTGG CCAGGGGACCAAGCTGGAGATCAAA
685	ATX-P-3418	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACCTGCCGGGCAAGTCAGACCATTAG AAACTTTTTAAATTGGTATCAGCGGAAACCAGGGAAAGCCCCTA AGATCCTGATCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCAT CAAGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGTCTGCAACCTGCAGATTTTGCAACTTACTACTGTCAAC AGACTTACAGTATCCCGATCACCTTCGGCCAAGGGACACGACTGG AGATTAAA
686	ATX-P-3420	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGAGCATTAG CAGGTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AACTCCTGCTCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCAT CAAAGTTCAGCGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGCCTGCAACCTGAAGATTTTGCAACTTACTACTGTCAAC AGAGTTACAGTTCCCCGATCACCTTCGGCCAAGGGACACGACTGG AGATTAAA
687	ATX-P-3426	VL nt	GATATTGTGATGACTCAGTCTCCACTCTCCCTGCCCGTCACCCCTG GAGAGCCGGCCTCCATCTCCTGCAGGTCTAGTCAGAGCCTCCTGC

			ATAGTAATGGATACAACTATTTGGATTGGTACCTGCAGAAGCCAG GGCAGTCTCCACAGCTCCTGATCTATTTGGGTTCTAATCGGGCCT CCGGGGTCCCTGACAGGTTCAGTGGCAGTGGATCAGGCACAGAT TTTACACTGAAAATCAGCAGAGTGGAGGCTGAGGATGTTGGGGT TTATTACTGCATGCAAACTCTACAAACTCCTCCGACGTTCGGCCA AGGGACCAAGGTGGAAATCAAA
688	ATX-P-3432	VL nt	GACATCCAGTTGACCCAGTCTCCATCCTTCCTGTCTGCATCTGTAG GAGACAGACTCACCATCACTTGCCGGGCCAGTCAGGGCATTAGC AGTTATTTAGCCTGGTATCAGCAAAAACCAGGGAAAGCCCCTAA GCTCCTGATCTATACTGCATCCACTTTACAAAGTGGGGTCCCATC AAGGTTCAGCGGCAGTGGATCTGGGACAGAATTCACTCTCACAAT CAGCAGCCTGCAGCCTGAAGATTTTGCAACTTATTACTGTCAACA GCTTAATGGTTACCCTCCGACGTTCGGCCAAGGGACCAAGGTGGA AATCAAA
689	ATX-P-3433	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGAGCATTAC CAGCTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA AGCTCCTGATCTTTGCTGCATCCAGTTTGCAAAGTGGGGTCCCAT CAAGGTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGTCTGCAACCTGAAGATTTTGCAACTTACTACTGTCAAC AGAGTTACAGTACCCCTCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAA
690	ATX-P-3438	VL nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTCTCTG GGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTT ATACAGCTCCAACAATAAGAACTACTTAGCTTGGTACCAGCAGA AACCAGGACAGCCTCCTAAGCTGCTCATTTACTGGGCATCTACCC GGGAATCCGGGGTCCCTGACCGATTCAGTGGCAGCGGGTCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGGCTGAAGATGTG GCAGTTTATTACTGTCAGCAATATTATAGTACTCCTCGGACGTTC GGCCAGGGGACCAAGGTGGAAATCAAA
691	ATX-P-3441	VL nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTA GGAGAAAGAGTCACCATCACTTGCCGGGCAAGTCAGAGCATTAG CAGCTATTTAAATTGGTATCAGCAGAAACCAGGGAAAGCCCCTA ACCTCCTGATCTATGCTGCATCCAGTTTCCAAAGTGGGGTCCCAT CAAGGGTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCA TCAGCAGTCTGCAACCTGAGGATTTTGCAACTTACTACTGTCAAC AGAGTTACAGTAACCCGTACACTTTTGGCCAGGGGACCAAGCTG GAGATCAAA
692	ATX-P-3446	VL nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTCTCCA GGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAG TAGAAGCTACTTAGCCTGGTACCAGCAGAAACCTGGCCAGGCTCC CAGGCTCCTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCC AGACAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCACTCTCAC CATCAGCAGACTGGAGCCTGAAGATTTTGCAGTGTATTACTGTCA GCAGTATGGTAGCTCACCGTGGACGTTCGGCCAAGGGACCAAGG TGGAAATCAAA
693	ATX-P-3452	VL nt	GATATTGTGATGACTCAGTCTCCACTCTCCCTGCCCGTCACCCCTG GAGAGCCGGCCTCCATCTCCTGCAGGTCTAGTCAGATCCTCCTGC ATACTAATGGATACAACTATTTGGATTGGTACCTGCAGAAGCCAG GGCAGTCTCCTCAGCTCCTGATCTATTTGGGTTCTTATCGGGCCTC CGGGGTCCCTGACAGGTTCAGTGGCAGTGGATCAGGCACAGATTT TACACTGAAAATCAGCAGAGTGGAGGCTGGGGATGTTGGGCTTT ATTACTGCATGCAAGCTCTACAAACTCCGCTCACTTTCGGCGGAG GGACCAAGGTGGAGATCAAA

694	ATX-P-3360	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
695	ATX-P-3362	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
696	ATX-P-3363	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
697	ATX-P-3365	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
698	ATX-P-3367	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
699	ATX-P-3369	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
700	ATX-P-3370	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
701	ATX-P-3371	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
702	ATX-P-3373	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
703	ATX-P-3375	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
704	ATX-P-3378	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
705	ATX-P-3382	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
706	ATX-P-3383	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
707	ATX-P-3384	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
708	ATX-P-3386	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
709	ATX-P-3387	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
710	ATX-P-3389	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
711	ATX-P-3391	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK

712	ATX-P-3392	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
713	ATX-P-3395	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
714	ATX-P-3396	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
715	ATX-P-3397	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
716	ATX-P-3405	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
717	ATX-P-3406	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
718	ATX-P-3407	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
719	ATX-P-3408	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
720	ATX-P-3410	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
721	ATX-P-3412	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
722	ATX-P-3413	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
723	ATX-P-3414	VL aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKAPNLLI YKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQQYSSYSY TFGQGTKLEIK
724	ATX-P-3419	VL aa	AIQMTQSPSSLSASVGDRVTITCRASQGIRNDLGWYQQKPGKAPKLL IYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCLQDYNYP WTFGQGTKVEIK
725	ATX-P-3421	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQTVLYRSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPWTFGQGTKVEIK
726	ATX-P-3428	VL aa	AIQMTQSPSSLSASVGDRVTITCRASQGIRNDLGWYQQNPGKAPKLL IYAASNLQSGVPSRFSGSGSGTDFTLTISSLQPEDFVTYYCLQDYNWP WTFGQGTRLEIK
727	ATX-P-3430	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQSISNYLNWYQQKPEKAPKFLI YAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQSYSSPLT FGGGTKVEIK
728	ATX-P-3431	VL aa	EIVLTQSPDFQSVTPKEKVTITCRASQSIGSNLHWFQQKPDQSPKLLIK YASQSFSGVPSRFSGSGSGTDFTLTINSLEAEDAAMYYCHQSSSLPRT FGQGTKVEIK
729	ATX-P-3435	VL aa	AIQMTQSPSSLSASVGDRVTITCRASQGIRNDLGWYQQKPGKAPKLL IYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFASYYCLQDYNWP YTFGQGTKLEIK

730	ATX-P-3436	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSVRSSYFAWYQQKPGQAPRLL IYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGSSPR TFGQGTKVEIK
731	ATX-P-3437	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYFGTPRTFGQGTKVEIK
732	ATX-P-3440	VL aa	EIVLTQSPATLSLSPGERATLSCRASQSVSSYLAWYQQKPGQAPRLLI YDASNRATGIPARFSGSGSGTDFTLTISSLQSEDFAVYYCQQRSNWPL TFGGGTKVEIK
733	ATX-P-3442	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQTIRSYLNWYQQKPGKAPKLLI YAASSLQSGVPSRFSGSGSGTNFTLTISSLQPEDFATYSCQQSYTTPLT FGGGTKVEIK
734	ATX-P-3444	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSISSSYLAWYQREPGQAPRLLI YGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFVVYYCQQYGSSPIT FGQGTRLEIK
735	ATX-P-3447	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSVRSSYLAWYQQKPGQAPRL LIYGASSRATGIPDRFSGSGSGTDFTLTFSRLEPEDFAVYYCQQYGSS PYTFGQGTKLEIK
736	ATX-P-3448	VL aa	DIQMTQSPSSLSASVGDRVTITCQASQDISNYLNWYQQKPGKAPKLL IYDASNLETGVPSRFSGSGSGTDFTFTISSLQPEDFATYYCQQANSFPL TFGGGTKVEIK
737	ATX-P-3449	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLL IYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGSSPF TFGPGTKVDIK
738	ATX-P-3450	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPWTFGQGTRLEIK
739	ATX-P-3451	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQDISNYLNWYQQKPGKAPKLL IYAASSLESGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQSYSTPT FGGGTKVEIK
740	ATX-P-3453	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYRSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYGTPRTFGQGTKVEIK
741	ATX-P-3454	VL aa	DIQMTQSPSSLSASVGDRVTITCQASQDIKNCLNWYQQKPGKAPKLL IYDASNLETGVPSRFSGSGSGTDFTFTISSLQPEDIATYYCQQFDNLPL TFGGGTKVEIK
742	ATX-P-3455	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQTILYRSNIKNYLAWYQQKPG QPPKLLISWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCQ QYYSTRTFGQGTKLEIK
743	ATX-P-3456	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPRTFGQGTKVEIK
744	ATX-P-3458	VL aa	DIQMTQSPSTLSASVGDRVTITCRASQGISSWLAWYQQKPGKAPKLL IYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQANSFPL TFGGGTKVEIK
745	ATX-P-3459	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPPTFGQGTKVEIK
746	ATX-P-3462	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLI YAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQSYSTPY TFGQGTKLEIK
747	ATX-P-3463	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQFYDTPRTFGQGTKVEIK

748	ATX-P-3466	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQGISNYLAWYQQKPGKVPKLL IYVASTLQSGVPSRFSGSGSGTDFTLTISSLQPEDVATYYCQNYISAPL TFGGGTKVEIK
749	ATX-P-3467	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPWTFGQGTKVEIK
750	ATX-P-3468	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLL IYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGSSPY TFGQGTKLEIK
751	ATX-P-3469	VL aa	DIQMTQSPSSLSASVGDRVNITCRASQGISNYLAWYQQKPGKVPKLL IYAASTLQSGVPSRFSGSGSGTDFTLTISSLQPEDVASYFCQKYISAPL TFGGGTKVEIK
752	ATX-P-3470	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQGISNYLAWYQQKPGKVPKLL IYAASTLQSGVPSRFSGSGSGTDFTLTISSLQPEDVASYYCQDYTSAP LTFGGGTKVEIK
753	ATX-P-3471	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSDSYLAWYQQEPGQAPRLL IYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFALYYCQQYDSSPF TFGPGTKVDIK
754	ATX-P-3472	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPYTFGQGTKLEIK
755	ATX-P-3361	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
756	ATX-P-3366	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
757	ATX-P-3376	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
758	ATX-P-3377	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYY CQQYYSTPYTFGQGTKLEIK
759	ATX-P-3418	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQTIRNFLNWYQRKPGKAPKILI YAASSLQSGVPSRFSGSGSGTDFTLTISSLQPADFATYYCQQTYSIPIT FGQGTRLEIK
760	ATX-P-3420	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQSISRYLNWYQQKPGKAPKLL LYAASSLQSGVPSKFSGSGSGTDFTLTISSLQPEDFATYYCQQSYSSPI TFGQGTRLEIK
761	ATX-P-3426	VL aa	DIVMTQSPLSLPVTPGEPASISCRSSQSLLHSNGYNYLDWYLQKPGQS PQLLIYLGSNRASGVPDRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ TLQTPPTFGQGTKVEIK
762	ATX-P-3432	VL aa	DIQLTQSPSFLSASVGDRLTITCRASQGISSYLAWYQQKPGKAPKLLI YTASTLQSGVPSRFSGSGSGTEFTLTISSLQPEDFATYYCQQLNGYPP TFGQGTKVEIK
763	ATX-P-3433	VL aa	DIQMTQSPSSLSASVGDRVTITCRASQSITSYLNWYQQKPGKAPKLLI FAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQSYSTPLT FGGGTKVEIK
764	ATX-P-3438	VL aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWYQQKP GQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYC QQYYSTPRTFGQGTKVEIK
765	ATX-P-3441	VL aa	DIQMTQSPSSLSASVGERVTITCRASQSISSYLNWYQQKPGKAPNLLI YAASSFQSGVPSRVSGSGSGTDFTLTISSLQPEDFATYYCQQSYSNPY TFGQGTKLEIK

766	ATX-P-3446	VL aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSRSYLAWYQQKPGQAPRL LIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGSSP WTFGQGTKVEIK
767	ATX-P-3452	VL aa	DIVMTQSPLSLPVTPGEPASISCRSSQILLHTNGYNYLDWYLQKPGQS PQLLIYLGSYRASGVPDRFSGSGSGTDFTLKISRVEAGDVGLYYCMQ ALQTPLTFGGGTKVEIK

[00156] Table 4: Anti-C3 antibodies (HC IgG1 Fc sequences)

SEQ ID NO:	Antibody Name:	Descriptor:	Sequence:
768	ATX-P-3360	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCATTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGG AAGGGGCTGGAGTGGCTTGGAAAAATCTATCATAGTGGGAAC ACCGACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAATCAGTTCTCCCTGAGGCTGAGTTCTGT GACCGCCGCGGACACGGCCGTATATTATTGTGCGAGCGGAAG CGATTACGATTTTTGGAGTGGTTATTTGGACTACTGGGGCCAG GGAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTT CTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGG GACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAG CCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGT GTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
769	ATX-P-3362	HC IgG1 Fc nt	GAAGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCT GGCAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TTGATGATTATGCCATGCACTGGGTCCGGCAAGCTCCAGGGAA GGGCCTGGAGTGGGTCTCAGGTATTAGTTGGAATAGTGGTAGC ATAGCCTATGCGGACTCTGTGAAGGGCCGATTCACCATCTCCA GAGACAACGCCAAGAACTCCCTGTATCTGCAAATGAACAGTCT GAGAGTTGAGGACACGGCCTTTTTTTACTGTGCAAGAGTCGCA GCAGCAGCTGGTATCCCTTTCTTTGACTACTGGGGCCAGGGAA CCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG

			TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
770	ATX-P-3363	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCTGGGACCCTGACCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAACAGGGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCGGG GAAGGGGCTGGAGTGGATTGGACAAATCTATCAGAGTGGGAG CACCAACTACAACCCGTCCCTCAAGAGTCGGGTCACCATATCA GTCGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGTTCTG TGACCGCCGCGGACACGGCCGTATATTACTGTGCGAGAGTATA TGACTGGAACTACGGGGGTCACTTTGACTACTGGGGCCAGGG AACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCT GTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGA CAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCC AGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGT GCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGC CTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTC AGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAA AGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCA CACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCC AGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGA TCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTC CCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGT GTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAG TACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCA CCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAG CAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAG GCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGC CTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTG TCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGG AATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCAC CCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACT GACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAG TTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAG AAATCTCTTAGTCTTTCACCCGGT

771	ATX-P-3365	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCAT CAGCAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGACAAATCTATCATAGTGGCCA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCG GTTGACATGTCCAAGAACCAGTTCTCCCTGAAGCTGACCTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGGGGGG CTACAGAAATTCTGGGGTACTTCGATCTCTGGGGCCGTGGCAC CCTGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTA TTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAG CCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGT TACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCA CACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
772	ATX-P-3367	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCGT CAGCAGTGGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCA GGGAAGGGACTGGAGTGGATTGGATATATCTATAAAAGTGGG TTCACCAATTACAACCCCTCCCTCAAGAGTCGAGTCACCATAT CAGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTC TGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGATAGGG GGACGTGGATACAGCTATGGTCCTTTTGACTACTGGGGCCAGG GAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTC TGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGG ACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGC CAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTG TGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAG CCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACT CAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAA AAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTC ACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCC CAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATG ATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGT CCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGG TGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCA GTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTC

			ACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAA GCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAA GGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCC GCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACG TGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATG GGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCC ACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAA CTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCA GTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCA GAAATCTCTTAGTCTTTCACCCGGT
773	ATX-P-3369	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCT TCACCGGCTACTATTTACACTGGGTGCGACAGGCCCCTGGACA AGGACTTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGA CACAAACTATGTACAGAACTTTCAGGGCAGGGTCACCATGACC AGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAGCAGG CTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAGATCCT ACGTGGATACCAGCTCGTCGGCTTTTGATATCTGGGGACAAGG GACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCT GTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGA CAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCC AGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGT GCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGC CTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTC AGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAA AGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCA CACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCC AGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGA TCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTC CCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGT GTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAG TACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCA CCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAG CAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAG GCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGC CTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTG TCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGG AATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCAC CCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACT GACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAG TTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAG AAATCTCTTAGTCTTTCACCCGGT
774	ATX-P-3370	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCAT CAGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCCGGGAA GGGACTGGAGTGGATTGGGTATGTCTATTACAGTGGGTACACC AAGTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAG ACACGCCCAAGACCCAGTTCTCCCTGAAGATGAGCTCTGTGAC CGCTGCGGACACGGCCGTGTATTACTGTGCGAGCGTCGAATCA AAGTGGAACTACGGGCCTTTTGATATCTGGGGACAAGGGACA ATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTAT TTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGC CGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTT ACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCAC

			ACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
775	ATX-P-3371	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGACTCCAT CAGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGAA GGGACTGGAGTGGATTGGATATATCTATTACAGTGGGTTCACC AAGTACAACCCCTCCCTCAACAGTCGAGTCACCATATCAGTAG ACACGTCCAAGAGCCAGTTCTCCCTGAAGCTGACCTCTGTGAC CGCTGCGGACACGGCCGTGTATTACTGTGCGATGAGAGAGCC GAGAGGCCGGTATAACTGGAACTACGGGCCTTTTGATATCTGG GGACAAGGGACAATGGTCACCGTCTCTTCAGCTAGCACTAAA GGGCCTTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTC GGGAGGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTC CCTGAGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACA AGTGGTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCT TGTATAGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTG GGCACTCAGACGTATATTTGCAATGTGAACCACAAACCTTCAA ATACAAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATA AAACTCACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGG TGGTCCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACT CTAATGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTG ACGTGTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGT TGATGGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGA GGAGCAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACC GTCCTTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCA AGGTAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCA TTTCCAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATA CTCTTCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATC CCTTACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTG TTGAATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAA CAACGCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTA TAGCAAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAA TGTATTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACT ACACGCAGAAATCTCTTAGTCTTTCACCCGGT
776	ATX-P-3373	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT

			CAGTAATGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCCGGG AAGGGACTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTC ACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAACCAGTTCTCCCTGGAGCTGAACTCTGT GACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGAGTA TCATAATTTCATGGACGTCTGGTGCAAAGGGACCACGGTCACC GTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGGC CCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGGG TTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAGTT GGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCTGC CGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGGTC ACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTGCA ATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACGCG TAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCCATG CCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTGTTC CCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGCCAG AGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCCCGA AGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACACAAT GCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACCTATC GTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGCTTAA CGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCACTTCC GGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCAACC AAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAGGAA ATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAGGTT TTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGGTCA GCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGATAG CGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATAAA TCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTATGC ATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGTCT TTCACCCGGT
777	ATX-P-3375	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGACTCCGT CAGCAGTGGTAAATACTTCTGGAGCTGGATCCGGCAGTCCCCA GGGAAGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGG AGCACCAACTACAACCCCTCCCTCAAGAATCGAGTCACCATAT CGGTAGACACGTCCAAGAAGGAGTTGTCTCTGAAGCTGAGTTC TGTGACCGCTGCGGACACGGCCGTTTATTACTGTGCGAGAGGA GGGCATAACTGGAACTACGCTGCTTTTGATATCTGGGGACAAG GGACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTC TGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGG ACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGC CAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTG TGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAG CCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACT CAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAA AAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTC ACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCC CAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATG ATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGT CCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGG TGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCA GTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTC ACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAA GCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAA

			GGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCC GCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACG TGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATG GGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCC ACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAA CTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCA GTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCA GAAATCTCTTAGTCTTTCACCCGGT
778	ATX-P-3378	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGTAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGG AAGGGGTTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTC ACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAACCAGTTCTCCCTGGAGCTGAGCTCTGT GGCCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGAGTA TGAGAACTTCATGGACGTCTGGGGCAAGGGGACCACGGTCAC CGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGG CCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGG GTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAG TTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCT GCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGG TCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTG CAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACG CGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCC ATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTG TTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGC CAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCC CGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACAC AATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACC TATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGC TTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCAC TTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCA ACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAG GAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAG GTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGG TCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGAT AGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATA AATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTAT GCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGT CTTTCACCCGGT
779	ATX-P-3382	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCAT CAGCAGTAATAGCTGGTGGAATTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGGCAAATCTTTCATAGTGGACA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATGTCT ATAGACAAGTCCAAGAACCAGTTCTCCCTGAAACTGACCTCTG TGACCGCCGCGGACACGGCCCTGTATTACTGTGCGAGAGGAG GGGAGTATGAAAACTCGGCGAACTGGTTCGACCCCTGGGGCC AAGGAACCCTGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCC TTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGA GGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTG AGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTG GTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTAT AGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCA

			CTCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATAC AAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAAC TCACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGT CCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAA TGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGT GTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGAT GGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAG CAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCC TTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGG TAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTC CAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCT TCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTT ACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGA ATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAAC GCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGC AAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTA TTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACA CGCAGAAATCTCTTAGTCTTTCACCCGGT
780	ATX-P-3383	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGTCTCCAT CAACAAGGATAACTGGTGGACTTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGGAAAATCTATCATAGTGGGAG CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAACTCCAAGAACCAATTCTCCCTGAAGCTGAACTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTACGAGAGGGG GGGATATAGCTATGGAGGGGGACTGGTTCGCCCCCTGGGGCC AGGGAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCC TTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGA GGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTG AGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTG GTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTAT AGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCA CTCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATAC AAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAAC TCACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGT CCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAA TGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGT GTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGAT GGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAG CAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCC TTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGG TAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTC CAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCT TCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTT ACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGA ATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAAC GCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGC AAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTA TTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACA CGCAGAAATCTCTTAGTCTTTCACCCGGT
781	ATX-P-3384	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAGTGATAACTGGTGGAATTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGCTTGGAAAAATCTATCATAGTGGGAA

			CACCGACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAATCAGTTCTCCCTGAGGCTGAGTTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGTG GAACTGAAACTACGGGGTACATGGACGTCTGGGGCAAAGGGA CCACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
782	ATX-P-3386	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAATGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAATGGATTGGGAAAATCTATCATAGTGGGTT CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAACTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGGG GGGATAACTTTATGGAGGGGGAGGGGTTAGGGACCTGGGGCC CGGGAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCC TTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGA GGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTG AGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTG GTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTAT AGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCA CTCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATAC AAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAAC TCACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGT CCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAA TGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGT GTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGAT GGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAG CAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCC TTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGG TAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTC CAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCT TCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTT

			ACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGA ATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAAC GCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGC AAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTA TTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACA CGCAGAAATCTCTTAGTCTTTCACCCGGT
783	ATX-P-3387	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAATGATAACTGGTGGAATTGGGTCCGCCAGTCCCCAGG GAAGGGGCTGGAGTGGATTGGAAAAATCTATCATAGTGGGTT CACCGACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTG TGACCGCCGCGGACACGGCCGTGTATTATTGTGCGAGAGGAA ACCATAACTATTTGTGGATTGGGTATTTGGGGACCTGGGGCCC GGGAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCT TCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAG GGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGA GCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGG TGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
784	ATX-P-3389	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCATCTGCGCTGTCTCTGGTGGCTCCAT CAGTAGTAGTAATTGGTGGAGTTGGGTCCGCCAGCCCCCAGGG AAGGGGCTGGAGTGGATTGGGAGAATCTATCATAGTGGGCAC ACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGACCTCTGT GACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGGAG GGACTTAACTGGATACTTTGACTACTGGGGCCAGGGAACCCTG GTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCC CTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGC CCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACC GTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACG TTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTC TGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTAT ATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGATA AACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATGCC

			CGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTT CCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGT ACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAG ATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGT ACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTC GACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGAT TGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAA GCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAA GGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTC GTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGT TAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCG AACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCGTC CTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTG TAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTC CGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAATCT CTTAGTCTTTCACCCGGT
785	ATX-P-3391	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAACCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGTAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGG AAGGGGCTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTC ACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAACCAGTTCTCCCTGGAGCTGAGCTCTGT GACCGCCGCGGACACGGCCGTATATTACTGTGCGAGAGGGGT CGATTTTTGGAGTGGTTCCCACATGGACGTCTGGGGCAAAGGG ACCACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
786	ATX-P-3392	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGTAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGG AAGGGGCTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTC ACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCTAAGAACCAGTTTTCCCTGGAACTGAGCTCTGT

			GACCGCCGCGGACACGGCCGTGTATTTCTGTGCGCGAGAAGG ACTGGAACTACCCCACATGGACGTCTGGGGCAAAGGGACCAC GGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTT CCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
787	ATX-P-3395	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCCGGGGGAGGCGTGGTCAAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGCTACTGGATGCACTGGGTCCGCCAAGCTCCAGGGAA GGGGCTGGTGTGGGTCTCACGTATTAATAGTGATGGAAGTAGC ACAAGCTACGCGGACTCCGTGCAGGGCCGATTCACCATCTCCA GAGACATCGCCAAGAACACGCTGTATCTGCAAATGAACAGTC TGAGAGCCGAGGACACGGCTGTGTATTACTGTGCAAGAGGGC AGCACCTGGTTCAGGACTATTGGGGCCAGGGAACCCTGGTCAC CGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGG CCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGG GTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAG TTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCT GCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGG TCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTG CAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACG CGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCC ATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTG TTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGC CAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCC CGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACAC AATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACC TATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGC TTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCAC TTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCA ACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAG GAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAG GTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGG TCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGAT

			AGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATA AATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTAT GCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGT CTTTCACCCGGT
788	ATX-P-3396	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAACCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCT TCACCGGCTACTATATGCACTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGG CACAAACTATGCACAGAAGTTTCAGGGCAGGGTCACCATGAC CAGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAGCAG GCTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAGAGA ACGGGGCGACTATGATGGCGATGCTTTTGATATCTGGGGACAA GGGACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTT CTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGG GACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAG CCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGT GTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
789	ATX-P-3397	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCCAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TTAGTAACTATTACATGAACTGGGTCCGCCAGGCTCCAGGGAA GGGGCTGGAGTGGGTGGCCAACATAAAGCAAGATGGAAGTGA GAAATACTATGTGGACTCTGTGAAGGGCCGCTTCACCATCTCC AGAGACAACGCCAAGAACTCACTGTATCTCCAAATGAACAGC CTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGAT GGGTACTACAACTTCGATGCTTTTGATATCTGGGGACAAGGGA CAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA

			GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
790	ATX-P-3405	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGCTATAGCATGAACTGGGTCCGCCAGGCTCCAGGGA AGGGGCTGGAGTGGGTCTCATCCATTAGTAGTAGTAGTTA CATATACTACGCAGACTCAGTGAAGGGCCGATTCACCATCTCC AGAGACAACGCCAAGAACTCACTGTATCTGCAAATGAACAGC CTGAGAGCCGAGGACACGGCCGTGTATTACTGTGCGAGAGAA GGGTATGATAACTGGAACTCTGCTTGTGATATCTGGGGACAAG GGACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTC TGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGG ACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGC CAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTG TGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAG CCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACT CAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAA AAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTC ACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCC CAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATG ATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGT CCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGG TGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCA GTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTC ACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAA GCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAA GGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCC GCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACG TGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATG GGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCC ACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAA CTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCA GTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCA GAAATCTCTTAGTCTTTCACCCGGT
791	ATX-P-3406	HC IgG1 Fc nt	CAGATCACCTTGAAGGAGTCTGGTCCTACGCTGGTGAAACCCA CACAGACCCTCACGCTGACCTGCACCTTCTCTGGGTTTTCACTC AGCACTAGTGGAGTGGGTGTGGGCTGGATCCGTCAGCCCCCA GGAAAGGCCCTGGAGTGGCTTGCACTCATTTATTGGAATGGTG ATGAGCGCTACAGCCCATCTCTGAAGAGCAGGCTCACCATCAC CAAGGACACCTCCAAAAACCAAGTGGTCCTTACAATGACCAA CATGGACCCTGTGGACACAGCCACATATTACTGTGCACACAGT CCGAACTGGGGATATGAAGCTTTTGATATCTGGGGACAAGGG

			ACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
792	ATX-P-3407	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCCTGGTCCCGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGCTATTGCATGAACTGGGTCCGCCAGGCTCCAGGGAA GGGGCTGGAGTGGGTCTCATCCATTAATAGTGATAGTAGTTAC ATATACTACGCGGACTCAGTGAAGGGCCGATTCACCATCTCCA GAGACAACGCCAAGAACTCACTGTATCTGCAAATGAACAGCC TGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGAGG GATACTACAACTGGAACGGAGGGAATGACTACTGGGGCCAGG GAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTC TGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGG ACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGC CAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTG TGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAG CCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACT CAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAA AAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTC ACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCC CAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATG ATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGT CCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGG TGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCA GTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTC ACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAA GCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAA GGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCC GCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACG TGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATG GGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCC ACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAA CTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCA

			GTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCA GAAATCTCTTAGTCTTTCACCCGGT
793	ATX-P-3408	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCCGGGGGAGGCTTAGTTCAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGCTATTGGATGCACTGGGTCCGCCAAGCTCCAGGGAA GGGGCTGGTGTGGGTCTCACATATTAATAGTGATGGGAGTAGC ACAAACTACGCGGACTCCGTGAAGGGCCGATTCACCATCTCCA GAGACAACGCCAAGAACACGCTGTATCTGCAGATGAACAGTC TGAGATCCGAGGACACGGCTGTATATTACTGTGCAAGAGAGG GTTACTGGAACGGTGATACTTTTGATATCTGGGGACAAGGGAC AATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTA TTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAG CCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGT TACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCA CACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
794	ATX-P-3410	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTGCCTACGACATGCACTGGGTCCGCCAAACTCCAGGAAA AGGTCTGGAGTGGGTCTCAACTATTGGTACTGCTGGTGACACA TACTATCCAGACTCCGTGAAGGGCCGATTCACCATCTCCAGAG ATTTTGCCAGGAGGTCCTTGTATCTTCACATGAACAATCTGAG AGCCGGGGACACGGCTGTATATTACTGTGCAAGAGGGGGCAG CAGCAGCTGGTACGACTGGTACTTCGATCTCTGGGGCCGTGGC ACCCTGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT

			AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
795	ATX-P-3412	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAGTAGTACCTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGGGAAATCTATCATAGTGGGAG CACCAACTATAACCCGTCCCTCAAGAGTCGAGTCACCATATCA CTAGACAAGTCCAAGAACCAGTTTTCCCTGAAGCTGAGCTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGATTAGTTT ATACAACTGGAACGATGCTGCTTTTGATATCTGGGGACAAGGG ACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
796	ATX-P-3413	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGTCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGACTTCTGGATACACGT TCACCGGCTACTATATGCACTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGG CACAACCTATGCACAGAAGTTTCAGGGCAGGGTCACCATGAC CAGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAACAG GCTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAGAGA GGCAGGTGGTTCAGGTGAATACTTCCAGCACTGGGGCCAGGG CACCCCGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCT GTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGA

			CAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCC AGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGT GCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGC CTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTC AGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAA AGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCA CACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCC AGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGA TCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTC CCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGT GTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAG TACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCA CCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAG CAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAG GCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGC CTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTG TCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGG AATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCAC CCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACT GACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAG TTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAG AAATCTCTTAGTCTTTCACCCGGT
797	ATX-P-3414	HC IgG1 Fc nt	CAGATCACCTTGAAGGAGTCTGGTCCTACGCTGGTGAAACCCA CACAGACCCTCACGCTGACCTGCACCTTCTCTGGGTTCTCACTC AGCACTAGTGGAGTGGGTGTGGGCTGGATCCGTCAGCCCCCA GGAAAGGCCCTGGAGTGGCTTGCACTCATTTATTGGAATGATG TTAAGTTCTACAGTCCATCTCTGCAGAGCAGGCTCACCATCAC CAAGGACACCTCCAAAAACCAGGTGGTCCTTACACTGACCAA CATGGACCCTGTGGACACAGCCACATATTACTGTGCACACGGG GATAACTGGAACTACCGTGCTTTTGATATCTGGGGACAAGGGA CAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT

798	ATX-P-3419	HC IgG1 Fc nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACACCT TTACCAGCTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAGCGCTTATAATGGTAA CACACACTATGCACAGAACCTCCAGGGCAGAGTCACCATGAC CACAGACACATCCACGAGCACAGCCTACATGGAGCTGAGGAG CCTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAGGAGT ATAGCAGCCCTTGACTTCTGGGGCCAGGGAACCCCGGTCACCG TCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGGCC CCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGGGT TGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAGTT GGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCTGC CGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGGTC ACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTGCA ATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACGCG TAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCCATG CCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTGTTC CCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGCCAG AGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCCCGA AGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACACAAT GCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACCTATC GTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGCTTAA CGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCACTTCC GGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCAACC AAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAGGAA ATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAGGTT TTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGGTCA GCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGATAG CGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATAAA TCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTATGC ATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGTCT TTCACCCGGT
799	ATX-P-3421	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGACTGGAGTGGATTGGACAAATCTATCATAGTGAAAA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTG TGACCGCCGCGGACACGGCCATCTATTACTGTGCGAGAGTGGA TGACTGGAACTACGGGGGTCACTTTGACTACTGGGGCCAGGG AACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCT GTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGA CAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCC AGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGT GCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGC CTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTC AGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAA AGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCA CACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCC AGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGA TCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTC CCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGT GTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAG TACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCA

			CCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAG CAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAG GCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGC CTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTG TCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGG AATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCAC CCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACT GACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAG TTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAG AAATCTCTTAGTCTTTCACCCGGT
800	ATX-P-3428	HC IgG1 Fc nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCT GGGGCCTCAGTTAAGGTCTCCTGCAAGGCTTCTGGTTACACCT TTACCGGCTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAGCGCTTACAATGGTAA CACACACTATGCACAGAACCTCCAGGGCAGAGTCACCATGAC CACCGACACATCCACGAACACAGCCTACATGGAGCTGAGGAG CCTTATATCTGACGACACGGCCTTTTATTATTGTGCGAGAGCG GGACTGGGGATCGACTACTGGGGCCAGGGAACCCTGGTCACT GTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGGC CCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGGG TTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAGTT GGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCTGC CGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGGTC ACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTGCA ATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACGCG TAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCCATG CCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTGTTC CCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGCCAG AGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCCCGA AGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACACAAT GCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACCTATC GTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGCTTAA CGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCACTTCC GGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCAACC AAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAGGAA ATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAGGTT TTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGGTCA GCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGATAG CGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATAAA TCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTATGC ATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGTCT TTCACCCGGT
801	ATX-P-3430	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAGTAGTGACTGGTGGAGTTGGGTCCGCCAGTCCCCAGG GAAGGGGCTGGAGTGGATTGGGGAAATCTATCATAGTGGGAG CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCTCCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGGG GGCACATAGGCTACTACTACATGGACGTCTGGGGCAAAGGGA CCACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC

			ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
802	ATX-P-3431	HC IgG1 Fc nt	GAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCC GGGGAGTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACAGCT TTACCAACTACTGGATCGGCTGGGTGCGCCAGATGCCCGGGAA AGGCCTGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGAT ACCATATACAGCCCGTCCTTCCAAGGCCAGGTCACCTTCTCAG CCGACAAGTCCATCAACACCGCCTACCTGCAGTGGAGCAGCCT GAAGGCCTCGGACACCGCCATGTATTACTGTGCGAGAGGACG TGGATATAGTGGCTACGAAGGTGCTTTTGATATCTGGGGACAA GGGACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTT CTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGG GACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAG CCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGT GTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
803	ATX-P-3435	HC IgG1 Fc nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACACCT

			TTACCAACTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAGCGCTTACAATGGTAA CACACACTATGCACAGAAACTCCAGGGCAGAGTCACCATGAC CACAGACACATCCACGAGCACAGCCTACATGGAGCTGAGGAG CCTGAGATCAGACGACACGGCCGTGTATTACTGTGCGAGAGC GGCAGCAGCCGTTGACTACTGGGGCCAGGGAACCCTGGTCAC CGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGG CCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGG GTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAG TTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCT GCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGG TCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTG CAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACG CGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCC ATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTG TTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGC CAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCC CGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACAC AATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACC TATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGC TTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCAC TTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCA ACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAG GAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAG GTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGG TCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGAT AGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATA AATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTAT GCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGT CTTTCACCCGGT
804	ATX-P-3436	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGTCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCAGTTGCACTGTCTCTGGTGGCTCCGT CAGCAGTGGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCA GGGAAGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGG AGCACCAAGTACAACCCCTCCCTCAAGAGTCGAGTCACCATAT CAGTAGACACGTCCAAGAACCAGGTCTCCCTGAAGCTGAGTTC TGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGAGAT AAGGGGCACTGGAACTACGGTGCTTTTGATATCTGGGGACAA GGGACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTT CTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGG GACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAG CCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGT GTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC

			AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
805	ATX-P-3437	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGGGAAATCTATCATAGTGGAAA TATTAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTGGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGGG GGGAATACGGTGACCCCGTGGGGTACTTCGATCTCTGGGGCCG TGGCACCCTGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCT TCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAG GGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGA GCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGG TGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
806	ATX-P-3440	HC IgG1 Fc nt	CAGGTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACACCT TTACCACCTATGGTATCAGCTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAGCGCTTACAGTGGTAA CACAAACTATGCACAGAAGCTCCAGGGCAGAGTCACCATGAC CACAGACACATCCACGAGCACAGCCTACATGGAGCTGAGGAG CCTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAGAGAG AGAGTCTCCAACTGGGTCTTTGACTTCTGGGGCCAGGGAACCC TGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTT CCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT

			ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
807	ATX-P-3442	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGTTCCAT CAGCAGTAGTGACTGGTGGAGCTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGGGAAATCTATCATAGTAGGAA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGTTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGTGGAG GTGTGGTGGCCGACTACTACATGGACGTCTGGGGCAAAGGGA CCACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
808	ATX-P-3444	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCCTGGTCAAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGCTATGGCATGAACTGGGTCCGCCAGGCTCCAGGGA AGGGGCTGGAGTGGGTCTCATCCATTAGTGGTTATGGTAGTTA

			CATATACTACGCAGCCTCAGTGAAGGGCCGATTCACCATCTCC AGAGACAGCGCCAAGAACTCACTGTATCTGCAAATGAACAGC CTGAGCGCCGAGGACACAGCTGTGTATTACTGTGCGAGAGAA TTAGGTGGGATCTACTACGGGGTAGGGTACTTCGATCTCTGGG GCCGTGGCACCCTGGTCACTGTCTCCTCAGCTAGCACTAAAGG GCCTTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGG GAGGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCC TGAGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAG TGGTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGT ATAGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGG CACTCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAAT ACAAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAA ACTCACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTG GTCCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCT AATGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGAC GTGTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTG ATGGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGG AGCAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGT CCTTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAA GGTAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCAT TTCCAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATAC TCTTCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCC CTTACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGT TGAATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAAC AACGCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTAT AGCAAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAAT GTATTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACT ACACGCAGAAATCTCTTAGTCTTTCACCCGGT
809	ATX-P-3447	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCGT CAGCAGTGGTAATTACTATTGGAGCTGGATCCGGCAGCCCCCA GGGAAGGGACTGGAGTGGATTGGGTATATCTATTCCAGTGGG AGCACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATAT CAATAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTC TGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGAAGT CCTCGTGGATACAGCTATGGTCCCTTTGCCTACTGGGGCCAGG GGACCCTGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTC TGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGG ACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGC CAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTG TGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAG CCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACT CAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAA AAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTC ACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCC CAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATG ATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGT CCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGG TGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCA GTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTC ACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAA GCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAA GGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCC GCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACG

			TGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATG GGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCC ACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAA CTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCA GTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCA GAAATCTCTTAGTCTTTCACCCGGT
810	ATX-P-3448	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCACAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCAT CAGCAGTGGTGGTTACAACTGGAACTGGATCCGCCAGCACCC AGGGAAGGGCCTGGAATGGATTGGGTACATCAATTACAGTGG GAATACCTATTACAACCCGTCCCTCAAGAGTCGAGTTACCATA TCAGTAGACACGTCTAAGAACCAGTTCTCCCTGAAGCTGAGTT CTGTGACTGCCGCGGACACGGCCGTTTATTACTGTGCGAGAGG GCCCCTGGATACAGCTATGGCCCCCTTTGACTACTGGGGCCAG GGAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTT CTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGG GACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAG CCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGT GTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
811	ATX-P-3449	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGTACTGTCTCTGGTGACTCCAT CAGTAGTTACTACTGGAGTTGGATCCGGCAGCCCCCAGGGAA GGGACTGGAGTGGATTGGATATATCTATTATAGTGGGTTCACC AAGTACAACCCCTCCCTCAAGAGTCGAGTCACCATTTCAGTAG ACACGTCCAAGAACCAGTTCTCCCTGAGGCTGAGCTCTGTGAC CGCTGCGGACACGGCCGTGTATTACTGTGCGAGCGTCGATTCA AAGTGGAACTACGGGTCTTTTCATATCTGGGGACAAGGGACA ATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTAT TTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGC CGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTT ACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCAC ACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA

			TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
812	ATX-P-3450	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGGCTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCTCTGTCTCTGGTGACTCCGT CAGCAATAATCGTTATTATTGGAGCTGGATTCGGCAGCCCCCA GGGAAGGGACTGGAGTGGATTGGGTATATCTATTACAGTGGG AGCACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATAT CAGTAGACACGTCCAAGAACCAGTTGTCCCTGAACCTGAGTTC TGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGAGAT CGCCCATCCCGGTATAAGTGGAATTACGATGCTTTTGCTATCT GGGGACAAGGGACAATGGTCACCGTCTCTTCAGCTAGCACTA AAGGGCCTTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGAC CTCGGGAGGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTAT TTCCCTGAGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGA CAAGTGGTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGG CTTGTATAGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGC TGGGCACTCAGACGTATATTTGCAATGTGAACCACAAACCTTC AAATACAAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGA TAAAACTCACACATGCCCGCCATGCCCGGCACCTGAACTGCTT GGTGGTCCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATA CTCTAATGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGT TGACGTGTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTAT GTTGATGGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCG AGGAGCAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGAC CGTCCTTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGC AAGGTAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACC ATTTCCAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTAT ACTCTTCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTAT CCCTTACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCT GTTGAATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAA ACAACGCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGT ATAGCAAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCA ATGTATTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCA CTACACGCAGAAATCTCTTAGTCTTTCACCCGGT
813	ATX-P-3451	HC IgG1 Fc nt	CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGGGTCCTT CAGTGATTACTACTGGACCTGGATCCGCCAGCCCCCAGGGAAG GGGCTGGAGTGGATTGGTGAAGTCAATCATATTGGAAGCACC AACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAG ACACGTCCAAGAACCAGTTCTCCCTGAACCTGAGCTCTGTGAC

			CGCCGCGGACACGGCTGTGTATTACTGTGCGAAGTATAGCACT TCCTGGTACGGCTGGTTCGACCCCTGGGGCCAGGGAACCCTGG TCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCC TTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCC CTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCG TAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGT TTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCT GTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATA TTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAA ACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCC GCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTC CTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTA CGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGA TCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTA CACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCG ACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATT GGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAG CACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAG GTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCG TGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTT AAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGA ACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCC TGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGT AGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCC GTTATGCATGAAGCGTTACATAATCACTACACGCAGAAATCTC TTAGTCTTTCACCCGGT
814	ATX-P-3453	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGGCTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCAT CAGCAGTAATAACTGGTGGAGTTGGTTCCGCCAGCCCCCAGGG AAGGGACTGGAGTGGATTGGGAGAATCTATCATAGTGGGACC ACCAACTACAACCCGTCCCTCGAGAGTCGAGTCACCATATCAG TAGACAACTCCAGGAACCAGTTCTCCCTGAAACTGAGCTCTGT GACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGCGA GGAGTGGGAGCTGCGGGGAGGTGTTTTTGATATCTGGGGACA AGGGACAATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCT TCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAG GGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGA GCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGG TGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG

			CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
815	ATX-P-3454	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAATCTGGGCCTGAGTTGAAGAAGCCT GGGGCCTCAGTAAAGGTTTCCTGCAAGGCTTCTGGATACACCT TCACTAACTATGCTGTGAATTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAACACCAACACTGGGCA CCCAACGTATGCCCAGGGCTTCACAGGACGGTTTGTCTTCTCC TTGGACACCTCTGTCAGTACGGCATATCTGCAGATCAGCAGCC TAAAGGCTGAGGACACTGCCGTTTATTACTGTGCGAGAGACAG CAGCAGCTGGGGCTACTGGGGCCAGGGAACCCTGGTCACTGT CTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGGCCC CGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGGGTT GCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAGTTG GAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCTGCC GTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGGTCA CTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTGCAA TGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACGCGT AGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCCATG CCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTGTTC CCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGCCAG AGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCCCGA AGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACACAAT GCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACCTATC GTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGCTTAA CGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCACTTCC GGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCAACC AAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAGGAA ATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAGGTT TTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGGTCA GCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGATAG CGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATAAA TCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTATGC ATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGTCT TTCACCCGGT
816	ATX-P-3455	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGACGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCAT CAGTAGTGATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGACTGGAGTGGATTGGGGAAATCTATCACAGTGAAAA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAGGCTGAACTCTG TGACCGCCGCGGACACGGCCATGTATTACTGTGCGAGAGGGA GGGAGCTAACTGGCCTCTTTGACTACTGGGGCCAGGGAACCCT GGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTT CCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC

			GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
817	ATX-P-3456	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGCAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG AAAGGGACTGGAATGGATTGGGGACATCTATCATAGTGGAAA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCCTATCA GTAGACATGTCCAAGAACCAGTTCTCCCTGAAACTGAACTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGAG GTATAGCAGTGACTGCCTACTTTGACTACTGGGGCCAGGGAAC CCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTA TTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAG CCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGT TACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCA CACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
818	ATX-P-3458	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCT TCACCGGCTACTATTTGCACTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAACCCTCACAGTGGTGG CACAATCTATGCACAGAAGTTTCAGGACAGGGTCACCATGACC AGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAGCAGG CTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAACTGGA ACTCCGGGGACTCCTACTACTACTACATGGACGTCTGGGGCAA

			AGGGACCACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCT TCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAG GGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGA GCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGG TGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATA GCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCAC TCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACA AAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACT CACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTC CCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAAT GATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTG TCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATG GTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGC AGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCT TCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGT AAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCC AAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTT CCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTA CGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAA TGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAACAACG CCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCA AACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTAT TCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACTACAC GCAGAAATCTCTTAGTCTTTCACCCGGT
819	ATX-P-3459	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGTTCCAT CAGCAGTGATAACTGGTGGAATTGGGTCCGCCAGCCCCCAGG GAAGGGGCTGGAGTGGATTGGAAAAATCTATCATAGTGGGAA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACGAGTCCAAGAACCAGTTCTCCCTGAGGCTGTACTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGGG TCGATTTTTGGAGTGGTTCCCACATGGACGTCTGGGGCAAAGG GACCACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCT GTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGA CAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCC AGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGT GCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGC CTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTC AGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAA AGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCA CACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCC AGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGA TCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTC CCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGT GTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAG TACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCA CCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAG CAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAG GCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGC CTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTG TCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGG AATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCAC CCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACT GACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAG

			TTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAG AAATCTCTTAGTCTTTCACCCGGT
820	ATX-P-3462	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT TAGCAGTAATAATTGGTGGAGTTGGGTCCGCCAGGCCCCAGG GAAGGGGCTGGAGTGGATTGGGAAGATCTATCAAAGTGGGAG CACCATGTACAACCCGTCCCTCAAGAGTCGAGTCACCATGTCG GTAGACAAGTCCAAGAACCAGTTCTCCCTGATTCTGAGTTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGATA AACCCCCTTTACTGGGAGCCTTTGACTACTGGGGCCAGGGAAC CCTGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTA TTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAG CCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGT TACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCA CACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
821	ATX-P-3463	HC IgG1 Fc nt	CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCT GGGAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGCTATGCCATGCACTGGGTCCGCCAGGCTCCAGGCAA GGGGCTGGAGTGGGTGGCAGTTATATCATATGATGGAAGTAA TAAATACTATGCGGACTCCGTGAAGGGCCGATTCACCATCTCC AGAGACAATTCCAAGAACACGCTGTCTCTGCAAATGAACAGC CTGAGAGCTGAGGACACGGCTGTGTATTACTGTGCGAAAAGG GGGGGATACAGCTATGGTCCTTTTGAACACTGGGGCCAGGGA ACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT

			AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
822	ATX-P-3466	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAATCTGGGTCTGAATTGAAGAAGCCTG GGGCCTCAGTGAAGGTTTCCTGCAAGGCTTCTGGATACACCTT CACTAGCTATACTATGAATTGGGTGCGACAGGCCCCTGGACAA GGGCTTGAGTGGGTGGGATGGATCAACACCGCCACTGGGACC CCAACGTATGCCCAGGGCTTCACAGGACGGTATGTCTTCTCCT TGGACACCTCTGTCAGCACGGCTTATCTGCAGATCAGCGGCCT AAAGGCTGAGGACACTGCCGTGTATTTCTGTGCGAGGTATAGT GGGAGCCACTCCTTTGACTACTGGGGCCAGGGAACCCTGGTCA CCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTG GCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTG GGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAA GTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCC TGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTG GTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTT GCAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAAC GCGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGC CATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCT GTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACG CCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATC CCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACA CAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGAC CTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGG CTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCA CTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTC AACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGA GGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAA GGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACG GTCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGG ATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGA TAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTT ATGCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTA GTCTTTCACCCGGT
823	ATX-P-3467	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGTAGTGATTACTGGTGGAGTTGGGTCCGCCAGTCCCCAGGG AAGGGGCTGGAGTGGATTGGGAAAATCTATCATAGTGGGAAC ACCAACCACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAA TAGACAAGTCCAGGAACCAGTTCTCCCTGAATCTGAACTCTGT GACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGAAGG ACTGGAACTTCCCCACATGGACGTCTGGGGCAAAGGGACCAC GGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTT CCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC

			GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
824	ATX-P-3468	HC IgG1 Fc nt	CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCCAGCCT GGGAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTAGTTATGCTATGCACTGGGTCCGCCAGGCTCCAGGCAA GGGGCTGGAGTGGGTGACAGTTATATCATATGATGGAAGTAA TAAATACTATGCAGACTCCGTGAAGGGCCGATTCACCATCTCC AGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGC CTGAGAGCTGAGGACACGGCTGTGTATTACTGTGCGAAAAGG GGTAACTGGAACTACGGACCTTTTCACTACTGGGGCCAGGGAA CCCTGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGT ATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACA GCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAG TTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGC ACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTC AGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGA CGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGT GGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACAC ATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGC GTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCA GCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCA CGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTA GAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTAC GCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT

825	ATX-P-3469	HC IgG1 Fc nt	CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCT GGGAGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TCAGTGCCTATGCCATCCACTGGGTCCGCCAGGCTCCAGGCAA GGGGCTGGAGTGGGTGGCAGTTATATCATATGATGGAAGTAA TAAAAAGTATGCAGACTCCGTGAAGGGCCGATTCACCATCTCC AGAGACAATTCCAAGAACACGCTGGATCTGGAAATGAACAGC CTGAGAGCTGAGGACACGGCTGTGTACTACTGTGCGAAAGGG CTACCTTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCT CCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGGCCCC GTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGGGTTG CCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAGTTGG AACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCTGCCG TCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGGTCACT GTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTGCAATG TGAACCACAAACCTTCAAATACAAAAGTGGATAAACGCGTAG AACCGAAATCGTGTGATAAAACTCACACATGCCCGCCATGCCC GGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTGTTCCCG CCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGCCAGAG GTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCCCGAAG TTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACACAATGC TAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACCTATCGT GTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGCTTAACG GCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCACTTCCGG CCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCAACCAA GAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAGGAAAT GACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAGGTTTT TATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGGTCAGC CGGAGAATAATTATAAAACAACGCCACCCGTCCTGGATAGCG ACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATAAATC ACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTATGCAT GAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGTCTTT CACCCGGT
826	ATX-P-3470	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAATCTGGGTCTGACTTGAAGAAGCCTG GGGCCTCAGTGAAGGTTTCCTGCAAGGCTTCTGGATACACCTT CACTAGTTATACTATGAATTGGGTGCGACAGGCCCCTGGACAA GGGCTTGAGTGGATGGGATGGATCAACACCAACACTGGGACC CCAACGTATGCCCAGGGCTTCACAGGACGGTTTGTCTTCTCCT TGGACACCTCTGTCAGCACGGCATATCTGCAGATCAGCAGCCT AAAGGCTGAGGACACTGCCGTGTATTACTGTACGAGGTATACT GGGAACTACTCCTTTGACTACTGGGGCCAGGGAACCCTGGTCA CCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTG GCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTG GGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAA GTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCC TGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTG GTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTT GCAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAAC GCGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGC CATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCT GTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACG CCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATC CCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACA CAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGAC CTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGG

			CTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCA CTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTC AACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGA GGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAA GGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACG GTCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGG ATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGA TAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTT ATGCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTA GTCTTTCACCCGGT
827	ATX-P-3471	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGTCTTGGTACAGCCT GGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCT TTAGGAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGA AGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGATAG CACATACTTCGCAGACTCCGTGAAGGGCCGGTTCACCATCTCC AGAGACAATTCCAAGAACACGCTGTCTCTGCAAATGAACAGC CTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAGCATCC TAGGATATTGTAGTGGTACCAGCTGCTATGGCCTCTTTGACAA CTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGCTAGCACT AAAGGGCCTTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGA CCTCGGGAGGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTA TTTCCCTGAGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTG ACAAGTGGTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGG GCTTGTATAGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCG CTGGGCACTCAGACGTATATTTGCAATGTGAACCACAAACCTT CAAATACAAAAGTGGATAAACGCGTAGAACCGAAATCGTGTG ATAAAACTCACACATGCCCGCCATGCCCGGCACCTGAACTGCT TGGTGGTCCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGAT ACTCTAATGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGG TTGACGTGTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTA TGTTGATGGTGTAGAGGTACACAATGCTAAGACTAAACCTCGC GAGGAGCAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGA CCGTCCTTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTG CAAGGTAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAAC CATTTCCAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTA TACTCTTCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTA TCCCTTACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGC TGTTGAATGGGAATCGAACGGTCAGCCGGAGAATAATTATAA AACAACGCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTG TATAGCAAACTGACTGTAGATAAATCACGGTGGCAGCAGGGC AATGTATTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATC ACTACACGCAGAAATCTCTTAGTCTTTCACCCGGT
828	ATX-P-3472	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGGCTCCAT CAGTAATGATAACTGGTGGAGTTGGGTCCGCCAGTCCCCCGGG AAGGGGCTGGAGTGGATTGGGAAAATCTATCATAGTGAGTTC ACCAACTACAACCCGTCCCTCAGGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAACCAGTTCTCCCTGGAGCTGACCTCTGT GACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGAGTA TCAGAACTACATGGACGTCTGGGGCAAAGGGACCACGGTCAC CGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGG CCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGG GTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAG TTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCT

			GCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGG TCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTG CAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACG CGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCC ATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTG TTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGC CAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCC CGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACAC AATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACC TATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGC TTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCAC TTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCA ACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAG GAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAG GTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGG TCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGAT AGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATA AATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTAT GCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGT CTTTCACCCGGT
829	ATX-P-3361	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGTTGTCTCTGGTGACTCCAT CAGCAGTAATAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGTCTGGAGTGGATTGGACAAATCTATCATAGTGGAAT CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGGAGCTGACCTCTG TGACCGCCGCGGACGCGGCCGTGTATTACTGTGCGAGGGCCCA GTGGGAACTACGAGCGGGCTGGTTCGACCCCTGGGGCCAGGG AACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCT GTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGA CAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCC AGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGT GCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGC CTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTC AGACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAA AGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCA CACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCC AGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGA TCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTC CCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGT GTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAG TACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCA CCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAG CAATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAG GCCAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGC CTTCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTG TCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGG AATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCAC CCGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACT GACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAG TTGCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAG AAATCTCTTAGTCTTTCACCCGGT
830	ATX-P-3366	HC IgG1 Fc nt	GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTAAGCCT GGGGGGACCCTTACACTCTCCTGTGCAGCCTCTGGATTCACTT

			TCAGTAACGCCTGGATGAGCTGGGTCCGCCAGGCTCCAGGGA AGGGGCTGGAGTGGGTTGGCCGTATTAAAAGCAAAACTGATG GCGGGACAACAGACTACGCTGCACCCGTGAAAGGCAGATTCA CCATCTCAAGAGATGATTCAAAAAACACGCTGTATCTGCAAAT GAACAGCCTGAAAACCGAGGACACAGCCGTGTATTACTGTAC CCCCCGGTACAACTCGGACTTTGACTACTGGGGCCAAGGAACC CTGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTATT TCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
831	ATX-P-3376	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCAT CAGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCCAGGGAA GGGACTGGAGTGGATTGGGTATATCTATTACAGTGGGTTCACC AAGTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAG ACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGAC CGCTGCGGACACGGCCGTGTATTACTGTGCGACCCACCCTCGT GGATACAACTATGGTCCCTTTGACTACTGGGGCCAGGGAACCC TGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTT CCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA

			AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
832	ATX-P-3377	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCGT CAACAGTGGTCGTTACTACTGGAGCTGGATCCGGCAGCCCCCA GGGAAGGGACTGGAGTGGATTGGGTATATCTATTCCAGTGGGT ACACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATGTT ACTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAACTCC GTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGGTCAC GTGGATACCGCTATGGTCCCTTTGACTACTGGGGCCAGGGAAC CCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTA TTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAG CCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGT TACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCA CACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
833	ATX-P-3418	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAATCTGGGTCTGAGTTGAAGAAGCCTG GGGCCTCAGTGAAGGTTTCCTGCGAGGCTTCTGGATACACCTT CACTAGCTATGCTATGAATTGGGTGCGACAGGCCCCTGGACAA GGGCTTGAGTGGATGGGATGGATCAACACCAACACTGGGACC CCAACTTATGCCCAGGGCTTCACAGGACGGTTTGTCTTCTCCTT GGACACCTCTGTCAGCACGGCATATCTGCAGATCAGCAGCCTA AAGGCTGAGGACACTGCCGTGTATTACTGTGCGAGTCATAGCA CCTCGTTTGACTACTGGGGCCAGGGGACCCTGGTCACCGTCTC CTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGGCCCCGT CCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGGGTTGCC TTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAGTTGGAA CAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCTGCCGTC CTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGGTCACTG TCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTGCAATGT

			GAACCACAAACCTTCAAATACAAAAGTGGATAAACGCGTAGA ACCGAAATCGTGTGATAAAACTCACACATGCCCGCCATGCCCG GCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTGTTCCCGC CGAAGCCTAAAGATACTCTAATGATCAGCCGTACGCCAGAGG TGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCCCGAAGT TAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACACAATGCT AAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACCTATCGT GTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGCTTAACG GCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCACTTCCGG CCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCAACCAA GAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAGGAAAT GACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAGGTTTT TATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGGTCAGC CGGAGAATAATTATAAAACAACGCCACCCGTCCTGGATAGCG ACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATAAATC ACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTATGCAT GAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGTCTTT CACCCGGT
834	ATX-P-3420	HC IgG1 Fc nt	CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCGCTGTCCATGGTGGGTCCT TCAGTGATTACTACTTGACCTGGATTCGCCAGCCCCCAGGGAA GGGGCTGGAGTGGATTGGGGAAATCAATCATAGTGGAAGCAC CAACTACAACCCCTCCCTCAAGAGTCGAGTCACCTTATCAATA GACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGA CCGCCGCGGACACGGCTGTGTATTACTGTGCGAGAGGTAGTGA AGACTACTACTATTACATGGACGTCTGGGGCAAAGGGACCAC GGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTT CCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCC GCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTA CCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACA CGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGC TCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGT ATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTGGA TAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACATG CCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTG TTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCC GTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGA AGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAG GTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCC TCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAG ATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATA AAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCA AAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTC TCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCTG GTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAAT CGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCCG TCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGAC TGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTGC TCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAAT CTCTTAGTCTTTCACCCGGT
835	ATX-P-3426	HC IgG1 Fc nt	GAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCC GGGGAGTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACATCT TTACCAGCTACTGGATCGGCTGGGTGCGCCAGATGCCCGGGAA AGGCCTGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGAT

			ACCAGATACAGCCCGTCTTTCCAAGGCCAGGTCACCATCTCAG CCGACAAGTCCATCATCACCGCCTACCTGCAGTGGAGCAGCCT GAAGGCCTCGGACACCGCCATGTATTACTGTGCGAGACACGA CTACTTTGATATTGGAGGTTATTTTGACTACTGGGGCCAGGGA ACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
836	ATX-P-3432	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTGATGGATACACCT TCACCGACTACTATATGCACTGGGTGCGACAGGCCCCTGGACA AGGGCATGAGTGGATGGGATGGATCAACCCTAACAGTGGTGT CACATACTATGCACAGAAGTTTCAGGGCAGGGTCACCATGACC AGGGACACGTCCATCAGCACAGCCTACATGGAGCTGAACAGA CTTAGATCTGACGACACGGCCGTGTATTACTGTGCGAGAGATC GGACCTTCTACTTTGACTACTGGGGCCAGGGAACCCTGGTCAC TGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTATTTCCCTTGG CCCCGTCCAGCAAATCGACCTCGGGAGGGACAGCCGCCCTGG GTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTTACCGTAAG TTGGAACAGTGGGGCGCTGACAAGTGGTGTGCACACGTTTCCT GCCGTCCTGCAATCATCGGGCTTGTATAGCCTCAGCTCTGTGG TCACTGTCCCAAGTTCATCGCTGGGCACTCAGACGTATATTTG CAATGTGAACCACAAACCTTCAAATACAAAAGTGGATAAACG CGTAGAACCGAAATCGTGTGATAAAACTCACACATGCCCGCC ATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCGTGTTCCTG TTCCCGCCGAAGCCTAAAGATACTCTAATGATCAGCCGTACGC CAGAGGTGACATGTGTCGTGGTTGACGTGTCCCACGAAGATCC CGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAGAGGTACAC AATGCTAAGACTAAACCTCGCGAGGAGCAGTACGCCTCGACC TATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCAAGATTGGC TTAACGGCAAAGAATATAAGTGCAAGGTAAGCAATAAAGCAC TTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCCAAAGGTCA ACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTTCTCGTGAG GAAATGACTAAAAATCAAGTATCCCTTACGTGTCTGGTTAAAG

			GTTTTTATCCTAGCGATATTGCTGTTGAATGGGAATCGAACGG TCAGCCGGAGAATAATTATAAAACAACGCCACCCGTCCTGGAT AGCGACGGCTCATTTTTTCTGTATAGCAAACTGACTGTAGATA AATCACGGTGGCAGCAGGGCAATGTATTCAGTTGCTCCGTTAT GCATGAAGCGTTACATAATCACTACACGCAGAAATCTCTTAGT CTTTCACCCGGT
837	ATX-P-3433	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCT TCACCGACTACTATATGCACTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAACCCTAACAATGGTGG CACAGACTATGCACAGAAGTTTCAGGGCAGGGTCACCATGAC CAGGGACACGTCCATCAGCACAGCCTACATGGAGTTACACAG GCTAAGATCTGACGACACGGCCGTGTATTTCTGTGCGAGAGGG GTCTATGATGTAGTAGTTCCAACTGCTATCGTCAACTGGTTCG ACCCCTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGCTAG CACTAAAGGGCCTTCTGTATTTCCCTTGGCCCCGTCCAGCAAA TCGACCTCGGGAGGGACAGCCGCCCTGGGTTGCCTTGTGAAAG ATTATTTCCCTGAGCCAGTTACCGTAAGTTGGAACAGTGGGGC GCTGACAAGTGGTGTGCACACGTTTCCTGCCGTCCTGCAATCA TCGGGCTTGTATAGCCTCAGCTCTGTGGTCACTGTCCCAAGTTC ATCGCTGGGCACTCAGACGTATATTTGCAATGTGAACCACAAA CCTTCAAATACAAAAGTGGATAAACGCGTAGAACCGAAATCG TGTGATAAAACTCACACATGCCCGCCATGCCCGGCACCTGAAC TGCTTGGTGGTCCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAA AGATACTCTAATGATCAGCCGTACGCCAGAGGTGACATGTGTC GTGGTTGACGTGTCCCACGAAGATCCCGAAGTTAAGTTCAATT GGTATGTTGATGGTGTAGAGGTACACAATGCTAAGACTAAACC TCGCGAGGAGCAGTACGCCTCGACCTATCGTGTCGTGAGCGTT CTGACCGTCCTTCACCAAGATTGGCTTAACGGCAAAGAATATA AGTGCAAGGTAAGCAATAAAGCACTTCCGGCCCCAATCGAGA AAACCATTTCCAAGGCCAAAGGTCAACCAAGAGAACCCCAGG TGTATACTCTTCCGCCTTCTCGTGAGGAAATGACTAAAAATCA AGTATCCCTTACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATA TTGCTGTTGAATGGGAATCGAACGGTCAGCCGGAGAATAATTA TAAAACAACGCCACCCGTCCTGGATAGCGACGGCTCATTTTTT CTGTATAGCAAACTGACTGTAGATAAATCACGGTGGCAGCAG GGCAATGTATTCAGTTGCTCCGTTATGCATGAAGCGTTACATA ATCACTACACGCAGAAATCTCTTAGTCTTTCACCCGGT
838	ATX-P-3438	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGACTCCAT CAGCAATGATTACTGGTGGAATTGGGTCCGCCAGCCCCCAGGG AAGGGTCTGGAGTGGATTGGAGAAATCTATCATAGTGGGCAC ACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAG TAGACAAGTCCAAGAACCAGTTGTCCCTGAAGCTGACCTCTGT GAACGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGTGG AACTGAAATTACGGGGTACATGGACGTCTGGGGCAAAGGGAC CACGGTCACCGTCTCCTCAGCTAGCACTAAAGGGCCTTCTGTA TTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAG CCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGT TACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCA CACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA

			TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
839	ATX-P-3441	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTGCCTCCAT CAGAAGTGGTCACTGGTGGAGTTGGGTCCGCCAGCCCCCAGG GAAGGGACTGGAGTGGATTGGGGAAATCTATCATAGTGGGAA CACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCCTATCA GTAGACAAGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTG TGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGTCA CTACGGTGACTACGTCGTCTACTTTGACTACTGGGGCCAGGGA ACCCTGGTCACTGTCTCCTCAGCTAGCACTAAAGGGCCTTCTG TATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGAC AGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCA GTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTG CACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCT CAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAG ACGTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAG TGGATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACA CATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAG CGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATC AGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCC ACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGT AGAGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTA CGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACC AAGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCA ATAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGC CAAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCT TCTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTC TGGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGA ATCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACC CGTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTG ACTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTT GCTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAA ATCTCTTAGTCTTTCACCCGGT
840	ATX-P-3446	HC IgG1 Fc nt	CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCT TCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCAT CAGTAGTTACTATTGGAGCTGGATCCGGCAGCCCCCAGGGAA GGGACTGGAATGGATTGGTTATGTCTATTACAGTGGGTACACC AAGTACAATCCCTCCCTCAAGAGTCGAGTCACCATATCAATAG ACGCGTCCAAGAACCAGTTCTCCCTGAAGCTGACCTCTGTGAC

			CGCTGCGGACACGGCCGTGTATTACTGTGCGACCGTCGAATCA AAGTGGAACTACGGGCCTTTTGCTATCTGGGGACAAGGGACA ATGGTCACCGTCTCTTCAGCTAGCACTAAAGGGCCTTCTGTAT TTCCCTTGGCCCCGTCCAGCAAATCGACCTCGGGAGGGACAGC CGCCCTGGGTTGCCTTGTGAAAGATTATTTCCCTGAGCCAGTT ACCGTAAGTTGGAACAGTGGGGCGCTGACAAGTGGTGTGCAC ACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGTATAGCCTCA GCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGGCACTCAGAC GTATATTTGCAATGTGAACCACAAACCTTCAAATACAAAAGTG GATAAACGCGTAGAACCGAAATCGTGTGATAAAACTCACACA TGCCCGCCATGCCCGGCACCTGAACTGCTTGGTGGTCCCAGCG TGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCTAATGATCAG CCGTACGCCAGAGGTGACATGTGTCGTGGTTGACGTGTCCCAC GAAGATCCCGAAGTTAAGTTCAATTGGTATGTTGATGGTGTAG AGGTACACAATGCTAAGACTAAACCTCGCGAGGAGCAGTACG CCTCGACCTATCGTGTCGTGAGCGTTCTGACCGTCCTTCACCA AGATTGGCTTAACGGCAAAGAATATAAGTGCAAGGTAAGCAA TAAAGCACTTCCGGCCCCAATCGAGAAAACCATTTCCAAGGCC AAAGGTCAACCAAGAGAACCCCAGGTGTATACTCTTCCGCCTT CTCGTGAGGAAATGACTAAAAATCAAGTATCCCTTACGTGTCT GGTTAAAGGTTTTTATCCTAGCGATATTGCTGTTGAATGGGAA TCGAACGGTCAGCCGGAGAATAATTATAAAACAACGCCACCC GTCCTGGATAGCGACGGCTCATTTTTTCTGTATAGCAAACTGA CTGTAGATAAATCACGGTGGCAGCAGGGCAATGTATTCAGTTG CTCCGTTATGCATGAAGCGTTACATAATCACTACACGCAGAAA TCTCTTAGTCTTTCACCCGGT
841	ATX-P-3452	HC IgG1 Fc nt	CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCT GGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGATACACCT TCACCGGCTACTATATGAACTGGGTGCGACAGGCCCCTGGACA AGGGCTTGAGTGGATGGGATGGATCAACCCTAACAGTGGTGC CACAAACTATGCACAGAAGTTTCAGGGCAGGGTCACCATGAC CAGGGACACGTCCATCAGCACAGACTACATGGAACTGAGCAG GCTGAGATCTGACGACACGGCCGTTTATTACTGTGCGAGAGAT GGGGCTAAGTGGAATCACGAGGGTTACTACTTTGACTACTGGG GCCAGGGAACCCTGGTCACCGTCTCCTCAGCTAGCACTAAAGG GCCTTCTGTATTTCCCTTGGCCCCGTCCAGCAAATCGACCTCGG GAGGGACAGCCGCCCTGGGTTGCCTTGTGAAAGATTATTTCCC TGAGCCAGTTACCGTAAGTTGGAACAGTGGGGCGCTGACAAG TGGTGTGCACACGTTTCCTGCCGTCCTGCAATCATCGGGCTTGT ATAGCCTCAGCTCTGTGGTCACTGTCCCAAGTTCATCGCTGGG CACTCAGACGTATATTTGCAATGTGAACCACAAACCTTCAAAT ACAAAAGTGGATAAACGCGTAGAACCGAAATCGTGTGATAAA ACTCACACATGCCCGCCATGCCCGGCACCTGAACTGCTTGGTG GTCCCAGCGTGTTCCTGTTCCCGCCGAAGCCTAAAGATACTCT AATGATCAGCCGTACGCCAGAGGTGACATGTGTCGTGGTTGAC GTGTCCCACGAAGATCCCGAAGTTAAGTTCAATTGGTATGTTG ATGGTGTAGAGGTACACAATGCTAAGACTAAACCTCGCGAGG AGCAGTACGCCTCGACCTATCGTGTCGTGAGCGTTCTGACCGT CCTTCACCAAGATTGGCTTAACGGCAAAGAATATAAGTGCAA GGTAAGCAATAAAGCACTTCCGGCCCCAATCGAGAAAACCAT TTCCAAGGCCAAAGGTCAACCAAGAGAACCCCAGGTGTATAC TCTTCCGCCTTCTCGTGAGGAAATGACTAAAAATCAAGTATCC CTTACGTGTCTGGTTAAAGGTTTTTATCCTAGCGATATTGCTGT TGAATGGGAATCGAACGGTCAGCCGGAGAATAATTATAAAAC

			AACGCCACCCGTCCTGGATAGCGACGGCTCATTTTTTCTGTAT AGCAAACTGACTGTAGATAAATCACGGTGGCAGCAGGGCAAT GTATTCAGTTGCTCCGTTATGCATGAAGCGTTACATAATCACT ACACGCAGAAATCTCTTAGTCTTTCACCCGGT
842	ATX-P-3360	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISINNWWSWVRQPPGK GLEWLGKIYHSGNTDYNPSLKSRVTISVDKSKNQFSLRLSSVTAA DTAVYYCASGSDYDFWSGYLDYWGQGTLVTVSSASTKGPSVFP LAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPA VLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEP KSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVV VDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVL TVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYT LPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTP PVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
843	ATX-P-3362	HC IgG1-Fc aa	EVQLVESGGGLVQPGRSLRLSCAASGFTFDDYAMHWVRQAPGK GLEWVSGISWNSGSIAYADSVKGRFTISRDNAKNSLYLQMNSLR VEDTAFFYCARVAAAAGIPFFDYWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
844	ATX-P-3363	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLTLTCAVSGGSINRDNWWSWVRQPPGK GLEWIGQIYQSGSTNYNPSLKSRVTISVDKSKNQFSLKLSSVTAAD TAVYYCARVYDWNYGGHFDYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
845	ATX-P-3365	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISSNNWWSWVRQPPGK GLEWIGQIYHSGHTNYNPSLKSRVTISVDMSKNQFSLKLTSVTAA DTAVYYCARGATEILGYFDLWGRGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
846	ATX-P-3367	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGGSVSSGSYYWSWIRQPPGK GLEWIGYIYKSGFTNYNPSLKSRVTISVDTSKNQFSLKLSSVTAAD TAVYYCAIGGRGYSYGPFDYWGQGTLVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD

			VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
847	ATX-P-3369	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYLHWVRQAPGQ GLEWMGWINPNSGDTNYVQNFQGRVTMTRDTSISTAYMELSRL RSDDTAVYYCARSYVDTSSSAFDIWGQGTMVTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFP AVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVE PKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSV LTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
848	ATX-P-3370	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPPGKGL EWIGYVYYSGYTKYNPSLKSRVTISVDTPKTQFSLKMSSVTAADT AVYYCASVESKWNYGPFDIWGQGTMVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
849	ATX-P-3371	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGDSISSYYWSWIRQPPGKGL EWIGYIYYSGFTKYNPSLNSRVTISVDTSKSQFSLKLTSVTAADTA VYYCAMREPRGRYNWNYGPFDIWGQGTMVTVSSASTKGPSVFP LAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPA VLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEP KSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVV VDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVL TVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYT LPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTP PVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
850	ATX-P-3373	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQPPGK GLEWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELNSVTAAD TAVYYCAREYHNFMDVWCKGTTVTVSSASTKGPSVFPLAPSSKS TSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSG LYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKT HTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHE DPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLHQD WLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREE MTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP G
851	ATX-P-3375	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGDSVSSGKYFWSWIRQSPGK GLEWIGYIYYSGSTNYNPSLKNRVTISVDTSKKELSLKLSSVTAAD TAVYYCARGGHNWNYAAFDIWGQGTMVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS

			CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
852	ATX-P-3378	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGK GLEWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELSSVAAAD TAVYYCAREYENFMDVWGKGTTVTVSSASTKGPSVFPLAPSSKS TSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSG LYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKT HTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHE DPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLHQD WLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREE MTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP G
853	ATX-P-3382	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISSNSWWNWVRQPPGK GLEWIGQIFHSGHTNYNPSLKSRVTMSIDKSKNQFSLKLTSVTAA DTALYYCARGGEYENSANWFDPWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
854	ATX-P-3383	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGVSINKDNWWTWVRQPPG KGLEWIGKIYHSGSTNYNPSLKSRVTISVDNSKNQFSLKLNSVTA ADTAVYYCTRGGDIAMEGDWFAPWGQGTLVTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFP AVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVE PKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSV LTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
855	ATX-P-3384	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSDNWWNWVRQPPGK GLEWLGKIYHSGNTDYNPSLKSRVTISVDKSKNQFSLRLSSVTAA DTAVYYCARGGTETTGYMDVWGKGTTVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
856	ATX-P-3386	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQPPGK GLEWIGKIYHSGFTNYNPSLKSRVTISVDKSKNQFSLKLNSVTAA DTAVYYCARGGDNFMEGEGLGTWGPGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV

			LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
857	ATX-P-3387	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWNWVRQSPGK GLEWIGKIYHSGFTDYNPSLKSRVTISVDKSKNQFSLKLSSVTAAD TAVYYCARGNHNYLWIGYLGTWGPGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
858	ATX-P-3389	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLICAVSGGSISSSNWWSWVRQPPGKG LEWIGRIYHSGHTNYNPSLKSRVTISVDKSKNQFSLKLTSVTAAD TAVYYCARGRDLTGYFDYWGQGTLVTVSSASTKGPSVFPLAPSS KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
859	ATX-P-3391	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGK GLEWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELSSVTAAD TAVYYCARGVDFWSGSHMDVWGKGTTVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
860	ATX-P-3392	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGK GLEWIGKIYHSEFTNYNPSLKSRVTISVDKSKNQFSLELSSVTAAD TAVYFCAREGLELPHMDVWGKGTTVTVSSASTKGPSVFPLAPSS KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
861	ATX-P-3395	HC IgG1-Fc aa	EVQLVESGGGVVKPGGSLRLSCAASGFTFSSYWMHWVRQAPGK GLVWVSRINSDGSSTSYADSVQGRFTISRDIAKNTLYLQMNSLRA EDTAVYYCARGQHLVQDYWGQGTLVTVSSASTKGPSVFPLAPSS

			KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
862	ATX-P-3396	HC IgG1-Fc aa	QVQLVQSGAEVKNPGASVKVSCKASGYTFTGYYMHWVRQAPG QGLEWMGWINPNSGGTNYAQKFQGRVTMTRDTSISTAYMELSR LRSDDTAVYYCARERGDYDGDAFDIWGQGTMVTVSSASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHT FPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKR VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVT CVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVV SVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQ VYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY KTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNH YTQKSLSLSPG
863	ATX-P-3397	HC IgG1-Fc aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSNYYMNWVRQAPGK GLEWVANIKQDGSEKYYVDSVKGRFTISRDNAKNSLYLQMNSLR AEDTAVYYCARDGYYNFDAFDIWGQGTMVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
864	ATX-P-3405	HC IgG1-Fc aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYSMNWVRQAPGKG LEWVSSISSSSSYIYYADSVKGRFTISRDNAKNSLYLQMNSLRAED TAVYYCAREGYDNWNSACDIWGQGTMVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
865	ATX-P-3406	HC IgG1-Fc aa	QITLKESGPTLVKPTQTLTLTCTFSGFSLSTSGVGVGWIRQPPGKA LEWLALIYWNGDERYSPSLKSRLTITKDTSKNQVVLTMTNMDPV DTATYYCAHSPNWGYEAFDIWGQGTMVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
866	ATX-P-3407	HC IgG1-Fc aa	EVQLVESGGGLVPPGGSLRLSCAASGFTFSSYCMNWVRQAPGKG LEWVSSINSDSSYIYYADSVKGRFTISRDNAKNSLYLQMNSLRAE

			DTAVYYCAREGYYNWNGGNDYWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
867	ATX-P-3408	HC IgG1-Fc aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSSYWMHWVRQAPGK GLVWVSHINSDGSSTNYADSVKGRFTISRDNAKNTLYLQMNSLR SEDTAVYYCAREGYWNGDTFDIWGQGTMVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
868	ATX-P-3410	HC IgG1-Fc aa	EVQLVESGGGLVQPGGSLRLSCAASGFTFSAYDMHWVRQTPGK GLEWVSTIGTAGDTYYPDSVKGRFTISRDFARRSLYLHMNNLRA GDTAVYYCARGGSSSWYDWYFDLWGRGTLVTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFP AVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVE PKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSV LTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
869	ATX-P-3412	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSSTWWSWVRQPPGK GLEWIGEIYHSGSTNYNPSLKSRVTISLDKSKNQFSLKLSSVTAAD TAVYYCAISLYNWNDAAFDIWGQGTMVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
870	ATX-P-3413	HC IgG1-Fc aa	QVQLVQSGSEVKKPGASVKVSCKTSGYTFTGYYMHWVRQAPGQ GLEWMGWINPNSGGTTYAQKFQGRVTMTRDTSISTAYMELNRL RSDDTAVYYCAREAGGSGEYFQHWGQGTPVTVSSASTKGPSVFP LAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPA VLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEP KSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVV VDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVL TVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYT LPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTP PVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG

871	ATX-P-3414	HC IgG1-Fc aa	QITLKESGPTLVKPTQTLTLTCTFSGFSLSTSGVGVGWIRQPPGKA LEWLALIYWNDVKFYSPSLQSRLTITKDTSKNQVVLTLTNMDPV DTATYYCAHGDNWNYRAFDIWGQGTMVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
872	ATX-P-3419	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQAPGQ GLEWMGWISAYNGNTHYAQNLQGRVTMTTDTSTSTAYMELRSL RSDDTAVYYCARSIAALDFWGQGTPVTVSSASTKGPSVFPLAPSS KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
873	ATX-P-3421	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQPPGK GLEWIGQIYHSENTNYNPSLKSRVTISVDKSKNQFSLKLSSVTAA DTAIYYCARVDDWNYGGHFDYWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
874	ATX-P-3428	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYGISWVRQAPGQ GLEWMGWISAYNGNTHYAQNLQGRVTMTTDTSTNTAYMELRS LISDDTAFYYCARAGLGIDYWGQGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
875	ATX-P-3430	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSSDWWSWVRQSPGK GLEWIGEIYHSGSTNYNPSLKSRVSISVDKSKNQFSLKLSSVTAAD TAVYYCARGGHIGYYYMDVWGKGTTVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL

			DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
876	ATX-P-3431	HC IgG1-Fc aa	EVQLVQSGAEVKKPGESLKISCKGSGYSFTNYWIGWVRQMPGKG LEWMGIIYPGDSDTIYSPSFQGQVTFSADKSINTAYLQWSSLKASD TAMYYCARGRGYSGYEGAFDIWGQGTMVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
877	ATX-P-3435	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTNYGISWVRQAPGQ GLEWMGWISAYNGNTHYAQKLQGRVTMTTDTSTSTAYMELRSL RSDDTAVYYCARAAAAVDYWGQGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
878	ATX-P-3436	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLSCTVSGGSVSSGSYYWSWIRQPPGK GLEWIGYIYYSGSTKYNPSLKSRVTISVDTSKNQVSLKLSSVTAA DTAVYYCARDKGHWNYGAFDIWGQGTMVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
879	ATX-P-3437	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQPPGK GLEWIGEIYHSGNINYNPSLKSRVTISVDKSKNQFSLKLSSVTAAD TAVYYCARGGEYGDPVGYFDLWGRGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
880	ATX-P-3440	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQAPGQ GLEWMGWISAYSGNTNYAQKLQGRVTMTTDTSTSTAYMELRSL RSDDTAVYYCARERVSNWVFDFWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL

			PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
881	ATX-P-3442	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSSDWWSWVRQPPGK GLEWIGEIYHSRNTNYNPSLKSRVTISVDKSKNQFSLKLSSVTAAD TAVYYCASGGVVADYYMDVWGKGTTVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
882	ATX-P-3444	HC IgG1-Fc aa	EVQLVESGGGLVKPGGSLRLSCAASGFTFSSYGMNWVRQAPGK GLEWVSSISGYGSYIYYAASVKGRFTISRDSAKNSLYLQMNSLSA EDTAVYYCARELGGIYYGVGYFDLWGRGTLVTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFP AVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVE PKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSV LTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
883	ATX-P-3447	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCAVSGGSVSSGNYYWSWIRQPPG KGLEWIGYIYSSGSTNYNPSLKSRVTISIDTSKNQFSLKLSSVTAA DTAVYYCARSPRGYSYGPFAYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
884	ATX-P-3448	HC IgG1-Fc aa	QVQLQESGPGLVKPSQTLSLTCTVSGGSISSGGYNWNWIRQHPGK GLEWIGYINYSGNTYYNPSLKSRVTISVDTSKNQFSLKLSSVTAA DTAVYYCARGPLDTAMAPFDYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
885	ATX-P-3449	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGDSISSYYWSWIRQPPGKGL EWIGYIYYSGFTKYNPSLKSRVTISVDTSKNQFSLRLSSVTAADTA VYYCASVDSKWNYGSFHIWGQGTMVTVSSASTKGPSVFPLAPSS KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH

			QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
886	ATX-P-3450	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCSVSGDSVSNNRYYWSWIRQPPGK GLEWIGYIYYSGSTNYNPSLKSRVTISVDTSKNQLSLNLSSVTAAD TAVYYCARDRPSRYKWNYDAFAIWGQGTMVTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFP AVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVE PKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSV LTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVY TLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
887	ATX-P-3451	HC IgG1-Fc aa	QVQLQQWGAGLLKPSETLSLTCAVYGGSFSDYYWTWIRQPPGK GLEWIGEVNHIGSTNYNPSLKSRVTISVDTSKNQFSLNLSSVTAAD TAVYYCAKYSTSWYGWFDPWGQGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
888	ATX-P-3453	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISSNNWWSWFRQPPGK GLEWIGRIYHSGTTNYNPSLESRVTISVDNSRNQFSLKLSSVTAAD TAVYYCARGEEWELRGGVFDIWGQGTMVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
889	ATX-P-3454	HC IgG1-Fc aa	QVQLVQSGPELKKPGASVKVSCKASGYTFTNYAVNWVRQAPGQ GLEWMGWINTNTGHPTYAQGFTGRFVFSLDTSVSTAYLQISSLK AEDTAVYYCARDSSSWGYWGQGTLVTVSSASTKGPSVFPLAPSS KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
890	ATX-P-3455	HC IgG1-Fc aa	QVQLQESGPGLVTPSGTLSLTCAVSGDSISSDNWWSWVRQPPGK GLEWIGEIYHSENTNYNPSLKSRVTISVDKSKNQFSLRLNSVTAA DTAMYYCARGRELTGLFDYWGQGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV

			SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
891	ATX-P-3456	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQPPGK GLEWIGDIYHSGNTNYNPSLKSRVTLSVDMSKNQFSLKLNSVTA ADTAVYYCARGGIAVTAYFDYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
892	ATX-P-3458	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYLHWVRQAPGQ GLEWMGWINPHSGGTIYAQKFQDRVTMTRDTSISTAYMELSRLR SDDTAVYYCANWNSGDSYYYYMDVWGKGTTVTVSSASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHT FPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKR VEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVT CVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVV SVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQ VYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY KTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNH YTQKSLSLSPG
893	ATX-P-3459	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSDNWWNWVRQPPGK GLEWIGKIYHSGNTNYNPSLKSRVTISVDESKNQFSLRLYSVTAA DTAVYYCARGVDFWSGSHMDVWGKGTTVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
894	ATX-P-3462	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSNNWWSWVRQAPGK GLEWIGKIYQSGSTMYNPSLKSRVTMSVDKSKNQFSLILSSVTAA DTAVYYCARDKPPLLGAFDYWGQGTLVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
895	ATX-P-3463	HC IgG1-Fc aa	QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYAMHWVRQAPGK GLEWVAVISYDGSNKYYADSVKGRFTISRDNSKNTLSLQMNSLR AEDTAVYYCAKRGGYSYGPFEHWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK

			SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
896	ATX-P-3466	HC IgG1-Fc aa	QVQLVQSGSELKKPGASVKVSCKASGYTFTSYTMNWVRQAPGQ GLEWVGWINTATGTPTYAQGFTGRYVFSLDTSVSTAYLQISGLK AEDTAVYFCARYSGSHSFDYWGQGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
897	ATX-P-3467	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISSDYWWSWVRQSPGK GLEWIGKIYHSGNTNHNPSLKSRVTISIDKSRNQFSLNLNSVTAAD TAVYYCAREGLELPHMDVWGKGTTVTVSSASTKGPSVFPLAPSS KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
898	ATX-P-3468	HC IgG1-Fc aa	QVQLVESGGGLVQPGRSLRLSCAASGFTFSSYAMHWVRQAPGK GLEWVTVISYDGSNKYYADSVKGRFTISRDNSKNTLYLQMNSLR AEDTAVYYCAKRGNWNYGPFHYWGQGTLVTVSSASTKGPSVFP LAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPA VLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEP KSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVV VDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVL TVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYT LPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTP PVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQ KSLSLSPG
899	ATX-P-3469	HC IgG1-Fc aa	QVQLVESGGGVVQPGRSLRLSCAASGFTFSAYAIHWVRQAPGKG LEWVAVISYDGSNKKYADSVKGRFTISRDNSKNTLDLEMNSLRA EDTAVYYCAKGLPFDYWGQGTLVTVSSASTKGPSVFPLAPSSKST SGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGL YSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTH TCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHED PEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLHQD WLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREE MTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP G
900	ATX-P-3470	HC IgG1-Fc aa	QVQLVQSGSDLKKPGASVKVSCKASGYTFTSYTMNWVRQAPGQ GLEWMGWINTNTGTPTYAQGFTGRFVFSLDTSVSTAYLQISSLKA EDTAVYYCTRYTGNYSFDYWGQGTLVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ

			SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
901	ATX-P-3471	HC IgG1-Fc aa	EVQLVESGGVLVQPGGSLRLSCAASGFTFRSYAMSWVRQAPGKG LEWVSAISGSGDSTYFADSVKGRFTISRDNSKNTLSLQMNSLRAE DTAVYYCASILGYCSGTSCYGLFDNWGQGTLVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTF PAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRV EPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTC VVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVS VLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQV YTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYK TTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY TQKSLSLSPG
902	ATX-P-3472	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGGSISNDNWWSWVRQSPGK GLEWIGKIYHSEFTNYNPSLRSRVTISVDKSKNQFSLELTSVTAAD TAVYYCAREYQNYMDVWGKGTTVTVSSASTKGPSVFPLAPSSKS TSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSG LYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKT HTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHE DPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLHQD WLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREE MTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP G
903	ATX-P-3361	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCVVSGDSISSNNWWSWVRQPPGK GLEWIGQIYHSGITNYNPSLKSRVTISVDKSKNQFSLELTSVTAAD AAVYYCARAQWELRAGWFDPWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
904	ATX-P-3366	HC IgG1-Fc aa	EVQLVESGGGLVKPGGTLTLSCAASGFTFSNAWMSWVRQAPGK GLEWVGRIKSKTDGGTTDYAAPVKGRFTISRDDSKNTLYLQMNS LKTEDTAVYYCTPRYNSDFDYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
905	ATX-P-3376	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPPGKGL EWIGYIYYSGFTKYNPSLKSRVTISVDTSKNQFSLKLSSVTAADTA VYYCATHPRGYNYGPFDYWGQGTLVTVSSASTKGPSVFPLAPSS

			KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQS SGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCD KTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS HEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLH QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSR EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLD SDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSL SPG
906	ATX-P-3377	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGGSVNSGRYYWSWIRQPPG KGLEWIGYIYSSGYTNYNPSLKSRVTMLLDTSKNQFSLKLNSVTA ADTAVYYCARSRGYRYGPFDYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
907	ATX-P-3418	HC IgG1-Fc aa	QVQLVQSGSELKKPGASVKVSCEASGYTFTSYAMNWVRQAPGQ GLEWMGWINTNTGTPTYAQGFTGRFVFSLDTSVSTAYLQISSLKA EDTAVYYCASHSTSFDYWGQGTLVTVSSASTKGPSVFPLAPSSKS TSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSG LYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKT HTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHE DPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVLHQD WLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREE MTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP G
908	ATX-P-3420	HC IgG1-Fc aa	QVQLQQWGAGLVKPSETLSLTCAVHGGSFSDYYLTWIRQPPGKG LEWIGEINHSGSTNYNPSLKSRVTLSIDTSKNQFSLKLSSVTAADT AVYYCARGSEDYYYYMDVWGKGTTVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG
909	ATX-P-3426	HC IgG1-Fc aa	EVQLVQSGAEVKKPGESLKISCKGSGYIFTSYWIGWVRQMPGKG LEWMGIIYPGDSDTRYSPSFQGQVTISADKSIITAYLQWSSLKASD TAMYYCARHDYFDIGGYFDYWGQGTLVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
910	ATX-P-3432	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKADGYTFTDYYMHWVRQAPG QGHEWMGWINPNSGVTYYAQKFQGRVTMTRDTSISTAYMELNR

			LRSDDTAVYYCARDRTFYFDYWGQGTLVTVSSASTKGPSVFPLA PSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
911	ATX-P-3433	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTDYYMHWVRQAPG QGLEWMGWINPNNGGTDYAQKFQGRVTMTRDTSISTAYMELHR LRSDDTAVYFCARGVYDVVVPTAIVNWFDPWGQGTLVTVSSAS TKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALT SGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTK VDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRT PEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYAST YRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQP REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPE NNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEAL HNHYTQKSLSLSPG
912	ATX-P-3438	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGDSISNDYWWNWVRQPPGK GLEWIGEIYHSGHTNYNPSLKSRVTISVDKSKNQLSLKLTSVNAA DTAVYYCARGGTEITGYMDVWGKGTTVTVSSASTKGPSVFPLAP SSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL QSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKS CDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVD VSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTV LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP SREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSL SLSPG
913	ATX-P-3441	HC IgG1-Fc aa	QVQLQESGPGLVKPSGTLSLTCAVSGASIRSGHWWSWVRQPPGK GLEWIGEIYHSGNTNYNPSLKSRVTLSVDKSKNQFSLKLSSVTAA DTAVYYCARGHYGDYVVYFDYWGQGTLVTVSSASTKGPSVFPL APSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAV LQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPK SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLT VLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP VLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQK SLSLSPG
914	ATX-P-3446	HC IgG1-Fc aa	QVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRQPPGKGL EWIGYVYYSGYTKYNPSLKSRVTISIDASKNQFSLKLTSVTAADT AVYYCATVESKWNYGPFAIWGQGTMVTVSSASTKGPSVFPLAPS SKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSC DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDV SHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSVLTVL HQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPS REEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVL DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLS LSPG

915	ATX-P-3452	HC IgG1-Fc aa	QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYYMNWVRQAPG QGLEWMGWINPNSGATNYAQKFQGRVTMTRDTSISTDYMELSR LRSDDTAVYYCARDGAKWNHEGYYFDYWGQGTLVTVSSASTK GPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSG VHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTP EVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTY RVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPR EPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPEN NYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALH NHYTQKSLSLSPG

[00157] Table 5: Anti-C3 antibodies (LC Kappa sequences)

SEQ ID NO:	Antibody Name:	Descriptor:	Sequence:
916	ATX-P-3360	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
917	ATX-P-3362	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
918	ATX-P-3363	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT

			ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
919	ATX-P-3365	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
920	ATX-P-3367	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
921	ATX-P-3369	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC

			AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
922	ATX-P-3370	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
923	ATX-P-3371	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
924	ATX-P-3373	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT

			CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
925	ATX-P-3375	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
926	ATX-P-3378	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
927	ATX-P-3382	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA

			CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
928	ATX-P-3383	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
929	ATX-P-3384	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
930	ATX-P-3386	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC

			AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
931	ATX-P-3387	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
932	ATX-P-3389	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
933	ATX-P-3391	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT

934	ATX-P-3392	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
935	ATX-P-3395	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
936	ATX-P-3396	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
937	ATX-P-3397	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG

			GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
938	ATX-P-3405	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
939	ATX-P-3406	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
940	ATX-P-3407	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC

			GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
941	ATX-P-3408	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
942	ATX-P-3410	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
943	ATX-P-3412	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT

944	ATX-P-3413	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
945	ATX-P-3414	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGCGTCACCATCACTTGCCGGGCCAGTCAG AATATTATTACCTGGTTGGCTTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATAAGGCGTCTAGTTTAG AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG GACAGAATTCACTCTCACCATCAGCAGCCTGCAGCCTGATG ATTTTGCAACTTATTACTGCCAACAGTATAGTAGTTATTCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
946	ATX-P-3419	LC Kappa nt	GCCATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCT GTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGG GCATTAGAAATGATTTAGGCTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTAC AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG CACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAG ATTTTGCAACTTATTACTGTCTACAAGATTACAATTACCCGT GGACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
947	ATX-P-3421	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG ACTGTTTTGTACAGGTCCAACAATAAGAACTACTTAGCTTG GTATCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG

			CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTGGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
948	ATX-P-3428	LC Kappa nt	GCCATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCTTCT GTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGG GCATTAGAAATGATTTAGGCTGGTATCAGCAGAATCCCGGG AAAGCCCCTAAGCTCCTGATTTATGCTGCATCCAATTTACA AAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGGC ACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAGA TTTTGTTACTTATTACTGTCTACAAGATTACAATTGGCCGTG GACGTTCGGCCAAGGGACACGACTGGAGATTAAACGTACG GTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAG CAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAA TAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCG ACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACG GAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCAC CCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
949	ATX-P-3430	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAG AGCATTAGCAACTATTTAAATTGGTATCAACAGAAACCAGA GAAAGCCCCTAAGTTCCTGATCTATGCTGCATCCAGTTTGC AAAGTGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAG ATTTTGCAACTTACTACTGTCAACAGAGTTACAGTTCCCCG CTCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
950	ATX-P-3431	LC Kappa nt	GAAATTGTGTTGACTCAGTCTCCAGACTTTCAGTCTGTGACT CCAAAGGAGAAAGTCACCATCACCTGCCGGGCCAGTCAGA GCATTGGTAGTAACTTACACTGGTTCCAGCAGAAACCAGAT CAGTCTCCAAAACTCCTCATCAAGTATGCTTCCCAGTCCTTC TCAGGGGTCCCCTCGAGGTTCAGTGGCAGTGGATCTGGGAC AGATTTCACCCTCACCATCAATAGCCTGGAAGCTGAAGATG CTGCAATGTATTACTGTCATCAGAGTAGTAGTTTACCTCGG ACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACGTACGG TAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAGC AGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAAT AATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCGA

			CAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACGG AGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCACC CTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
951	ATX-P-3435	LC Kappa nt	GCCATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCT GTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGG GCATTAGAAATGATTTAGGCTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTAC AAAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGG CACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAG ATTTTGCATCTTATTACTGTCTACAAGATTACAATTGGCCGT ACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
952	ATX-P-3436	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTGTTAGAAGCAGCTACTTTGCCTGGTACCAGCAGAAACC TGGCCAGGCTCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGA AGATTTTGCAGTGTATTACTGTCAGCAGTATGGTAGCTCAC CTCGGACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACG TACGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGA CGAGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGC TGAATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAA GTCGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGT TACGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCT CCACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAA AGTTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTC CGGTCACAAAATCGTTTAACCGCGGTGAGTGT
953	ATX-P-3437	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTTTGGTACTCCTCGGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT

954	ATX-P-3440	LC Kappa nt	GAAATTGTGTTGACACAGTCTCCAGCCACCCTGTCTTTGTCT CCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGA GTGTTAGCAGCTACTTAGCCTGGTACCAACAGAAACCTGGC CAGGCTCCCAGGCTCCTCATCTATGATGCATCCAACAGGGC CACTGGCATCCCAGCCAGGTTCAGTGGCAGTGGGTCTGGGA CAGACTTCACTCTCACCATCAGCAGCCTGCAGTCTGAAGAT TTTGCAGTTTATTACTGTCAGCAGCGTAGCAATTGGCCGCT CACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTACG GTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAG CAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAA TAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCG ACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACG GAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCAC CCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
955	ATX-P-3442	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAG ACCATTAGGAGCTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTGC AAAGTGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGG GACAAATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAG ATTTTGCAACTTACTCCTGTCAACAGAGTTACACTACCCCG CTCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
956	ATX-P-3444	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTATTAGCAGCAGCTACTTAGCCTGGTACCAGCGGGAACC TGGCCAGGCTCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGA AGATTTTGTAGTGTATTACTGTCAACAATATGGTAGCTCAC CGATCACCTTCGGCCAAGGGACACGACTGGAGATTAAACG TACGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGA CGAGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGC TGAATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAA GTCGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGT TACGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCT CCACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAA AGTTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTC CGGTCACAAAATCGTTTAACCGCGGTGAGTGT
957	ATX-P-3447	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTGTTCGCAGCAGCTACTTAGCCTGGTACCAGCAGAAACC TGGCCAGGCTCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCTTCAGCAGACTGGAGCCTGA

			AGATTTTGCAGTGTATTACTGTCAGCAGTATGGTAGCTCAC CGTACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACG TACGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGA CGAGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGC TGAATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAA GTCGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGT TACGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCT CCACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAA AGTTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTC CGGTCACAAAATCGTTTAACCGCGGTGAGTGT
958	ATX-P-3448	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCAGGCGAGTCAG GACATTAGCAACTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTACGATGCATCCAATTTGG AAACAGGGGTCCCATCAAGGTTCAGTGGAAGTGGATCTGG GACAGATTTTACTTTCACCATCAGCAGCCTGCAGCCTGAAG ATTTTGCAACTTACTATTGTCAACAGGCTAACAGTTTCCCG CTCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
959	ATX-P-3449	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTGTTAGCAGCAGCTACTTAGCCTGGTACCAGCAGAAACC TGGCCAGGCTCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGA AGATTTTGCAGTGTATTACTGTCAGCAGTATGGTAGCTCAC CATTCACTTTCGGCCCTGGGACCAAAGTGGATATCAAACGT ACGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGAC GAGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCT GAATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAG TCGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTT ACGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTC CACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAA GTTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCC GGTCACAAAATCGTTTAACCGCGGTGAGTGT
960	ATX-P-3450	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTGGACGTTCGGCCAAGGGACACGA CTGGAGATTAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA

			TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
961	ATX-P-3451	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCGAGTCAG GACATTAGCAACTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTGG AAAGTGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAG ATTTTGCAACTTACTACTGTCAACAGAGTTACAGTACCCCT ACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTACGG TAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAGC AGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAAT AATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCGA CAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACGG AGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCACC CTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
962	ATX-P-3453	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGGTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGCCAGCCTCCTAAACTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATGGTACTCCTCGGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
963	ATX-P-3454	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCAGGCGAGTCAG GACATTAAGAACTGTTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTACGATGCATCCAATTTGG AAACAGGGGTCCCATCAAGGTTCAGTGGAAGTGGATCTGG GACAGATTTTACTTTCACCATCAGCAGCCTGCAGCCTGAAG ATATTGCAACATATTACTGTCAACAGTTTGATAATCTCCCTC TCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT

964	ATX-P-3455	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG ACTATTTTATACAGGTCCAACATTAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAACTGCTCATTT CCTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCGGACGTTCGGCCAGGGGACCAAGCTG GAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTATCTTT CCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTTCTGT AGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTAAAG TACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAATTCA CAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCACAT ATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGACTAT GAAAAACATAAAGTTTACGCATGTGAGGTGACGCACCAAG GATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGTGAG TGT
965	ATX-P-3456	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCTCGGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
966	ATX-P-3458	LC Kappa nt	GACATCCAGATGACCCAGTCTCCTTCCACCCTGTCTGCATC TGTAGGAGACAGAGTCACTATCACTTGTCGGGCGAGTCAG GGTATTAGCAGCTGGTTAGCCTGGTATCAGCAGAAACCAG GGAAAGCCCCTAAACTCCTGATCTATGCTGCATCCAGTTTG CAGAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTG GGACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAA GATTTTGCAACTTACTATTGTCAACAGGCTAACAGTTTCCCT CTCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
967	ATX-P-3459	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT

			ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCTCCGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
968	ATX-P-3462	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAG AGCATTAGCAGCTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTGC AAAGTGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAG ATTTTGCAACTTACTACTGTCAACAGAGTTACAGTACCCCG TACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
969	ATX-P-3463	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATTTTATGATACTCCTCGGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
970	ATX-P-3466	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCGAGTCAG GGCATTAGCAATTATTTAGCCTGGTATCAGCAGAAACCAGG GAAAGTTCCTAAGCTCCTGATCTATGTTGCATCCACTTTGC AATCAGGGGTCCCATCTCGGTTCAGTGGCAGTGGATCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAGA TGTTGCAACTTATTACTGTCAAAATTATATCAGTGCCCCGCT CACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTACG

			GTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAG CAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAA TAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCG ACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACG GAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCAC CCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
971	ATX-P-3467	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTGGACGTTCGGCCAAGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
972	ATX-P-3468	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTGTTAGCAGCAGCTACTTAGCCTGGTACCAGCAGAAACC TGGCCAGGCTCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGA AGATTTTGCAGTGTATTACTGTCAGCAGTATGGTAGCTCAC CGTACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACG TACGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGA CGAGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGC TGAATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAA GTCGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGT TACGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCT CCACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAA AGTTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTC CGGTCACAAAATCGTTTAACCGCGGTGAGTGT
973	ATX-P-3469	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCAACATCACTTGCCGGGCGAGTCAG GGCATTAGCAATTATTTAGCCTGGTATCAGCAGAAACCAGG GAAAGTTCCTAAGCTCCTGATCTATGCTGCATCCACTTTGC AATCAGGGGTCCCATCTCGTTTCAGTGGCAGTGGATCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAGA TGTTGCAAGTTATTTCTGTCAAAAATATATCAGTGCCCCGCT CACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTACG GTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAG CAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAA TAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCG ACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACG GAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCAC

			CCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
974	ATX-P-3470	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCGAGTCAG GGCATTAGCAATTATTTAGCCTGGTATCAGCAGAAACCAGG GAAAGTTCCTAAGCTCCTGATCTATGCTGCATCCACTTTGC AATCAGGGGTCCCATCTCGGTTCAGTGGCAGTGGATCTGGG ACAGATTTCACTCTCACCATCAGCAGCCTGCAGCCTGAAGA CGTTGCAAGTTATTACTGTCAAGATTATACCAGTGCCCCGC TCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTAC GGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGA GCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGA ATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTC GACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTAC GGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCA CCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGT TTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGG TCACAAAATCGTTTAACCGCGGTGAGTGT
975	ATX-P-3471	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTGTTAGTGACAGCTACTTAGCCTGGTACCAGCAGGAACC TGGCCAGGCGCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGA AGATTTTGCATTATATTACTGTCAGCAATATGATTCCTCGCC ATTCACTTTCGGCCCTGGGACCAAAGTGGATATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
976	ATX-P-3472	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
977	ATX-P-3361	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG

			AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
978	ATX-P-3366	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
979	ATX-P-3376	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
980	ATX-P-3477	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTAACCGGGAATCCGGGGTCCCTGACCGATTC

			AGTGGCTCCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCGTACACTTTTGGCCAGGGGACCAAG CTGGAGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
981	ATX-P-3418	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACCTGCCGGGCAAGTCAG ACCATTAGAAACTTTTTAAATTGGTATCAGCGGAAACCAGG GAAAGCCCCTAAGATCCTGATCTATGCTGCATCCAGTTTGC AAAGTGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGCAG ATTTTGCAACTTACTACTGTCAACAGACTTACAGTATCCCG ATCACCTTCGGCCAAGGGACACGACTGGAGATTAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
982	ATX-P-3420	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAG AGCATTAGCAGGTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAACTCCTGCTCTATGCTGCATCCAGTTTGC AAAGTGGGGTCCCATCAAAGTTCAGCGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGCCTGCAACCTGAAG ATTTTGCAACTTACTACTGTCAACAGAGTTACAGTTCCCCG ATCACCTTCGGCCAAGGGACACGACTGGAGATTAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
983	ATX-P-3426	LC Kappa nt	GATATTGTGATGACTCAGTCTCCACTCTCCCTGCCCGTCACC CCTGGAGAGCCGGCCTCCATCTCCTGCAGGTCTAGTCAGAG CCTCCTGCATAGTAATGGATACAACTATTTGGATTGGTACC TGCAGAAGCCAGGGCAGTCTCCACAGCTCCTGATCTATTTG GGTTCTAATCGGGCCTCCGGGGTCCCTGACAGGTTCAGTGG CAGTGGATCAGGCACAGATTTTACACTGAAAATCAGCAGA GTGGAGGCTGAGGATGTTGGGGTTTATTACTGCATGCAAAC TCTACAAACTCCTCCGACGTTCGGCCAAGGGACCAAGGTGG AAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTATCTTTC CGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTTCTGTA

			GTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTAAAGT ACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAATTCA CAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCACAT ATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGACTAT GAAAAACATAAAGTTTACGCATGTGAGGTGACGCACCAAG GATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGTGAG TGT
984	ATX-P-3432	LC Kappa nt	GACATCCAGTTGACCCAGTCTCCATCCTTCCTGTCTGCATCT GTAGGAGACAGACTCACCATCACTTGCCGGGCCAGTCAGG GCATTAGCAGTTATTTAGCCTGGTATCAGCAAAAACCAGGG AAAGCCCCTAAGCTCCTGATCTATACTGCATCCACTTTACA AAGTGGGGTCCCATCAAGGTTCAGCGGCAGTGGATCTGGG ACAGAATTCACTCTCACAATCAGCAGCCTGCAGCCTGAAGA TTTTGCAACTTATTACTGTCAACAGCTTAATGGTTACCCTCC GACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACGTACG GTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACGAG CAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTGAA TAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGTCG ACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTACG GAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCCAC CCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAGTTT ACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCGGTC ACAAAATCGTTTAACCGCGGTGAGTGT
985	ATX-P-3433	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAG AGCATTACCAGCTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAAGCTCCTGATCTTTGCTGCATCCAGTTTGC AAAGTGGGGTCCCATCAAGGTTCAGTGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAG ATTTTGCAACTTACTACTGTCAACAGAGTTACAGTACCCCT CTCACTTTCGGCGGAGGGACCAAGGTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
986	ATX-P-3438	LC Kappa nt	GACATCGTGATGACCCAGTCTCCAGACTCCCTGGCTGTGTC TCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAG AGTGTTTTATACAGCTCCAACAATAAGAACTACTTAGCTTG GTACCAGCAGAAACCAGGACAGCCTCCTAAGCTGCTCATTT ACTGGGCATCTACCCGGGAATCCGGGGTCCCTGACCGATTC AGTGGCAGCGGGTCTGGGACAGATTTCACTCTCACCATCAG CAGCCTGCAGGCTGAAGATGTGGCAGTTTATTACTGTCAGC AATATTATAGTACTCCTCGGACGTTCGGCCAGGGGACCAAG GTGGAAATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTAT CTTTCCGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTT CTGTAGTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTA AAGTACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAA TTCACAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCA CATATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGAC TATGAAAAACATAAAGTTTACGCATGTGAGGTGACGCACC

			AAGGATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGT GAGTGT
987	ATX-P-3441	LC Kappa nt	GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATC TGTAGGAGAAAGAGTCACCATCACTTGCCGGGCAAGTCAG AGCATTAGCAGCTATTTAAATTGGTATCAGCAGAAACCAGG GAAAGCCCCTAACCTCCTGATCTATGCTGCATCCAGTTTCC AAAGTGGGGTCCCATCAAGGGTCAGTGGCAGTGGATCTGG GACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAGG ATTTTGCAACTTACTACTGTCAACAGAGTTACAGTAACCCG TACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGTA CGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGACG AGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGCTG AATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAAGT CGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGTTA CGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCTCC ACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAAAG TTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTCCG GTCACAAAATCGTTTAACCGCGGTGAGTGT
988	ATX-P-3446	LC Kappa nt	GAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTCTTTGTC TCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAG AGTGTTAGTAGAAGCTACTTAGCCTGGTACCAGCAGAAACC TGGCCAGGCTCCCAGGCTCCTCATCTATGGTGCATCCAGCA GGGCCACTGGCATCCCAGACAGGTTCAGTGGCAGTGGGTCT GGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGA AGATTTTGCAGTGTATTACTGTCAGCAGTATGGTAGCTCAC CGTGGACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACG TACGGTAGCTGCCCCTTCAGTTTTTATCTTTCCGCCGTCTGA CGAGCAGTTAAAATCCGGGACCGCTTCTGTAGTTTGCCTGC TGAATAATTTTTATCCGCGTGAGGCTAAAGTACAATGGAAA GTCGACAATGCTTTGCAGTCGGGAAATTCACAGGAAAGTGT TACGGAGCAGGATTCTAAAGATTCCACATATTCACTCAGCT CCACCCTTACACTGAGCAAAGCCGACTATGAAAAACATAA AGTTTACGCATGTGAGGTGACGCACCAAGGATTATCCAGTC CGGTCACAAAATCGTTTAACCGCGGTGAGTGT
989	ATX-P-3452	LC Kappa nt	GATATTGTGATGACTCAGTCTCCACTCTCCCTGCCCGTCACC CCTGGAGAGCCGGCCTCCATCTCCTGCAGGTCTAGTCAGAT CCTCCTGCATACTAATGGATACAACTATTTGGATTGGTACC TGCAGAAGCCAGGGCAGTCTCCTCAGCTCCTGATCTATTTG GGTTCTTATCGGGCCTCCGGGGTCCCTGACAGGTTCAGTGG CAGTGGATCAGGCACAGATTTTACACTGAAAATCAGCAGA GTGGAGGCTGGGGATGTTGGGCTTTATTACTGCATGCAAGC TCTACAAACTCCGCTCACTTTCGGCGGAGGGACCAAGGTGG AGATCAAACGTACGGTAGCTGCCCCTTCAGTTTTTATCTTTC CGCCGTCTGACGAGCAGTTAAAATCCGGGACCGCTTCTGTA GTTTGCCTGCTGAATAATTTTTATCCGCGTGAGGCTAAAGT ACAATGGAAAGTCGACAATGCTTTGCAGTCGGGAAATTCA CAGGAAAGTGTTACGGAGCAGGATTCTAAAGATTCCACAT ATTCACTCAGCTCCACCCTTACACTGAGCAAAGCCGACTAT GAAAAACATAAAGTTTACGCATGTGAGGTGACGCACCAAG GATTATCCAGTCCGGTCACAAAATCGTTTAACCGCGGTGAG TGT
990	ATX-P-3360	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE

			QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
991	ATX-P-3362	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
992	ATX-P-3363	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
993	ATX-P-3365	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
994	ATX-P-3367	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
995	ATX-P-3369	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
996	ATX-P-3370	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
997	ATX-P-3371	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
998	ATX-P-3373	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
999	ATX-P-3375	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE

			QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1000	ATX-P-3378	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1001	ATX-P-3382	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1002	ATX-P-3383	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1003	ATX-P-3384	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1004	ATX-P-3386	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1005	ATX-P-3387	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1006	ATX-P-3389	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1007	ATX-P-3391	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1008	ATX-P-3392	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE

			QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1009	ATX-P-3395	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1010	ATX-P-3396	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1011	ATX-P-3397	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1012	ATX-P-3405	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1013	ATX-P-3406	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1014	ATX-P-3407	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1015	ATX-P-3408	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1016	ATX-P-3410	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1017	ATX-P-3412	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1018	ATX-P-3413	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

1019	ATX-P-3414	LC Kappa aa	DIQMTQSPSTLSASVGDSVTITCRASQNIITWLAWYQQKPGKA PNLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYSSYSYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1020	ATX-P-3419	LC Kappa aa	AIQMTQSPSSLSASVGDRVTITCRASQGIRNDLGWYQQKPGK APKLLIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYY CLQDYNYPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTA SVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1021	ATX-P-3421	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQTVLYRSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPWTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1022	ATX-P-3428	LC Kappa aa	AIQMTQSPSSLSASVGDRVTITCRASQGIRNDLGWYQQNPGK APKLLIYAASNLQSGVPSRFSGSGSGTDFTLTISSLQPEDFVTY YCLQDYNWPWTFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGT ASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKD STYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGE C
1023	ATX-P-3430	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQSISNYLNWYQQKPEKA PKFLIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYC QQSYSSPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1024	ATX-P-3431	LC Kappa aa	EIVLTQSPDFQSVTPKEKVTITCRASQSIGSNLHWFQQKPDQSP KLLIKYASQSFSGVPSRFSGSGSGTDFTLTINSLEAEDAAMYYC HQSSSLPRTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1025	ATX-P-3435	LC Kappa aa	AIQMTQSPSSLSASVGDRVTITCRASQGIRNDLGWYQQKPGK APKLLIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFASYY CLQDYNWPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTA SVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1026	ATX-P-3436	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSVRSSYFAWYQQKPGQ APRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYY CQQYGSSPRTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1027	ATX-P-3437	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYFGTPRTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1028	ATX-P-3440	LC Kappa aa	EIVLTQSPATLSLSPGERATLSCRASQSVSSYLAWYQQKPGQA PRLLIYDASNRATGIPARFSGSGSGTDFTLTISSLQSEDFAVYYC QQRSNWPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

1029	ATX-P-3442	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQTIRSYLNWYQQKPGKA PKLLIYAASSLQSGVPSRFSGSGSGTNFTLTISSLQPEDFATYSC QQSYTTPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1030	ATX-P-3444	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSISSSYLAWYQREPGQA PRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFVVYYC QQYGSSPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1031	ATX-P-3447	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSVRSSYLAWYQQKPGQ APRLLIYGASSRATGIPDRFSGSGSGTDFTLTFSRLEPEDFAVY YCQQYGSSPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTA SVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1032	ATX-P-3448	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCQASQDISNYLNWYQQKPGKA PKLLIYDASNLETGVPSRFSGSGSGTDFTFTISSLQPEDFATYYC QQANSFPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1033	ATX-P-3449	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSSSYLAWYQQKPGQ APRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYY CQQYGSSPFTFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1034	ATX-P-3450	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPWTFGQGTRLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1035	ATX-P-3451	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQDISNYLNWYQQKPGKA PKLLIYAASSLESGVPSRFSGSGSGTDFTLTISSLQPEDFATYYC QQSYSTPTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVV CLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSL SSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1036	ATX-P-3453	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYRSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYGTPRTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1037	ATX-P-3454	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCQASQDIKNCLNWYQQKPGK APKLLIYDASNLETGVPSRFSGSGSGTDFTFTISSLQPEDIATYY CQQFDNLPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1038	ATX-P-3455	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQTILYRSNIKNYLAWYQ QKPGQPPKLLISWASTRESGVPDRFSGSGSGTDFTLTISSLQAE DVAVYYCQQYYSTRTFGQGTKLEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQ DSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSF NRGEC

1039	ATX-P-3456	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPRTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1040	ATX-P-3458	LC Kappa aa	DIQMTQSPSTLSASVGDRVTITCRASQGISSWLAWYQQKPGK APKLLIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYY CQQANSFPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1041	ATX-P-3459	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPPTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1042	ATX-P-3462	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKA PKLLIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYC QQSYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1043	ATX-P-3463	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQFYDTPRTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1044	ATX-P-3466	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQGISNYLAWYQQKPGKV PKLLIYVASTLQSGVPSRFSGSGSGTDFTLTISSLQPEDVATYY CQNYISAPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1045	ATX-P-3467	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPWTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1046	ATX-P-3468	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSSSYLAWYQQKPGQ APRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYY CQQYGSSPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1047	ATX-P-3469	LC Kappa aa	DIQMTQSPSSLSASVGDRVNITCRASQGISNYLAWYQQKPGK VPKLLIYAASTLQSGVPSRFSGSGSGTDFTLTISSLQPEDVASYF CQKYISAPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1048	ATX-P-3470	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQGISNYLAWYQQKPGKV PKLLIYAASTLQSGVPSRFSGSGSGTDFTLTISSLQPEDVASYY CQDYTSAPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

1049	ATX-P-3471	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSDSYLAWYQQEPGQ APRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFALYY CQQYDSSPFTFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTAS VVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDST YSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1050	ATX-P-3472	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1051	ATX-P-3361	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1052	ATX-P-3366	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1053	ATX-P-3376	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1054	ATX-P-3377	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASNRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPYTFGQGTKLEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1055	ATX-P-3418	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQTIRNFLNWYQRKPGKA PKILIYAASSLQSGVPSRFSGSGSGTDFTLTISSLQPADFATYYC QQTYSIPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASVV CLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSL SSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1056	ATX-P-3420	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQSISRYLNWYQQKPGKA PKLLLYAASSLQSGVPSKFSGSGSGTDFTLTISSLQPEDFATYY CQQSYSSPITFGQGTRLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1057	ATX-P-3426	LC Kappa aa	DIVMTQSPLSLPVTPGEPASISCRSSQSLLHSNGYNYLDWYLQ KPGQSPQLLIYLGSNRASGVPDRFSGSGSGTDFTLKISRVEAED VGVYYCMQTLQTPPTFGQGTKVEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQ DSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSF NRGEC
1058	ATX-P-3432	LC Kappa aa	DIQLTQSPSFLSASVGDRLTITCRASQGISSYLAWYQQKPGKAP KLLIYTASTLQSGVPSRFSGSGSGTEFTLTISSLQPEDFATYYCQ QLNGYPPTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVV

			CLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSL SSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1059	ATX-P-3433	LC Kappa aa	DIQMTQSPSSLSASVGDRVTITCRASQSITSYLNWYQQKPGKA PKLLIFAASSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYC QQSYSTPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1060	ATX-P-3438	LC Kappa aa	DIVMTQSPDSLAVSLGERATINCKSSQSVLYSSNNKNYLAWY QQKPGQPPKLLIYWASTRESGVPDRFSGSGSGTDFTLTISSLQA EDVAVYYCQQYYSTPRTFGQGTKVEIKRTVAAPSVFIFPPSDE QLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVT EQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
1061	ATX-P-3441	LC Kappa aa	DIQMTQSPSSLSASVGERVTITCRASQSISSYLNWYQQKPGKA PNLLIYAASSFQSGVPSRVSGSGSGTDFTLTISSLQPEDFATYYC QQSYSNPYTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTY SLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1062	ATX-P-3446	LC Kappa aa	EIVLTQSPGTLSLSPGERATLSCRASQSVSRSYLAWYQQKPGQ APRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYY CQQYGSSPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTA SVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
1063	ATX-P-3452	LC Kappa aa	DIVMTQSPLSLPVTPGEPASISCRSSQILLHTNGYNYLDWYLQK PGQSPQLLIYLGSYRASGVPDRFSGSGSGTDFTLKISRVEAGDV GLYYCMQALQTPLTFGGGTKVEIKRTVAAPSVFIFPPSDEQLK SGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFN RGEC

[00158] Table 6: Summary of SEQ ID NOs for individual exemplary antibodies of the present disclosure.

Antibody Name	HCDRs 1,2,3 (aa)	LCDRs 1,2,3 (aa)	VH (aa)	VH (nucleotide)	VL (aa)	VL (nucleotide)	VH + constant (aa)	VH + constant (nucleotide)	VL + constant (aa)	VL + constant (nucleotide)
ATX-P-3360	96,125,153	368,403,438	546	472	694	620	842	768	990	916
ATX-P-3362	58,71,83	370,405,440	547	473	695	621	843	769	991	917
ATX-P-3363	98,127,155	371,406,441	548	474	696	622	844	770	992	918
ATX-P-3365	99,128,156	372,407,442	549	475	697	623	845	771	993	919
ATX-P-3367	205,213,220	374,409,444	550	476	698	624	846	772	994	920
ATX-P-3369	2,21,39	375,410,445	551	477	699	625	847	773	995	921
ATX-P-3370	182,190,197	376,411,446	552	478	700	626	848	774	996	922
ATX-P-3371	183,191,198	377,412,447	553	479	701	627	849	775	997	923
ATX-P-3373	100,129,157	378,413,448	554	480	702	628	850	776	998	924
ATX-P-3375	206,214,221	379,414,449	555	481	703	629	851	777	999	925
ATX-P-3378	101,130,158	382,417,452	556	482	704	630	852	778	1000	926
ATX-P-3382	102,131,159	383,418,453	557	483	705	631	853	779	1001	927
ATX-P-3383	103,132,160	384,419,454	558	484	706	632	854	780	1002	928
ATX-P-3384	104,133,161	385,420,455	559	485	707	633	855	781	1003	929
ATX-P-3386	105,134,162	386,421,456	560	486	708	634	856	782	1004	930
ATX-P-3387	106,135,163	387,422,457	561	487	709	635	857	783	1005	931
ATX-P-3389	107,136,164	388,423,458	562	488	710	636	858	784	1006	932
ATX-P-3391	108,137,165	389,424,459	563	489	711	637	859	785	1007	933
ATX-P-3392	109,138,166	390,425,460	564	490	712	638	860	786	1008	934
ATX-P-3395	60,73,85	238,270,301	565	491	713	639	861	787	1009	935
ATX-P-3396	3,22,40	239,271,302	566	492	714	640	862	788	1010	936

ATX-P-3397	61,74,86	240,272,303	567	493	715	641	863	789	1011	937
ATX-P-3405	62,75,87	241,273,304	568	494	716	642	864	790	1012	938
ATX-P-3406	228,231,234	242,274,305	569	495	717	643	865	791	1013	939
ATX-P-3407	63,76,88	243,275,306	570	496	718	644	866	792	1014	940
ATX-P-3408	64,77,89	244,276,307	571	497	719	645	867	793	1015	941
ATX-P-3410	65,78,90	245,277,308	572	498	720	646	868	794	1016	942
ATX-P-3412	110,139,167	246,278,309	573	499	721	647	869	795	1017	943
ATX-P-3413	4,23,41	247,279,310	574	500	722	648	870	796	1018	944
ATX-P-3414	229,232,235	248,280,311	575	501	723	649	871	797	1019	945
ATX-P-3419	6,25,43	250,282,313	576	502	724	650	872	798	1020	946
ATX-P-3421	111,140,168	391,426,461	577	503	725	651	873	799	1021	947
ATX-P-3428	8,27,45	252,284,315	578	504	726	652	874	800	1022	948
ATX-P-3430	112,141,169	253,285,316	579	505	727	653	875	801	1023	949
ATX-P-3431	9,28,46	254,286,317	580	506	728	654	876	802	1024	950
ATX-P-3435	12,31,49	257,289,320	581	507	729	655	877	803	1025	951
ATX-P-3436	208,216,223	341,350,359	582	508	730	656	878	804	1026	952
ATX-P-3437	113,142,170	392,427,462	583	509	731	657	879	805	1027	953
ATX-P-3440	13,32,50	342,351,360	584	510	732	658	880	806	1028	954
ATX-P-3442	116,145,173	259,291,322	585	511	733	659	881	807	1029	955
ATX-P-3444	66,79,91	343,352,361	586	512	734	660	882	808	1030	956
ATX-P-3447	209,217,224	345,354,363	587	513	735	661	883	809	1031	957
ATX-P-3448	210,218,225	260,292,323	588	514	736	662	884	810	1032	958
ATX-P-3449	187,195,202	346,355,364	589	515	737	663	885	811	1033	959
ATX-P-3450	211,219,226	394,429,464	590	516	738	664	886	812	1034	960
ATX-P-3451	188,196,203	261,293,324	591	517	739	665	887	813	1035	961
ATX-P-3453	117,146,174	395,430,465	592	518	740	666	888	814	1036	962

ATX-P-3454	15,34,52	262,294,325	593	519	741	667	889	815	1037	963
ATX-P-3455	118,147,175	396,431,466	594	520	742	668	890	816	1038	964
ATX-P-3456	119,148,176	397,432,467	595	521	743	669	891	817	1039	965
ATX-P-3458	16,35,53	263,295,326	596	522	744	670	892	818	1040	966
ATX-P-3459	120,149,177	398,433,468	597	523	745	671	893	819	1041	967
ATX-P-3462	121,150,178	264,296,327	598	524	746	672	894	820	1042	968
ATX-P-3463	67,80,92	399,434,469	599	525	747	673	895	821	1043	969
ATX-P-3466	17,36,54	265,297,328	600	526	748	674	896	822	1044	970
ATX-P-3467	122,151,179	400,435,470	601	527	749	675	897	823	1045	971
ATX-P-3468	68,81,93	347,356,365	602	528	750	676	898	824	1046	972
ATX-P-3469	18,37,55	266,298,329	603	529	751	677	899	825	1047	973
ATX-P-3470	19,38,56	267,299,330	604	530	752	678	900	826	1048	974
ATX-P-3471	69,82,94	348,357,366	605	531	753	679	901	827	1049	975
ATX-P-3472	123,152,180	401,436,471	606	532	754	680	902	828	1050	976
ATX-P-3361	97,126,154	369,404,439	607	533	755	681	903	829	1051	977
ATX-P-3366	59,72,84	373,408,443	608	534	756	682	904	830	1052	978
ATX-P-3376	184,192,199	380,415,450	609	535	757	683	905	831	1053	979
ATX-P-3377	207,215,222	381,416,451	610	536	758	684	906	832	1054	980
ATX-P-3418	5,24,42	249,281,312	611	537	759	685	907	833	1055	981
ATX-P-3420	185,193,200	251,283,314	612	538	760	686	908	834	1056	982
ATX-P-3426	7,26,44	332,335,338	613	539	761	687	909	835	1057	983
ATX-P-3432	10,29,47	255,287,318	614	540	762	688	910	836	1058	984
ATX-P-3433	11,30,48	256,288,319	615	541	763	689	911	837	1059	985
ATX-P-3438	114,143,171	393,428,463	616	542	764	690	912	838	1060	986
ATX-P-3441	115,144,172	258,290,321	617	543	765	691	913	839	1061	987
ATX-P-3446	186,194,201	344,353,362	618	544	766	692	914	840	1062	988

ATX-P-3452	14,33,51	333,336,339	619	545	767	693	915	841	1063	989

KEY: aa = amino acid; HCDR 1, 2, 3 = heavy chain CDRs 1, 2, and 3 (in numerical order); LCDRs 1, 2, 3 = light chain CDRs 1, 2, and 3 (in numerical order); VH = heavy chain variable region; VL = light chain variable region; VH + constant = heavy chain variable region sequence with an exemplary human heavy chain constant region sequence (typically IgG1); VL + constant = light chain variable region sequence with an exemplary human light chain constant region sequence (typically kappa). All numbers except in "Antibody Name" correspond to SEQ ID NOs in the sequence listing and Tables 1, 2, 3, 4, and 5.

[00159] Human Complement Component 3 (C3), which includes Complement Component 3a (C3a) and Complement Component 3b (C3b), was used to generate the anti-C3 antibodies of the present disclosure (see, e.g., UniProt Accession No. M0QYC8): ITHRIHWESASLLRSEETKENEGFTVTAEGKGQGTLSVVTMYHAKAKDQLT CNKFDLKVTIKPAPETGIPSPIFLSSVFLEKRPQDAKNTMILEICTRYRGDQDATMSILDIS MMTGFAPDTDDLKQLANGVDRYISKYELDKAFSDRNTLIIYLDKVSHSEDDCLAFKVH QYFNVELIQPGAVKVYAYYNL (SEQ ID NO: 1064).

[00160] Various embodiments of the present disclosure are described herein. Variations of those embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description. The inventors expect skilled artisans to employ such variations as appropriate, and the inventors intend for the various embodiments of the present disclosure to be practiced otherwise than as specifically described herein. Accordingly, embodiments of the present disclosure include all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the various embodiments of the present disclosure unless otherwise indicated herein or otherwise clearly contradicted by context.

CLAIMS

What is claimed is:

1. An antibody, or antigen binding fragment thereof, which specifically binds Complement Component 3 (C3) polypeptides, optionally wherein said C3 is a Complement Component 3a (C3a) polypeptide or a Complement Component 3b (C3b) polypeptide, which is optionally a polypeptide comprising or consisting of the amino acid sequence of SEQ ID NO: 1064.

2. The antibody or fragment of claim 1, which exhibits any one or more the following functional characteristics:

a. reduces complement activation and/or attenuates complement component 3 (C3) convertase activity, which is optionally measured in an ELISA; and/or

b. cross-reacts with at least one of human C3b protein, Cynomolgus monkey C3 protein, and/or human C3a protein; and/or

c. binds to human C3 with a KD¬ of about 100nM or lower; and/or

d. binds to the same epitope on human C3 as an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or

e. competes for binding to human C3 with an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6.

3. The antibody or fragment according to any one of the preceding claims, which is a monoclonal antibody.

4. The antibody or fragment according to any one of the preceding claims, which is a human, humanized, or chimeric antibody.

5. The antibody or fragment according to any one of the preceding claims, which is a whole antibody, a single chain variable fragment (scFv), a variable fragment (Fv), a fragment antigen-

binding region (Fab), a Fab-C, a Fab'-SH, a (Fab')2, a single-domain antibody (sdAb), a nanobody, a diabody, a triabody, or an aptamer, optionally wherein the antibody is a whole antibody comprising an Fc region such as a human IgG1, IgG2, IgG3 or IgG4 Fc region.

6. The antibody or fragment according to any one of the preceding claims, which is conjugated to at least one additional moiety, optionally selected from:

a. a therapeutic or cytotoxic moiety;

b. a detection moiety;

c. a purification moiety;

d. a half-life extension moiety, optionally a polypeptide that is at least 20 amino acids in length and comprises any combination of G, A, S T, E, and P residue, which polypeptide is conjugated to the C- or N- terminus of the antibody.

7. The antibody or fragment according to any one of the preceding claims, which is a polypeptide comprising:

a. one, two or all three HCDRs of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally also one, two or all three of the corresponding LCDRs of said exemplary antibody; and/or

b. a VH sequence having at least 90% identity to the VH sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally also a VL sequence having at least 90% identity to the corresponding VL sequence of said exemplary antibody, preferably wherein variation is not permitted in the HCDRs or LCDRs; and/or

c. all six CDRs of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or

d. the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or

e. the full length heavy chain (VH + constant) sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6, and optionally the corresponding full length light chain (VL + constant) sequence of said exemplary antibody.

8. A polynucleotide encoding an antibody or fragment according to any one of the preceding claims, optionally wherein said polynucleotide comprises or consists of a nucleic acid sequence having at least 70, 80, 90 or 100% identity to a nucleic acid sequence of any one of the exemplary antibodies the sequences of which are provided in Table 6.

9. An expression vector comprising the polynucleotide of claim 8, which is optionally an adeno-associated virus (AAV) vector, a lentiviral (LV) vector, a herpes simplex virus (HSV) vector, or a retrovirus vector.

10. A pharmaceutical composition comprising an antibody or fragment, a polynucleotide, or a vector according to any one of the preceding claims, and optionally

a. at least one pharmaceutically acceptable carrier, a buffer, excipient, stabilizer, diluent, or preservative; and/or

b. at least one additional active ingredient.

11. The pharmaceutical composition of claim 10, which is suitable for ocular administration to a subject, optionally by delivery using a conjunctival insert, a contact lens, a gel, a nanoparticle, a mucoadhesive polymer, an ointment, a solution, a suspension, eye drops, and/or an implant, preferably by injection into the vitreous fluid.

12. The antibody or fragment according to any one of claims 1 to 7, the polynucleotide of claim 8, the vector of claim 9, or the composition of claim 10 or 11, for use as a medicament, optionally for use in a method of treating a disease of the eye in a subject.

13. The antibody, fragment, polynucleotide, vector, or composition for use according to claim 12, wherein said disease is characterized by increased activation of the complement system, in particular the alternative pathway, and in particular within the eye of the subject, for example in drusen or retinal pigment epithelium (RPE) cells of the subject.

14. The antibody, fragment, polynucleotide, vector, or composition for use according to claim 12 or 13, wherein the method comprises ocular administration of the antibody, preferably by injection into the vitreous fluid, and wherein said administration preferably relieves at least one symptom in the subject selected from visual distortion, reduced central vision, blurred vision, and/or difficulty adapting to low light.

15. The antibody, fragment, polynucleotide, vector, or composition for use according to any one of claims 12 to 14, where the disease is age-related macular degeneration (AMD), optionally wherein said AMD is dry AMD, which may be at an early, intermediate, or advanced stage (the latter otherwise known as geographic atrophy, GA).

16. An antibody directed against Complement Component 3 (C3) peptides, or an antigen-binding fragment thereof, comprising a heavy chain variable region (VH) comprising complementarity determining regions (CDRs) HCDR1, HCDR2, and HCDR3, and a light chain variable region (VL) comprising complementarity determining regions (CDRs) LCDR1, LCDR2, and LCDR3, wherein:

the HCDR1 comprises one of the following amino acid sequences:

(a) $X_1YX_2X_3X_4$ (SEQ ID NO: 1), wherein X_1 is G, S, N, D, T, or A; X_2 is Y, A, G, W, or T; X_3 is L, M, I, or V; and X_4 is H, N, S, or G;

(b) $X_1X_2X_3MX_4$ (SEQ ID NO: 57), wherein X_1 is D, N, S, or A; X_2 is Y, or A; X_3 is A, W, Y, S, C, D, or G; and X_4 is H, S, or N;

(c) $X_1X_2X_3WWX_4$ (SEQ ID NO: 95), wherein X_1 is I, S, R, N, or K; X_2 is N, D, S, or G; X_3 is N, S, T, D, Y, or H; and X_4 is S, N, or T;

(d) $X_1YYX_2X_3$ (SEQ ID NO: 181), wherein X_1 is S, or D; X_2 is W, or L; and X_3 is S, or T;

(e) $X_1X_2X_3YX_4WX_5$ (SEQ ID NO: 204), wherein X_1 is S or N; X_2 is G or N; X_3 is S, K, R, N, or G; X_4 is Y, F, or N; and X_5 is S or N; or

(f) TSGVGVG (SEQ ID NO: 227);

wherein the HCDR2 comprises one of the following amino acid sequences:

(a) $X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (SEQ ID NO: 20), wherein X_1 is W, I, or V; X_2 is N, S, or Y; X_3 is P, T, A, G, or Y; X_4 is N, Y, G, D, H, or A; X_5 is S, T, N, G, or D; X_6 is G, or S; X_7 is D, G, T, N, V, A, or H; X_8 is T, P, or K; X_9 is N, Y, T, H, R, I, D, or K; X_{10} is Y, or A; X_{11} is V, Q, A, or S; X_{12} is Q, K, P, or D; X_{13} is N, F, K, G, S, or Q; X_{14} is F, Q, L, or V; and X_{15} is Q, G, T, or K;

(b) $X_1IX_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$ (SEQ ID NO: 70), wherein X_1 is G, R, N, S, H, T, V, or A; X_2 is S, K, N, or G; X_3 is W, S, Q, T, G, or Y; X_4 is N, K, D, S, A, or Y; X_5 is S, T, or G; X_6 is G, D, or S; X_7 is S, G, E, Y, T, or N; X_8 is I, G, T, K, or Y; X_9 is A, T, S, Y, or N; X_{10} is Y, T, P, or F; X_{11} is A, D, or V; X_{12} is D, Y, S, or A; X_{13} is S, A, or V; X_{14} is V, A, or K; and X_{15} is K, P, Q, or G;

(c) $X_1IX_2X_3SX_4X_5X_6X_7X_8NPSLX_9S$ (SEQ ID NO: 124), wherein X_1 is K, Q, R, E, or D; X_2 is Y or F; X_3 is H or Q; X_4 is G, E, or R; X_5 is N, I, S, H, F, or T; X_6 is T or I; X_7 is D, N, or M; X_8 is Y or H; and X_9 is K or R;

(d) $X_1X_2X_3X_4X_5GX_6TX_7YNPSLKS$ (SEQ ID NO: 189) wherein X_1 is Y or E; X_2 is V or I; X_3 is Y or N; X_4 is Y or H; X_5 is S or I; X_6 is Y, F, or S; and X_7 is N or K;

(e) $YIX_1X_2SGX_3TX_4YNPSLKX_5$ (SEQ ID NO: 212) wherein X_1 is Y or N; X_2 is K, Y, or S; X_3 is F, S, Y, or N; X_4 is N, K, or Y; and X_5 is S or N; or

(f) $LIYWNX_1X_2X_3X_4YSPSLX_5S$ (SEQ ID NO: 230) wherein X_1 is G or D; X_2 is D or V; X_3 is E or K; X_4 is R or F; and X_5 is K or Q;

wherein the HCDR3 comprises one of the following amino acid sequences:

(a) SEQ ID NOs: 39-56;

(b) SEQ ID NOs: 83-94;

(c) SEQ ID NOs: 153-180;

(d) SEQ ID NOs: 197-203;

(e) SEQ ID NOs: 220-226; or

(f) SEQ ID NOs: 234-235; and

wherein the LCDR1 comprises an amino acid sequence of any of SEQ ID NOs: 237-267, SEQ ID NOs: 332-333, SEQ ID NOs: 341-348, or SEQ ID NOs: 368-401; the LCDR2 comprises an amino acid sequence of any of SEQ ID NOs: 269-299, SEQ ID NOs: 335-336, SEQ ID NOs: 350-357, or SEQ ID NOs 403-436; and the LCDR3 comprises an amino acid sequence of any of SEQ ID NOs: 300-330, SEQ ID NOs: 339-339, SEQ ID NOs: 359-366, or SEQ ID NOs: 438-471.

17. An antibody directed against Complement Component 3 (C3) peptides, or an antigen-binding fragment thereof, comprising a heavy chain variable region (VH) comprising complementarity determining regions (CDRs) HCDR1, HCDR2, and HCDR3, and a light chain variable region (VL) comprising complementarity determining regions (CDRs) LCDR1, LCDR2, and LCDR3, wherein:

the LCDR1 comprises one of the following amino acid sequences:

(a) X_1ASQ$X_2X_3X_4X_5X_6X_7X_8$ (SEQ ID NO: 236), wherein X_1 is R or Q; X_2 is D, N, T, G, or S; X_3 is V or I; X_4 is S, I, R, G, T, or K; X_5 is T, N, R, or S; X_6 is A, W, F, D, Y, N, or C; X_7 is V or L; X_8 is A, N, G, or H;

(b) RSSQX_1LLHX_2NGYNYLD (SEQ ID NO: 331), wherein X_1 is S or I; X_2 is S or T; or

(c) RASQS$X_1X_2X_3X_4X_5X_6$ (SEQ ID NO: 340), wherein X_1 is V or I; X_2 is S or R; X_3 is S, D, or R; X_4 is Y or S; X_5 is L or Y; X_6 is A, F, or L; or

(d) KSSQX_1X_2LYX_3SNX_4KNYLA (SEQ ID NO: 367), wherein X_1 is S or T; X_2 is V or I; X_3 is R or S; X_4 is N or I;

wherein the LCDR2 comprises one of the following amino acid sequences:

(a) X_1AS$X_2X_3X_4X_5$ (SEQ ID NO: 268), wherein X_1 is S, K, A, Y, T, D, or V; X_2 is F, S, N, Q, or T; X_3 is L, S, or F; X_4 is Y, E, Q, or F; X_5 is S or T;

(b) LGSX_1RAS (SEQ ID NO: 334), wherein X_1 is N or Y;

(c) X_1ASX_2RAT (SEQ ID NO: 349), wherein X_1 is D or G; X_2 is S or N; or

(d) WASX_1RES (SEQ ID NO: 402), wherein X_1 is N or T;

wherein the LCDR3 comprises one of the following amino acid sequences:

(a) SEQ ID NOs: 300-330;

(b) MQX_1LQTPX_2T (SEQ ID NO: 337), wherein X_1 is T or A; X_2 is P or L;

(c) $QQX_1X_2X_3X_4PX_5T$ (SEQ ID NO: 358), wherein X_1 is R or Y; X_2 is S, G, or D; X_3 is N or S; X_4 is W or S; X_5 is L, R, I, Y, F, or W; or

(d) $QQX_1X_2X_3TX_4X_5$ (SEQ ID NO: 437), wherein X_1 is Y or F; X_2 is Y or F; X_3 is S, G, or D; X_4 is P or R; X_5 is Y, W, R, T, or P; and

wherein the HCDR1 comprises an amino acid sequence of any of SEQ ID NOs: 2-19, SEQ ID NOs: 58-69, SEQ ID NOs: 96-123, SEQ ID NOs: 182-188, SEQ ID NOs: 205-211, or SEQ ID NOs: 228-229; the HCDR2 comprises an amino acid sequence of any of SEQ ID NOs: 21-38, SEQ ID NOs: 71-82, SEQ ID NOs: 125-152, SEQ ID NOs 190-196, SEQ ID NOs 213-219, or SEQ ID NOs 231-232; and the HCDR3 comprises an amino acid sequence of any of SEQ ID NOs: 39-56, SEQ ID NOs: 83-94, SEQ ID NOs: 153-180, SEQ ID NOs: 197-203, SEQ ID NOs: 220-226, or SEQ ID NOs: 234-235.

18. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 2; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 21; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 39.

19. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 3; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 22; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 40.

20. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 4; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 23; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 41.

21. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 5; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 24; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 42.

22. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 6; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 25; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 43.

23. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 7; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 26; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 44.

24. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 8; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 27; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 45.

25. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 9; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 28; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 46.

26. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 10; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 29; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 47.

27. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 11; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 30; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 48.

28. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 12; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 31; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 49.

29. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 13; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 32; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 50.

30. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 14; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 33; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 51.

31. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 15; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 34; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 52.

32. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 16; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 35; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 53.

33. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 17; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 36; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 54.

34. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 18; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 37; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 55.

35. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 19; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 38; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 56.

36. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 58; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 71; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 83.

37. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 59; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 72; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 84.

38. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 60; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 73; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 85.

39. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 61; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 74; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 86.

40. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 62; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 75; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 87.

41. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 63; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 76; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 88.

42. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 64; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 77; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 89.

43. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 65; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 78; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 90.

44. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 66; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 79; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 91.

45. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 67; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 80; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 92.

46. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 68; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 81; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 93.

47. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 69; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 82; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 94.

48. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 96; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 125; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 153.

49. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 97; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 126; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 154.

50. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 98; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 127; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 155.

51. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 99; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 128; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 156.

52. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 100; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 129; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 157.

53. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 101; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 130; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 158.

54. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 102; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 131; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 159.

55. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 103; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 132; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 160.

56. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 104; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 133; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 161.

57. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 105; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 134; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 162.

58. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 106; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 135; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 163.

59. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 107; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 136; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 164.

60. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 108; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 137; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 165.

61. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 109; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 138; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 166.

62. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 110; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 139; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 167.

63. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 111; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 140; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 168.

64. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 112; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 141; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 169.

65. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 113; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 142; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 170.

66. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 114; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 143; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 171.

67. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 115; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 144; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 172.

68. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 116; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 145; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 173.

69. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 117; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 146; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 174.

70. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 118; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 147; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 175.

71. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 119; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 148; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 176.

72. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 120; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 149; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 177.

73. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 121; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 150; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 178.

74. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 122; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 151; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 179.

75. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 123; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 152; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 180.

76. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 182; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 190; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 197.

77. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 183; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 191; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 198.

78. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 184; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 192; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 199.

79. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 185; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 193; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 200.

80. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 186; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 194; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 201.

81. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 187; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 195; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 202.

82. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 188; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 196; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 203.

83. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 205; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 213; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 220.

84. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 206; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 214; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 221.

85. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 207; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 215; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 222.

86. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 208; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 216; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 223.

87. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 209; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 217; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 224.

88. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 210; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 218; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 225.

89. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 211; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 219; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 226.

90. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 228; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 231; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 234.

91. The antibody of claim 16 or claim 17, wherein the HCDR1 comprises the amino acid sequence of SEQ ID NO: 229; the HCDR2 comprises the amino acid sequence of SEQ ID NO: 232; and the HCDR3 comprises the amino acid sequence of SEQ ID NO: 35.

92. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 237; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 269; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 300.

93. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 238; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 270; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 301.

94. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 239; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 271; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 302.

95. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 240; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 272; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 303.

96. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 241; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 273; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 304.

97. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 242; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 274; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 305.

98. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 243; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 275; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 306.

99. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 244; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 276; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 307.

100. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 245; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 277; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 308.

101. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 246; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 278; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 309.

102. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 247; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 279; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 310.

103. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 248; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 280; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 311.

104. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 249; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 281; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 312.

105. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 250; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 282; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 313.

106. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 251; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 283; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 314.

107. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 252; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 284; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 315.

108. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 253; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 285; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 316.

109. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 254; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 286; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 317.

110. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 255; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 287; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 318.

111. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 256; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 288; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 319.

112. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 257; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 289; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 320.

113. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 258; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 290; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 321.

114. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 259; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 291; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 322.

115. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 260; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 292; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 323.

116. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 261; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 293; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 324.

117. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 262; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 294; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 325.

118. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 263; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 295; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 326.

119. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 264; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 296; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 327.

120. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 265; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 297; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 328.

121. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 266; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 298; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 329.

122. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 267; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 299; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 330.

123. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 332; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 335; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 338.

124. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 333; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 336; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 339.

125. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 341; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 350; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 359.

126. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 342; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 351; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 360.

127. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 343; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 352; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 361.

128. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 344; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 353; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 362.

129. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 345; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 354; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 363.

130. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 346; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 355; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 364.

131. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 347; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 356; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 365.

132. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 348; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 357; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 366.

133. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 368; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 403; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 438.

134. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 369; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 404; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 439.

135. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 370; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 405; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 440.

136. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 371; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 406; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 441.

137. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 372; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 407; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 442.

138. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 373; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 408; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 443.

139. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 374; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 409; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 444.

140. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 375; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 410; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 445.

141. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 376; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 411; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 446.

142. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 377; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 412; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 447.

143. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 378; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 413; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 448.

144. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 379; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 414; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 449.

145. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 380; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 415; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 450.

146. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 381; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 416; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 451.

147. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 382; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 417; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 452.

148. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 383; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 418; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 453.

149. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 384; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 419; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 454.

150. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 385; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 420; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 455.

151. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 386; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 421; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 456.

152. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 387; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 422; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 457.

153. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 388; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 423; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 458.

154. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 389; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 424; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 459.

155. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 390; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 425; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 460.

156. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 391; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 426; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 461.

157. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 392; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 427; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 462.

158. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 393; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 428; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 463.

159. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 394; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 429; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 464.

160. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 395; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 430; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 465.

161. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 396; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 431; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 466.

162. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 397; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 432; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 467.

163. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 398; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 433; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 468.

164. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 399; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 434; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 469.

165. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 400; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 435; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 470.

166. The antibody of claim 16 or claim 17, wherein the LCDR1 comprises the amino acid sequence of SEQ ID NO: 401; the LCDR2 comprises the amino acid sequence of SEQ ID NO: 436; and the LCDR3 comprises the amino acid sequence of SEQ ID NO: 471.

167. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to any of SEQ ID NOs: 546-619.

168. The antibody of claim 16 or claim 17, wherein the VL comprises an amino acid sequence that is at least 90% identical to any of SEQ ID NOs: 694-767.

169. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 546 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 694.

170. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 547 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 695.

171. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 548 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 696.

172. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 549 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 697.

173. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 550 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 698.

174. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 551 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 699.

175. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 552 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 700.

176. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 553 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 701.

177. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 554 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 702.

178. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 555 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 703.

179. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 556 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 704.

180. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 557 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 705.

181. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 558 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 706.

182. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 559 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 707.

183. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 560 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 708.

184. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 561 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 709.

185. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 562 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 710.

186. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 563 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 711.

187. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 564 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 712.

188. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 565 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 713.

189. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 566 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 714.

190. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 567 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 715.

191. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 568 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 716.

192. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 569 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 717.

193. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 570 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 718.

194. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 571 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 719.

195. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 572 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 720.

196. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 573 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 721.

197. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 574 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 722.

198. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 575 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 723.

199. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 576 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 724.

200. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 577 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 725.

201. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 578 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 726.

202. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 579 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 727.

203. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 580 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 728.

204. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 581 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 729.

205. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 582 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 730.

206. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 583 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 731.

207. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 584 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 732.

208. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 585 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 733.

209. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 586 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 734.

210. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 587 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 735.

211. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 588 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 736.

212. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 589 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 737.

213. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 590 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 738.

214. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 591 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 739.

215. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 592 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 740.

216. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 593 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 741.

217. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 594 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 742.

218. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 595 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 743.

219. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 596 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 744.

220. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 597 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 745.

221. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 598 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 746.

222. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 599 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 747.

223. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 600 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 748.

224. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 601 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 749.

225. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 602 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 750.

226. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 603 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 751.

227. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 604 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 752.

228. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 605 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 753.

229. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 606 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 754.

230. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 607 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 755.

231. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 608 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 756.

232. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 609 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 757.

233. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 610 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 758.

234. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 611 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 759.

235. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 612 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 760.

236. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 613 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 761.

237. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 614 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 762.

238. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 615 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 763.

239. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 616 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 764.

240. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 617 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 765.

241. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 618 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 766.

242. The antibody of claim 16 or claim 17, wherein the VH comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 619 and the VL comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 767.

243. The antibody of claim 16 or claim 17, wherein the antibody binds C3 and reduces complement activation.

244. The antibody of claim 16 or claim 17, wherein the antibody binds human C3 with a K_D of about 100 nM or lower.

245. The antibody of claim 16 or claim 17, wherein the antibody attenuates complement component 3 (C3) convertase activity.

246. The antibody of claim 16 or claim 17, wherein the antibody is a monoclonal antibody, a human antibody, a humanized antibody, and/or a chimeric antibody.

247. The antibody of claim 16 or claim 17, wherein the antibody is a fragment selected from the group consisting of Fab, Fab-C, Fab′-SH, Fv, scFv, and $(Fab')_2$ fragments.

248. The antibody of claim 16 or claim 17, wherein the antibody is a monospecific antibody.

249. The antibody of claim 16 or claim 17, wherein the antibody is a bispecific antibody.

250. The antibody of claim 16 or claim 17, wherein the antibody comprises a detection moiety.

251. The antibody of claim 16 or claim 17, wherein the antibody comprises a purification moiety.

252. The antibody of claim 16 or claim 17, wherein the antibody comprises a half-life extension moiety.

253. The antibody of claim 237, wherein the half-life extension moiety comprises a polypeptide that is at least 20 amino acids in length and comprises any combination of G, A, S T, E, and P residues.

254. The antibody of claim 237, wherein the half-life extension polypeptide is attached to the C-terminus or N-terminus of the antibody.

255. A pharmaceutical composition comprising any of the antibodies of claims 1 to 239.

256. The composition of claim 240, wherein the composition is suitable for ocular administration.

257. The composition of claim 241, wherein the ocular administration comprises injection into vitreous fluid.

258. The composition of claim 241, wherein the ocular administration comprises delivering the antibody using a conjunctival insert, a contact lens, a gel, a nanoparticle, a mucoadhesive polymer, an ointment, a solution, a suspension, eye drops, and/or an implant.

259. A method of treating age-related macular degeneration (AMD) comprising administering a pharmaceutical composition comprising an effective amount of the antibody of claim 1 or claim 2 to a subject in need thereof.

260. The method of claim 244, wherein the pharmaceutical composition is administered ocularly and treats at least one AMD symptom.

261. The method of claim 244, wherein AMD comprises wet AMD.

262. The method of claim 244, wherein AMD comprises dry AMD.

263. The method of any of claims 244-247, wherein the at least one AMD symptom comprises visual distortion, reduced central vision, blurred vision, and/or difficulty adapting to low light.

264. The method of any of claims 244-248, wherein administering the pharmaceutical composition reduces complement activation in the subject's eye.

265. The method of any of claims 244-249, wherein the pharmaceutical composition is administered at a dose ranging from about 0.0001 mg/dose to about 100 mg/dose.

266. The method of any of claims 244-163, wherein the pharmaceutical composition is administered at a dose ranging from about 0.0001 mg/ml to about 100 mg/ml.

267. A polynucleotide comprising a nucleic acid sequence that is at least 70% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693.

268. A polynucleotide comprising a nucleic acid sequence that is at least 70% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989.

269. A polynucleotide comprising a nucleic acid sequence that is at least 80% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693.

270. A polynucleotide comprising a nucleic acid sequence that is at least 80% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989.

271. A polynucleotide comprising a nucleic acid sequence that is at least 90% identical to any of SEQ ID NOs: 472-545, and/or SEQ ID NOs: 620-693.

272. A polynucleotide comprising a nucleic acid sequence that is at least 90% identical to any of SEQ ID NOs: 768-841, and/or SEQ ID NOs: 916-989.

273. An expression vector comprising any of the polynucleotides of claims 252-257.

274. The expression vector of claim 258, wherein the expression vector is at least one of: an adeno-associated virus (AAV) vector, a lentiviral (LV) vector, a herpes simplex virus (HSV) vector, and a retrovirus vector.

275. A method of administering ocular gene therapy to a subject in need thereof comprising injecting a pharmaceutical composition comprising an effective amount of the expression vector of claim 259.

276. A method of treating age-related macular degeneration (AMD) comprising administering a pharmaceutical composition comprising an effective amount of the expression vector of claim 259, wherein administering the pharmaceutical composition treats at least one AMD symptom.

277. The antibody of claim 16 or claim 17, wherein the antibody binds an epitope from a C3 polypeptide having an amino acid sequence of SEQ ID NO: 1064.

FIG. 1A:

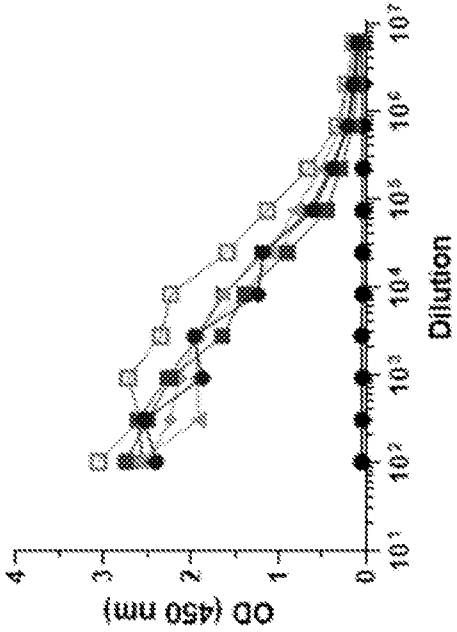


FIG. 1B:

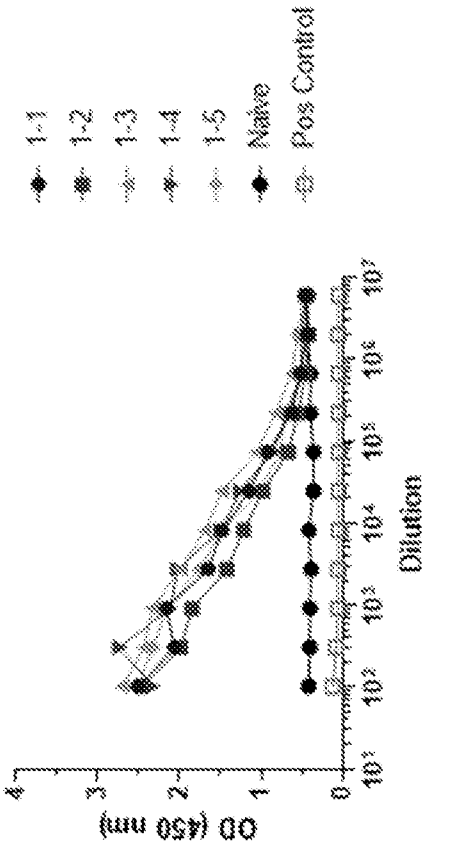


FIG. 1C:

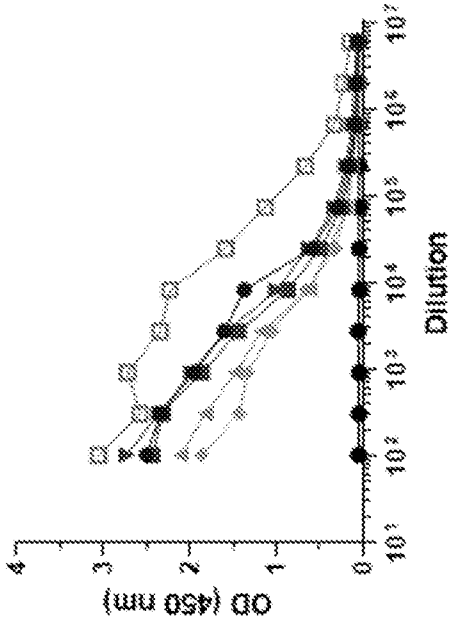
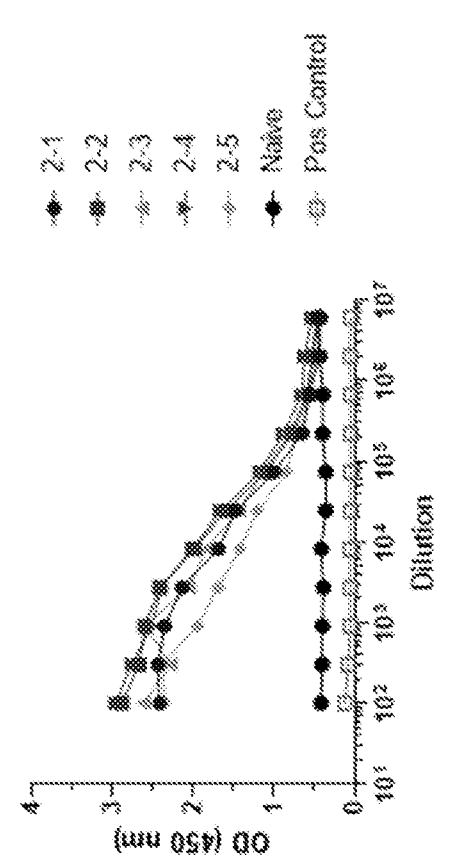


FIG. 1D:



FIGS. 1A-1D

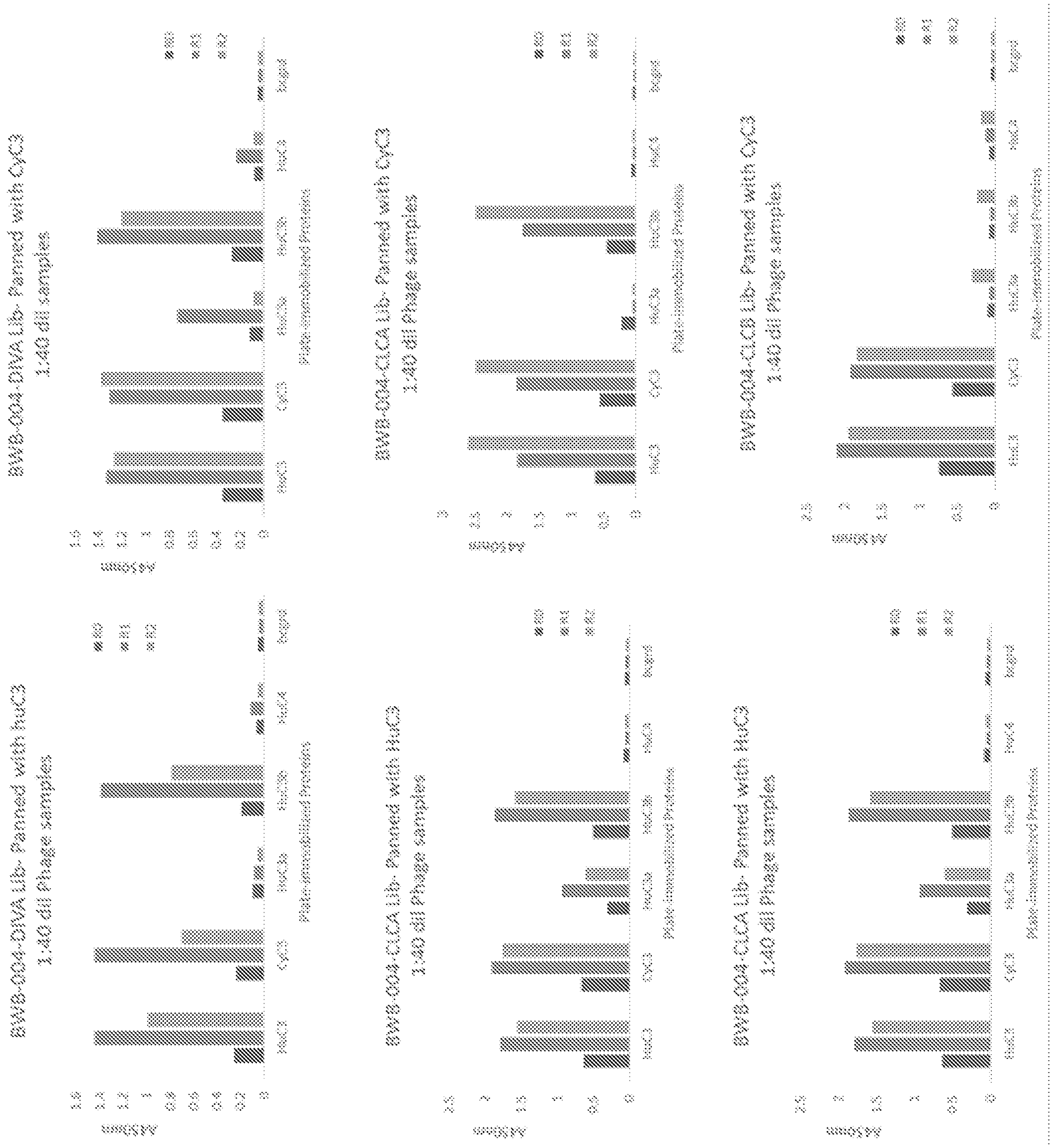

BWB-004-DIVA Lib- Panned with huC3
1:40 dil Phage samples
BWB-004-DIVA Lib- Panned with CyC3
1:40 dil Phage samples
BWB-004-CLCA Lib- Panned with HuC3
1:40 dil Phage samples
BWB-004-CLCA Lib- Panned with CyC3
1:40 dil Phage samples
BWB-004-CLCA Lib- Panned with HuC3
1:40 dil Phage samples
BWB-004-CLCB Lib- Panned with CyC3
1:40 dil Phage samples
A450nm

FIG. 2

Sample Info		KD (M)			Binding (based on response)			
Sample ID	Type	huC3b (Comtech)	huC3a (Comtech)	huC3 (Acro)	huC3, Comtech (Positive)	huC3b, Comtech (Positive)	cynoC3, Comtech (Positive)	huC3a, Comtech (Negative)
ATX-P-3360	Sample	1.3E-08	N.B.	7.5E-09	Binder	Binder	Binder	Non-binder
ATX-P-3362	Sample	1.9E-07	N.B.	9.1E-08	Binder	Binder	Non-binder	Non-binder
ATX-P-3363	Sample	1.3E-08	N.B.	1.1E-08	Binder	Binder	Binder	Non-binder
ATX-P-3365	Sample	6.2E-09	N.B.	1.7E-07	Binder	Binder	Binder	Non-binder
ATX-P-3367	Sample	1.9E-07	N.B.	1.0E-08	Binder	Very weak-binder	Non-binder	Non-binder
ATX-P-3369	Sample	N.B.	7.2E-09	5.9E-08	Binder	Non-binder	Non-binder	Binder
ATX-P-3370	Sample	5.9E-08	N.B.	1.4E-08	Binder	Non-binder	Non-binder	Non-binder
ATX-P-3371	Sample	3.4E-08	N.B.	3.3E-09	Binder	Weak-binder	Weak-binder	Non-binder
ATX-P-3373	Sample	5.5E-09	N.B.	5.2E-08	Binder	Binder	Binder	Non-binder
ATX-P-3375	Sample	N.B.	N.B.	6.9E-08	Binder	Non-binder	Non-binder	Non-binder
ATX-P-3378	Sample	4.3E-09	N.B.	6.6E-08	Binder	Binder	Binder	Non-binder
ATX-P-3382	Sample	3.2E-08	N.B.	5.4E-08	Binder	Binder	Binder	Non-binder
ATX-P-3383	Sample	9.4E-09	N.B.	2.0E-07	Binder	Binder	Binder	Non-binder
ATX-P-3384	Sample	8.2E-09	N.B.	2.3E-07	Binder	Binder	Binder	Non-binder
ATX-P-3386	Sample	2.5E-08	N.B.	3.5E-08	Binder	Binder	Binder	Non-binder
ATX-P-3387	Sample	1.7E-08	N.B.	1.2E-07	Binder	Binder	Binder	Non-binder
ATX-P-3389	Sample	3.6E-09	N.B.	4.9E-08	Binder	Binder	Binder	Non-binder
ATX-P-3391	Sample	5.0E-09	N.B.	3.9E-09	Binder	Binder	Binder	Non-binder
ATX-P-3392	Sample	9.4E-09	N.B.	8.9E-08	Binder	Binder	Binder	Non-binder
ATX-P-3395	Sample	2.9E-09	N.B.	2.1E-07	Binder	Binder	Binder	Non-binder
ATX-P-3396	Sample	N.B.	W.B.	1.2E-07	Binder	Non-binder	Binder	Binder
ATX-P-3397	Sample	3.1E-09	N.B.	5.1E-10	Binder	Binder	Binder	Non-binder
ATX-P-3405	Sample	1.7E-07	N.B.	1.1E-07	Binder	Binder	Weak-binder	Non-binder
ATX-P-3406	Sample	1.9E-09	N.B.	3.3E-08	Binder	Binder	Binder	Non-binder
ATX-P-3407	Sample	2.1E-08	N.B.	1.5E-08	Binder	Binder	Binder	Non-binder
ATX-P-3408	Sample	3.1E-10	N.B.	1.8E-10	Binder	Binder	Binder	Non-binder
ATX-P-3410	Sample	2.2E-08	N.B.	6.0E-08	Binder	Binder	Binder	Non-binder

FIG. 3

ATX-P-3412	Sample	3.1E-08	N.B.	6.7E-09	Binder	Binder	Binder	Non-binder
ATX-P-3413	Sample	1.5E-08	N.B.	8.3E-08	Binder	Binder	Binder	Non-binder
ATX-P-3414	Sample	3.1E-09	N.B.	1.1E-07	Binder	Binder	Binder	Non-binder
ATX-P-3419	Sample	3.9E-08	N.B.	3.4E-08	Binder	Binder	Non-binder	Non-binder
ATX-P-3421	Sample	3.5E-09	N.B.	2.9E-09	Binder	Binder	Binder	Non-binder
ATX-P-3428	Sample	3.4E-10	N.B.	1.6E-10	Binder	Binder	Non-binder	Non-binder
ATX-P-3430	Sample	4.6E-08	N.B.	1.5E-08	Binder	Binder	Weak binder	Non-binder
ATX-P-3431	Sample	1.9E-09	N.B.	1.6E-07	Binder	Binder	Binder	Non-binder
ATX-P-3435	Sample	4.1E-09	N.B.	2.5E-09	Binder	Binder	Non-binder	Non-binder
ATX-P-3436	Sample	1.7E-09	N.B.	8.1E-11	Binder	Weak binder	Non-binder	Non-binder
ATX-P-3437	Sample	2.6E-08	N.B.	1.3E-07	Binder	Binder	Binder	Non-binder
ATX-P-3440	Sample	1.1E-08	N.B.	1.2E-08	Binder	Binder	Binder	Non-binder
ATX-P-3442	Sample	4.2E-09	N.B.	1.6E-08	Binder	Binder	Binder	Non-binder
ATX-P-3444	Sample	2.9E-10	N.B.	1.4E-10	Binder	Binder	Binder	Non-binder
ATX-P-3447	Sample	2.0E-08	N.B.	8.1E-11	Binder	Weak binder	Non-binder	Non-binder
ATX-P-3448	Sample	1.5E-08	N.B.	1.9E-09	Binder	Binder	Binder	Non-binder
ATX-P-3449	Sample	W.B.	N.B.	2.4E-09	Binder	Very weak binder	Non-binder	Non-binder
ATX-P-3450	Sample	W.B.	N.B.	3.3E-08	Binder	Non-binder	Non-binder	Non-binder
ATX-P-3451	Sample	2.0E-08	N.B.	P.F.	Binder	Binder	Binder	Non-binder
ATX-P-3453	Sample	1.5E-09	N.B.	5.3E-10	Binder	Binder	Binder	Non-binder
ATX-P-3454	Sample	3.4E-09	N.B.	2.3E-09	Binder	Binder	Binder	Non-binder
ATX-P-3455	Sample	1.9E-09	N.B.	1.0E-09	Binder	Binder	Binder	Non-binder
ATX-P-3456	Sample	5.3E-09	N.B.	2.8E-09	Binder	Binder	Binder	Non-binder
ATX-P-3458	Sample	5.8E-08	N.B.	1.2E-09	Binder	Binder	Binder	Non-binder
ATX-P-3459	Sample	2.1E-09	N.B.	8.9E-10	Binder	Binder	Binder	Non-binder
ATX-P-3462	Sample	2.7E-09	N.B.	2.3E-09	Binder	Binder	Binder	Non-binder
ATX-P-3463	Sample	2.1E-09	N.B.	1.3E-08	Binder	Binder	Binder	Non-binder
ATX-P-3466	Sample	2.7E-09	N.B.	1.6E-09	Binder	Binder	Binder	Non-binder
ATX-P-3467	Sample	1.7E-08	N.B.	P.F.	Binder	Binder	Binder	Non-binder
ATX-P-3468	Sample	1.1E-08	N.B.	3.1E-09	Binder	Binder	Binder	Non-binder
ATX-P-3469	Sample	1.8E-09	N.B.	6.6E-09	Binder	Binder	Binder	Non-binder
ATX-P-3470	Sample	1.2E-08	N.B.	2.0E-08	Binder	Binder	Binder	Non-binder
ATX-P-3471	Sample	W.B.	1.3E-09	1.5E-09	Binder	Non-binder	Binder	Binder
ATX-P-3472	Sample	4.3E-09	N.B.	5.3E-08	Binder	Binder	Binder	Non-binder
ATX-P-3361	Sample	4.9E-08	N.B.	2.9E-08	Binder	Binder	Binder	Non-binder
ATX-P-3366	Sample	1.2E-05	N.B.	P.F.	Binder	Binder	Weak binder	Non-binder
ATX-P-3376	Sample	N.B.	N.B.	1.2E-07	Binder	Non-binder	Non-binder	Non-binder
ATX-P-3377	Sample	1.5E-08	N.B.	1.6E-09	Binder	Weak binder	Non-binder	Non-binder
ATX-P-3418	Sample	3.4E-08	N.B.	2.4E-09	Binder	Binder	Binder	Non-binder
ATX-P-3420	Sample	1.4E-08	N.B.	1.0E-09	Binder	Binder	Binder	Non-binder
ATX-P-3426	Sample	3.0E-08	N.B.	2.9E-09	Binder	Binder	Binder	Non-binder

FIG. 3 (cont'd)

ATX-P-3432	Sample	2.6E-10	N.B.	5.0E-10	Binder	Binder	Binder	Non-binder
ATX-P-3433	Sample	9.3E-09	N.B.	6.1E-09	Binder	Binder	Binder	Non-binder
ATX-P-3438	Sample	9.6E-10	N.B.	8.1E-10	Binder	Binder	Binder	Non-binder
ATX-P-3441	Sample	1.0E-09	N.B.	6.4E-10	Binder	Binder	Binder	Non-binder
ATX-P-3446	Sample	2.9E-09	N.B.	5.8E-11	Binder	Binder	Non-binder	Non-binder
ATX-P-3452	Sample	6.9E-09	W.B.	3.9E-09	Binder	Binder	Binder	Non-binder
ATX-P-1899	Comparator	N/A	N/A	4.6E-10	Binder	Binder	Non-binder	Non-binder

Kinetics Notation	
Abbreviation	Definition
N.B.	Non-binder
W.B.	Weak-binder
P.F.	Poor-fitting (R_{esSD}/R_{max} > 10)
L.R.	Low-response (KD not determined)

Cross-Reactivity Notation	
Notation	Definition
Binder	Above-threshold response
Weak	Intermediate response
Non-binder	Below-threshold response

Sample Types	
Type	Definition
Sample	Alloy discovery hits
Comparator	Benchmark produced for campaign
Positive control	Commercial clone / detection reagent
Negative control	Internal isotype controls

FIG. 3 (cont'd)

Sample Info		Antigens in solution @ 1000 pM							
		hsa1 (positive)		hsa2h (positive)		cynos1 (positive)		hsa2a (negative)	
Sample ID	Type	Norm. RU	Binding	Norm. RU	Binding	Norm. RU	Binding	Norm. RU	Binding
ATX-P-3360	Sample	1629.0	Binder	1259.5	Binder	1243.1	Binder	0.0	Non-binder
ATX-P-3362	Sample	969.4	Binder	423.6	Binder	50.5	Non-binder	0.0	Non-binder
ATX-P-3363	Sample	1417.5	Binder	1476.7	Binder	1166.2	Binder	0.0	Non-binder
ATX-P-3365	Sample	1434.0	Binder	1227.2	Binder	934.3	Binder	0.0	Non-binder
ATX-P-3367	Sample	1481.8	Binder	93.4	Very weak-binder	21.6	Non-binder	0.0	Non-binder
ATX-P-3369	Sample	1535.4	Binder	14.3	Non-binder	0.0	Non-binder	87.9	Binder
ATX-P-3370	Sample	1291.3	Binder	49.7	Non-binder	34.3	Non-binder	0.0	Non-binder
ATX-P-3371	Sample	1302.0	Binder	123.5	Weak-binder	156.3	Weak-binder	0.0	Non-binder
ATX-P-3373	Sample	1850.7	Binder	1544.0	Binder	1490.9	Binder	0.0	Non-binder
ATX-P-3375	Sample	976.1	Binder	28.2	Non-binder	67.5	Non-binder	0.0	Non-binder
ATX-P-3378	Sample	1726.3	Binder	1528.5	Binder	1779.8	Binder	0.0	Non-binder
ATX-P-3382	Sample	1453.9	Binder	1275.1	Binder	833.0	Binder	0.0	Non-binder
ATX-P-3383	Sample	1751.0	Binder	1522.3	Binder	1571.4	Binder	0.0	Non-binder
ATX-P-3384	Sample	1435.4	Binder	1314.7	Binder	928.9	Binder	0.0	Non-binder
ATX-P-3386	Sample	949.8	Binder	1013.7	Binder	624.3	Binder	0.0	Non-binder
ATX-P-3387	Sample	737.6	Binder	761.2	Binder	362.9	Binder	0.0	Non-binder
ATX-P-3389	Sample	1324.8	Binder	1168.7	Binder	1264.8	Binder	0.0	Non-binder
ATX-P-3391	Sample	1971.3	Binder	1571.4	Binder	1248.5	Binder	2.3	Non-binder
ATX-P-3392	Sample	1468.8	Binder	1302.0	Binder	1303.6	Binder	0.0	Non-binder
ATX-P-3395	Sample	1737.0	Binder	1678.4	Binder	998.0	Binder	0.0	Non-binder
ATX-P-3396	Sample	1583.6	Binder	11.8	Non-binder	1123.4	Binder	61.5	Binder
ATX-P-3397	Sample	1582.0	Binder	1491.4	Binder	1231.9	Binder	0.0	Non-binder
ATX-P-3405	Sample	541.1	Binder	563.1	Binder	152.3	Weak-binder	0.0	Non-binder
ATX-P-3406	Sample	1728.5	Binder	1646.3	Binder	924.9	Binder	0.0	Non-binder
ATX-P-3407	Sample	1423.9	Binder	1312.2	Binder	1007.8	Binder	0.0	Non-binder
ATX-P-3408	Sample	1698.3	Binder	1469.2	Binder	1413.6	Binder	0.0	Non-binder
ATX-P-3410	Sample	706.0	Binder	833.7	Binder	608.9	Binder	0.0	Non-binder
ATX-P-3412	Sample	1198.1	Binder	891.8	Binder	616.3	Binder	0.0	Non-binder
ATX-P-3413	Sample	1356.2	Binder	1318.5	Binder	340.3	Binder	0.0	Non-binder
ATX-P-3414	Sample	1469.6	Binder	1487.1	Binder	863.3	Binder	0.0	Non-binder

FIG. 4

ATX-P-3419	Sample	1173.5	Binder	1004.3	Binder	0.0	Non-binder	0.0	Non-binder
ATX-P-3421	Sample	1736.1	Binder	1444.9	Binder	1290.3	Binder	0.0	Non-binder
ATX-P-3428	Sample	1619.1	Binder	1464.6	Binder	0.0	Non-binder	0.0	Non-binder
ATX-P-3430	Sample	616.9	Binder	580.0	Binder	203.6	Weak-binder	0.0	Non-binder
ATX-P-3431	Sample	1309.1	Binder	1242.6	Binder	587.1	Binder	0.3	Non-binder
ATX-P-3435	Sample	1492.8	Binder	1242.9	Binder	63.5	Non-binder	0.0	Non-binder
ATX-P-3436	Sample	1712.7	Binder	129.5	Weak-binder	22.1	Non-binder	0.0	Non-binder
ATX-P-3437	Sample	1698.4	Binder	1583.3	Binder	1135.0	Binder	0.0	Non-binder
ATX-P-3440	Sample	1480.2	Binder	1533.0	Binder	636.4	Binder	0.0	Non-binder
ATX-P-3442	Sample	1659.0	Binder	1387.1	Binder	1195.4	Binder	0.0	Non-binder
ATX-P-3444	Sample	1645.2	Binder	1646.0	Binder	787.2	Binder	0.0	Non-binder
ATX-P-3447	Sample	1235.6	Binder	127.4	Weak-binder	0.0	Non-binder	6.3	Non-binder
ATX-P-3448	Sample	1604.0	Binder	270.0	Binder	1364.0	Binder	0.4	Non-binder
ATX-P-3449	Sample	1524.9	Binder	62.0	Very weak-binder	80.7	Non-binder	0.0	Non-binder
ATX-P-3450	Sample	798.6	Binder	24.7	Non-binder	38.6	Non-binder	3.8	Non-binder
ATX-P-3451	Sample	390.1	Binder	1199.7	Binder	1440.7	Binder	0.0	Non-binder
ATX-P-3453	Sample	2057.8	Binder	1723.5	Binder	1636.5	Binder	0.0	Non-binder
ATX-P-3454	Sample	1543.4	Binder	1424.0	Binder	1311.3	Binder	0.0	Non-binder
ATX-P-3455	Sample	1978.6	Binder	1729.2	Binder	1713.2	Binder	0.0	Non-binder
ATX-P-3456	Sample	1925.0	Binder	1676.2	Binder	1516.8	Binder	0.0	Non-binder
ATX-P-3458	Sample	1630.6	Binder	583.4	Binder	1250.9	Binder	0.0	Non-binder
ATX-P-3459	Sample	1788.7	Binder	1606.3	Binder	1304.8	Binder	0.0	Non-binder
ATX-P-3462	Sample	2250.2	Binder	1840.9	Binder	1752.2	Binder	0.0	Non-binder
ATX-P-3463	Sample	1953.7	Binder	1591.0	Binder	1790.2	Binder	0.0	Non-binder
ATX-P-3466	Sample	2026.5	Binder	1738.6	Binder	1925.9	Binder	0.0	Non-binder
ATX-P-3467	Sample	1412.9	Binder	1263.7	Binder	702.6	Binder	0.0	Non-binder
ATX-P-3468	Sample	1752.7	Binder	1445.5	Binder	1660.0	Binder	0.0	Non-binder
ATX-P-3469	Sample	2078.2	Binder	1826.5	Binder	1993.8	Binder	0.0	Non-binder
ATX-P-3470	Sample	738.7	Binder	707.0	Binder	497.0	Binder	0.0	Non-binder
ATX-P-3471	Sample	2048.8	Binder	5.6	Non-binder	1839.1	Binder	93.8	Binder
ATX-P-3472	Sample	1762.5	Binder	1572.3	Binder	1546.6	Binder	0.0	Non-binder
ATX-P-3361	Sample	1029.3	Binder	980.5	Binder	954.7	Binder	0.0	Non-binder
ATX-P-3365	Sample	218.6	Binder	230.8	Binder	182.1	Weak-binder	0.0	Non-binder
ATX-P-3376	Sample	692.9	Binder	50.9	Non-binder	0.0	Non-binder	0.0	Non-binder
ATX-P-3377	Sample	1406.8	Binder	123.4	Weak-binder	20.0	Non-binder	2.9	Non-binder
ATX-P-3418	Sample	1591.0	Binder	1555.9	Binder	1069.8	Binder	0.0	Non-binder
ATX-P-3420	Sample	1777.0	Binder	1787.3	Binder	433.4	Binder	0.0	Non-binder
ATX-P-3426	Sample	1866.9	Binder	632.8	Binder	1768.6	Binder	0.9	Non-binder
ATX-P-3432	Sample	2161.9	Binder	1868.4	Binder	1788.3	Binder	0.0	Non-binder

FIG. 4
(cont'd)

ATX-P-3433	Sample	1281.5	Binder	706.5	Binder	629.2	Binder	0.0	Non-binder
ATX-P-3438	Sample	1941.3	Binder	1689.9	Binder	1592.3	Binder	0.8	Non-binder
ATX-P-3441	Sample	1746.0	Binder	1547.0	Binder	1482.9	Binder	0.0	Non-binder
ATX-P-3446	Sample	1622.7	Binder	246.5	Binder	35.0	Non-binder	0.0	Non-binder
ATX-P-3452	Sample	1788.2	Binder	1404.7	Binder	1259.6	Binder	0.0	Non-binder
ATX-P-1899	Comparator	1643.0	Binder	1690.8	Binder	0.0	Non-binder	0.0	Non-binder
ATX-P-84	Negative Control	0.0	Non-binder	0.0	Non-binder	75.1	Non-binder	2.2	Non-binder

CrossReactivity Notation	
Notation	Definition
Binder	Above-threshold response
Weak-binder	Intermediate response
Very weak-binder	Slightly-above threshold
Non-binder	Below-threshold response

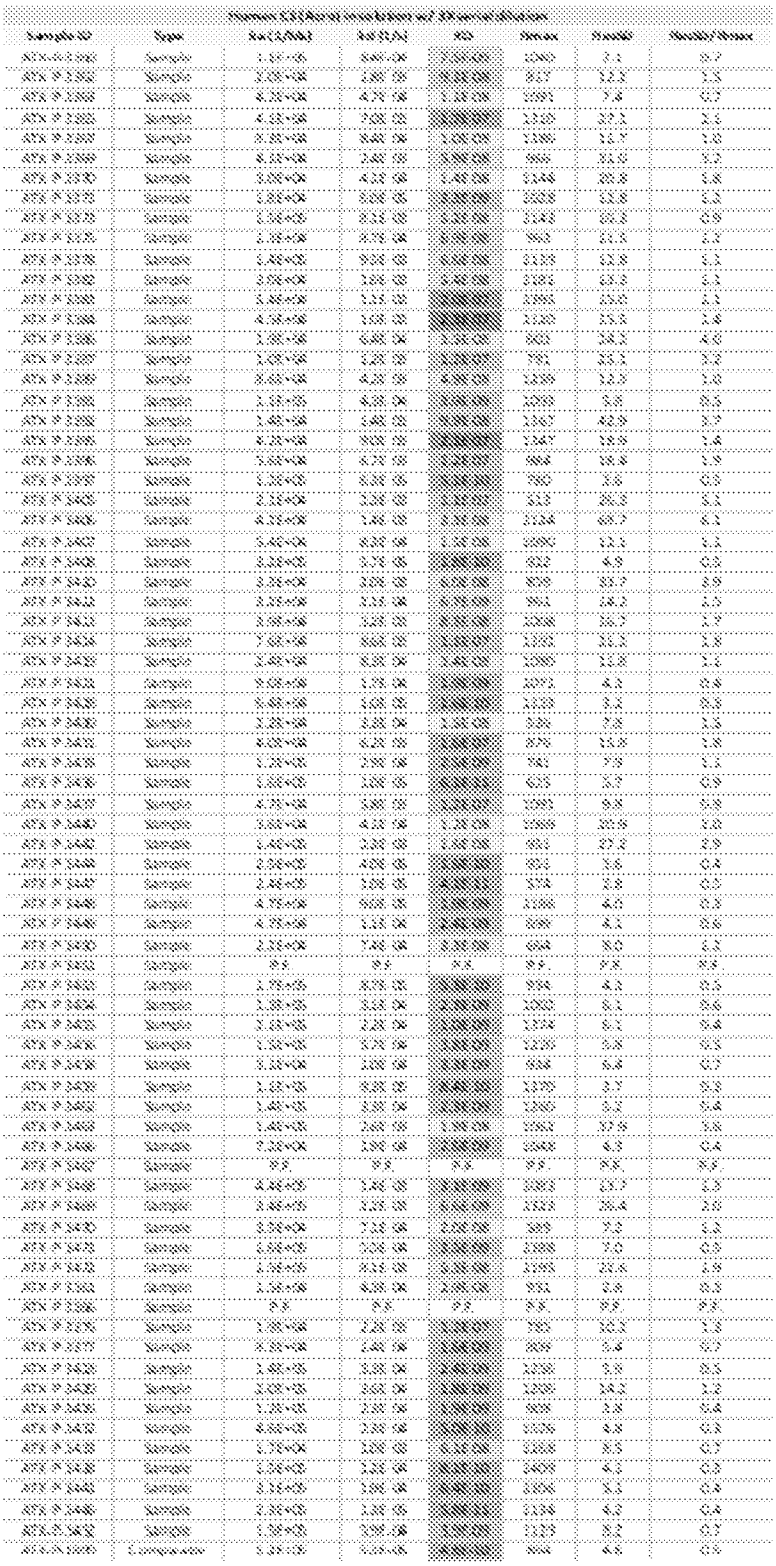
Sample Types	
Type	Definition
Sample	Alloy discovery hits
Comparator	Benchmark produced for campaign
Positive control	Commercial clone / detection reagent
Negative control	Internal isotype controls

Thresholds & Categorization		
Reagent	Rank	Low
huC3 (Positive)	Binder	200.0
	Weak-binder	100.0
	Very weak-binder	50.0
huC3b (Positive)	Binder	200.0
	Weak-binder	100.0
	Very weak-binder	50.0
cynoC3 (Positive)	Binder	250.0
	Weak-binder	150.0
	Very weak-binder	100.0
huC3a (Negative)	Binder	50.0
	Weak-binder	30.0
	Very weak-binder	20.0

FIG. 4 (cont'd)

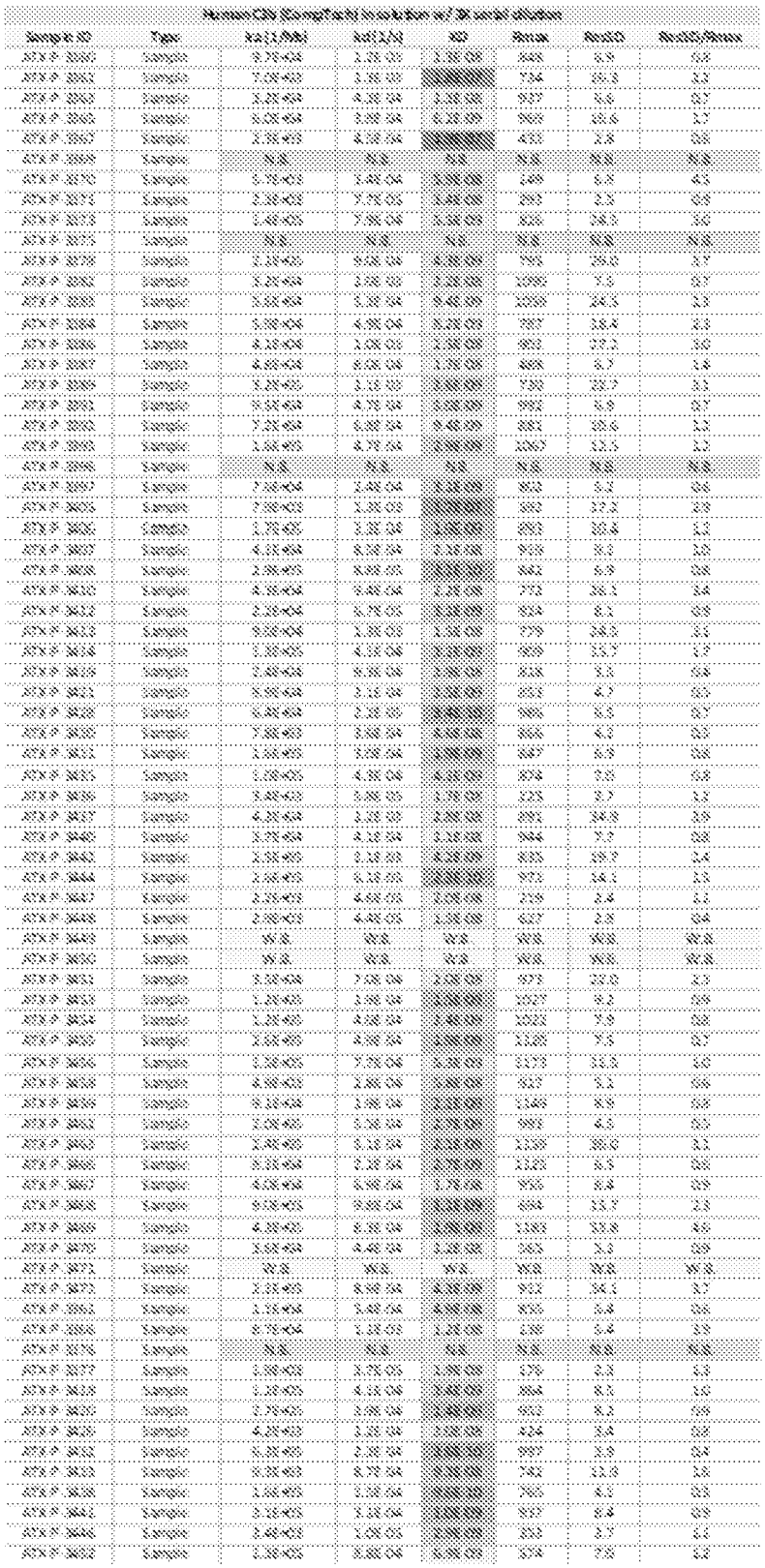
SUBSTITUTE SHEET (RULE 26)

FIG. 5A:



FIGS. 5A-5B

FIG. 5B:



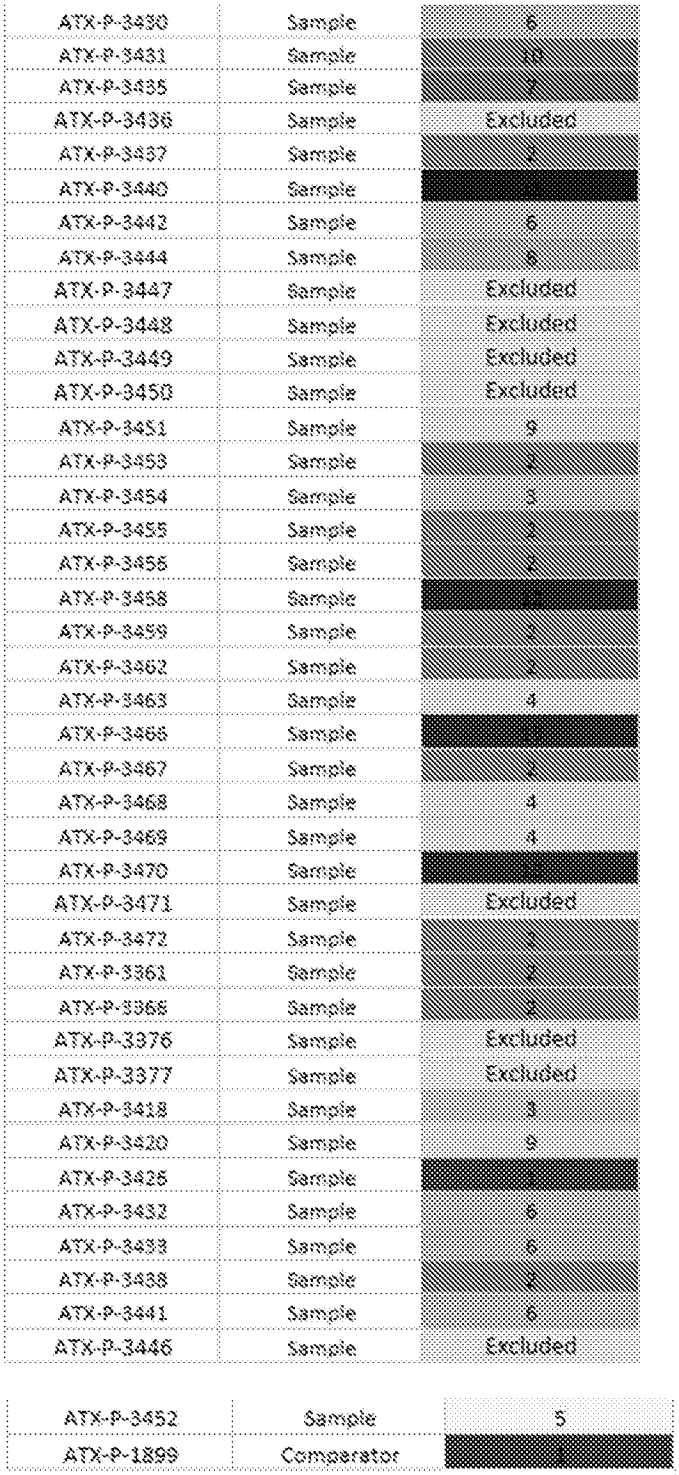
FIGS. 5A-5B (cont'd)

FIG. 6A:

Binning Allocations		
Sample ID	Type	Community
ATX-P-3360	Sample	2
ATX-P-3362	Sample	3
ATX-P-3363	Sample	2
ATX-P-3365	Sample	2
ATX-P-3367	Sample	Excluded
ATX-P-3369	Sample	Excluded
ATX-P-3370	Sample	Excluded
ATX-P-3371	Sample	Excluded
ATX-P-3373	Sample	2
ATX-P-3375	Sample	Excluded
ATX-P-3378	Sample	2
ATX-P-3382	Sample	2
ATX-P-3383	Sample	2
ATX-P-3384	Sample	2
ATX-P-3386	Sample	2
ATX-P-3387	Sample	2
ATX-P-3389	Sample	2
ATX-P-3391	Sample	2
ATX-P-3392	Sample	2
ATX-P-3395	Sample	4
ATX-P-3396	Sample	Excluded
ATX-P-3397	Sample	5
ATX-P-3405	Sample	5
ATX-P-3406	Sample	6
ATX-P-3407	Sample	5
ATX-P-3408	Sample	5
ATX-P-3410	Sample	7
ATX-P-3412	Sample	6
ATX-P-3413	Sample	6
ATX-P-3414	Sample	6
ATX-P-3419	Sample	7
ATX-P-3421	Sample	7
ATX-P-3428	Sample	7

FIGS. 6A-6D

FIG. 6A: (cont'd)



ATX-P-3430	Sample	6
ATX-P-3431	Sample	10
ATX-P-3435	Sample	7
ATX-P-3436	Sample	Excluded
ATX-P-3437	Sample	2
ATX-P-3440	Sample	11
ATX-P-3442	Sample	6
ATX-P-3444	Sample	8
ATX-P-3447	Sample	Excluded
ATX-P-3448	Sample	Excluded
ATX-P-3449	Sample	Excluded
ATX-P-3450	Sample	Excluded
ATX-P-3451	Sample	9
ATX-P-3453	Sample	8
ATX-P-3454	Sample	3
ATX-P-3455	Sample	7
ATX-P-3456	Sample	7
ATX-P-3458	Sample	11
ATX-P-3459	Sample	7
ATX-P-3462	Sample	7
ATX-P-3463	Sample	4
ATX-P-3466	Sample	11
ATX-P-3467	Sample	7
ATX-P-3468	Sample	4
ATX-P-3469	Sample	4
ATX-P-3470	Sample	11
ATX-P-3471	Sample	Excluded
ATX-P-3472	Sample	7
ATX-P-3361	Sample	7
ATX-P-3366	Sample	7
ATX-P-3376	Sample	Excluded
ATX-P-3377	Sample	Excluded
ATX-P-3418	Sample	3
ATX-P-3420	Sample	9
ATX-P-3426	Sample	11
ATX-P-3432	Sample	6
ATX-P-3433	Sample	6
ATX-P-3438	Sample	7
ATX-P-3441	Sample	6
ATX-P-3446	Sample	Excluded
ATX-P-3452	Sample	5
ATX-P-1899	Comparator	11

FIGS. 6A-6D (cont'd)

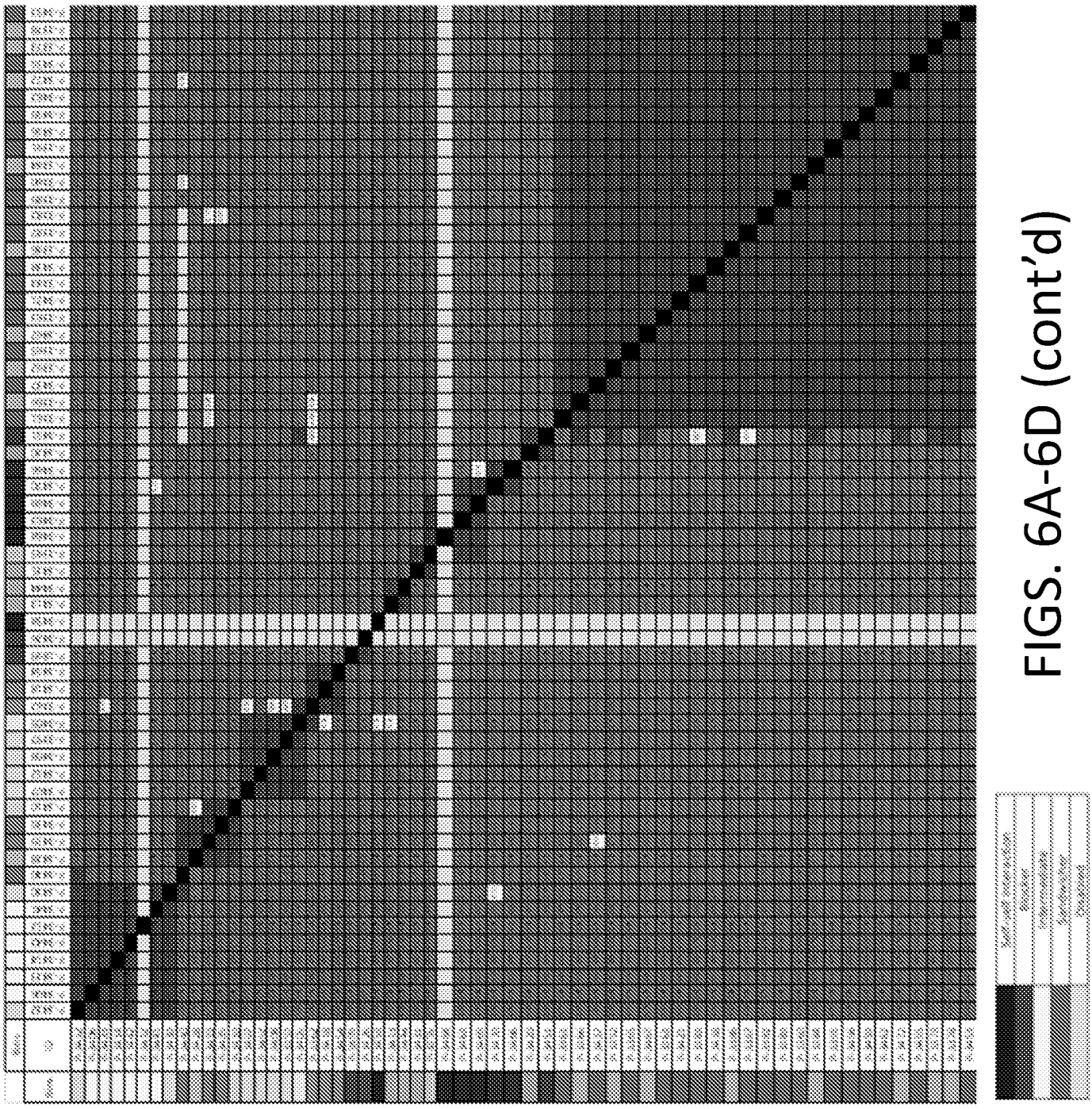


FIG. 6B:

FIGS. 6A-6D (cont'd)

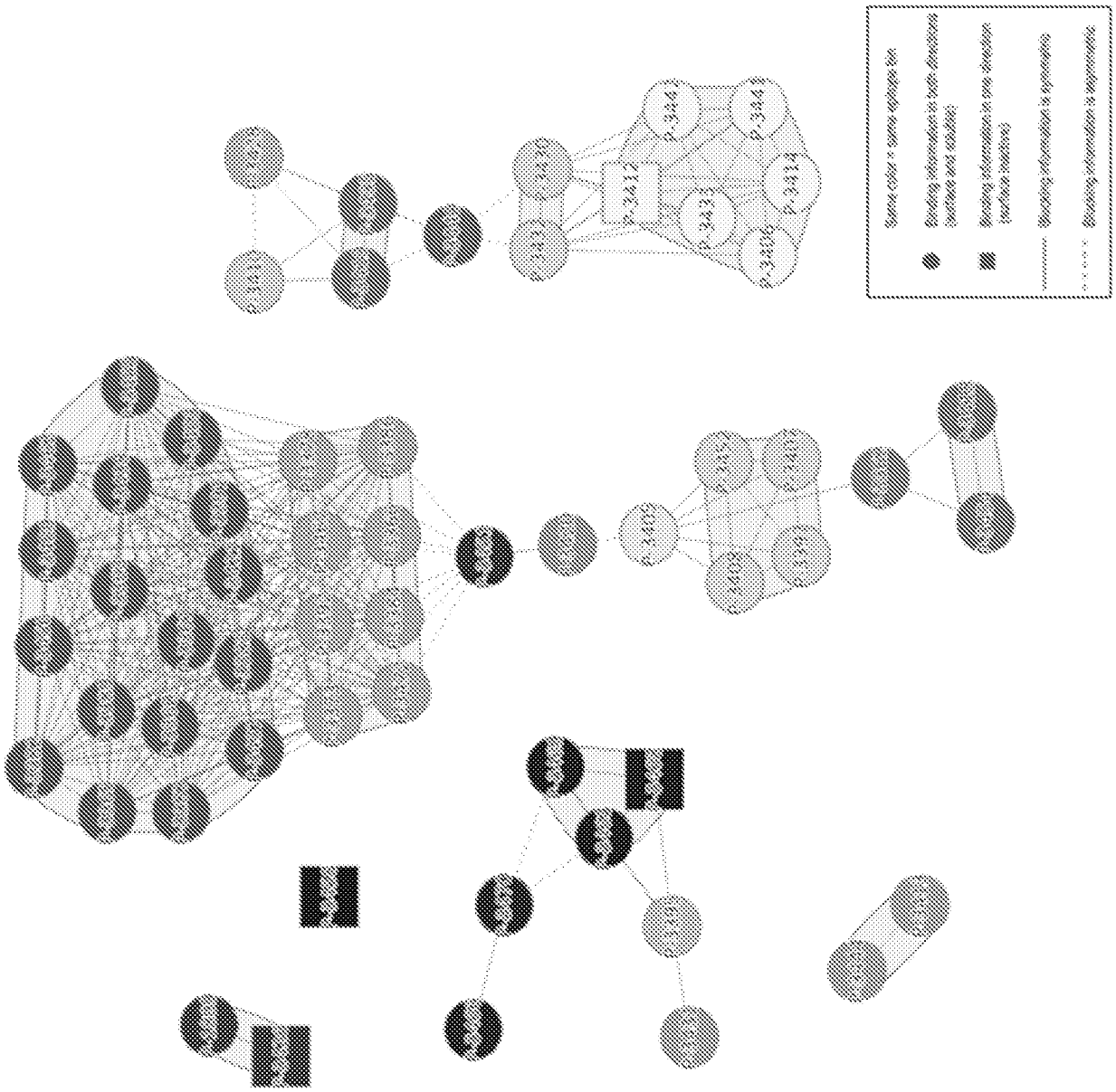


FIG. 6C:

FIGS. 6A-6D (cont'd)

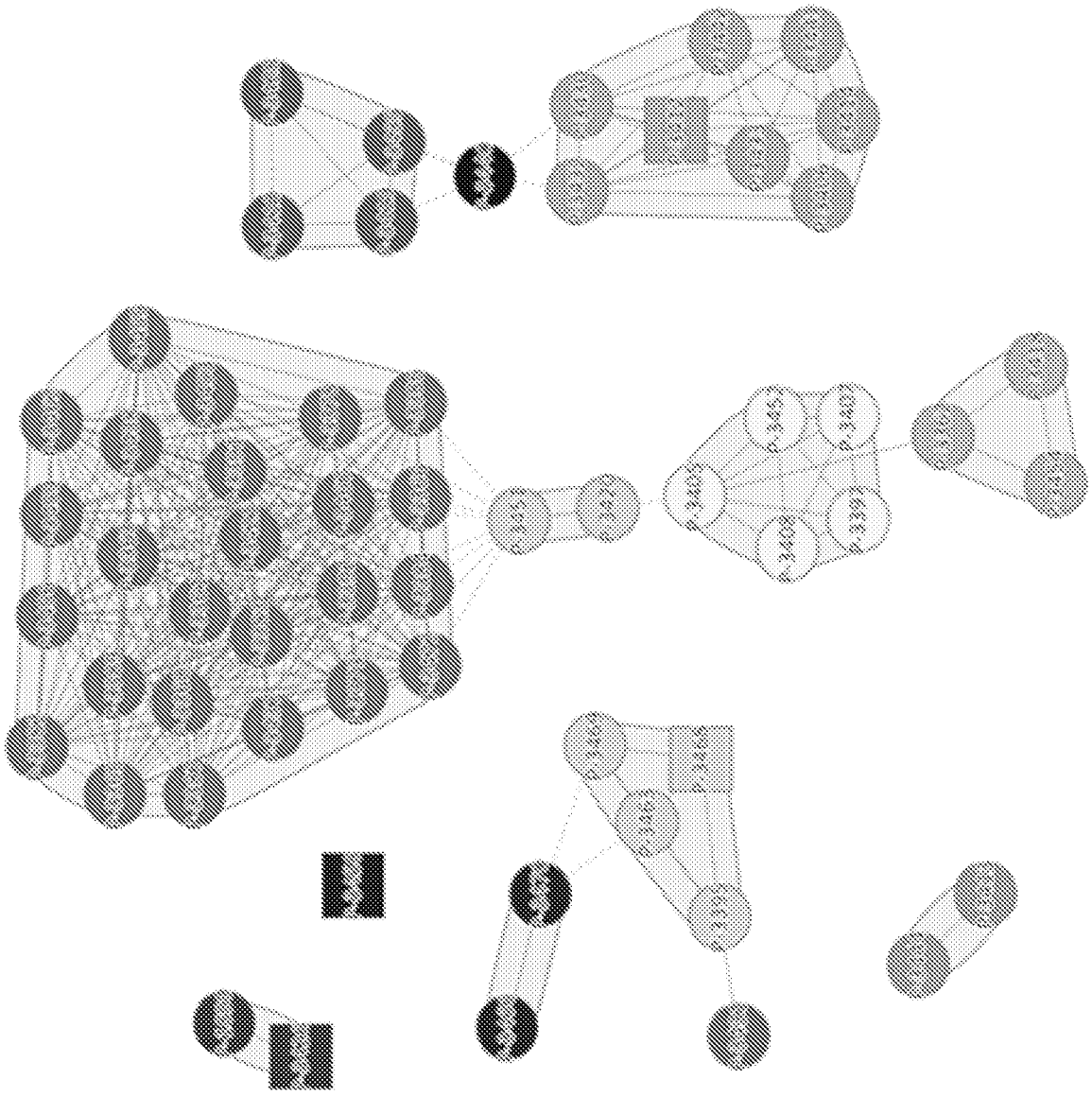
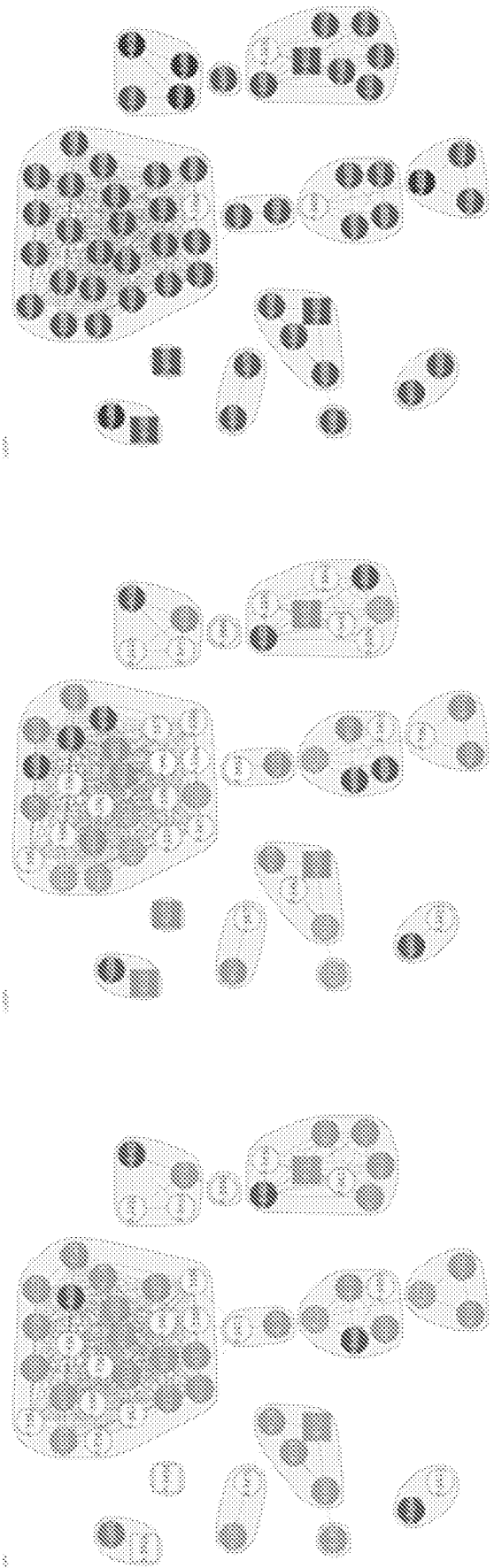


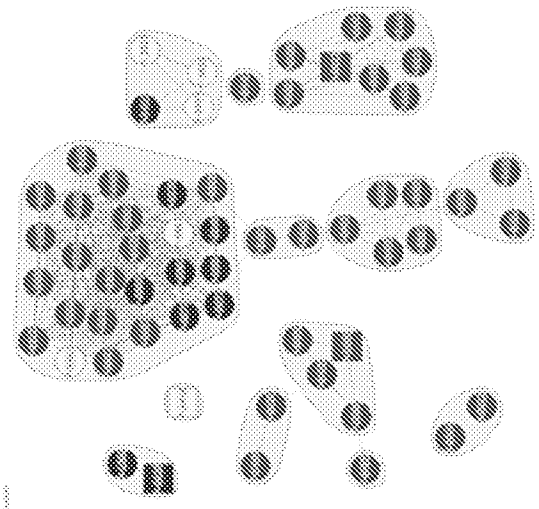
FIG. 6D:

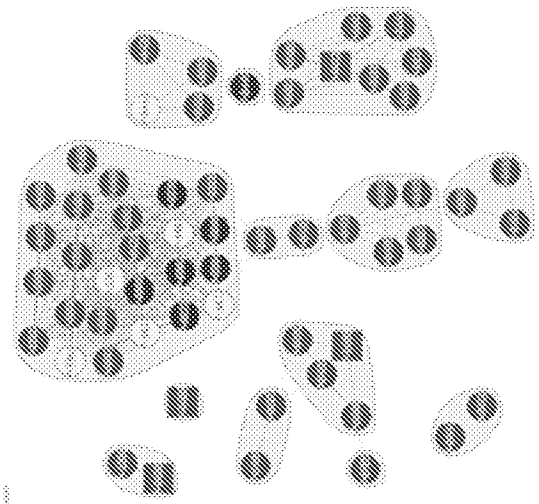
FIGS. 6A-6D (cont'd)

FIG. 7A:



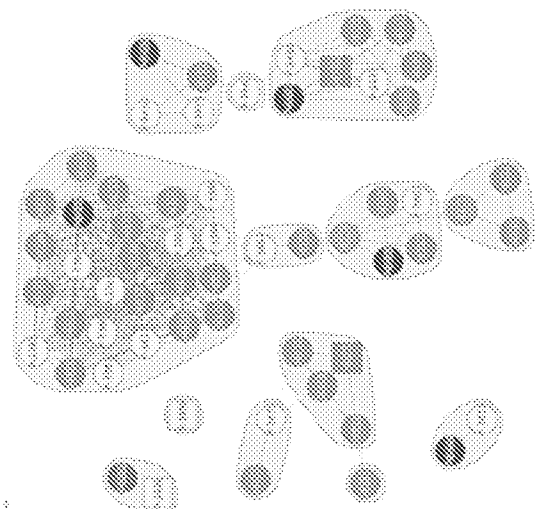
FIGS. 7A-7E





FIGS. 7A-7E (cont'd)

FIG. 7B:



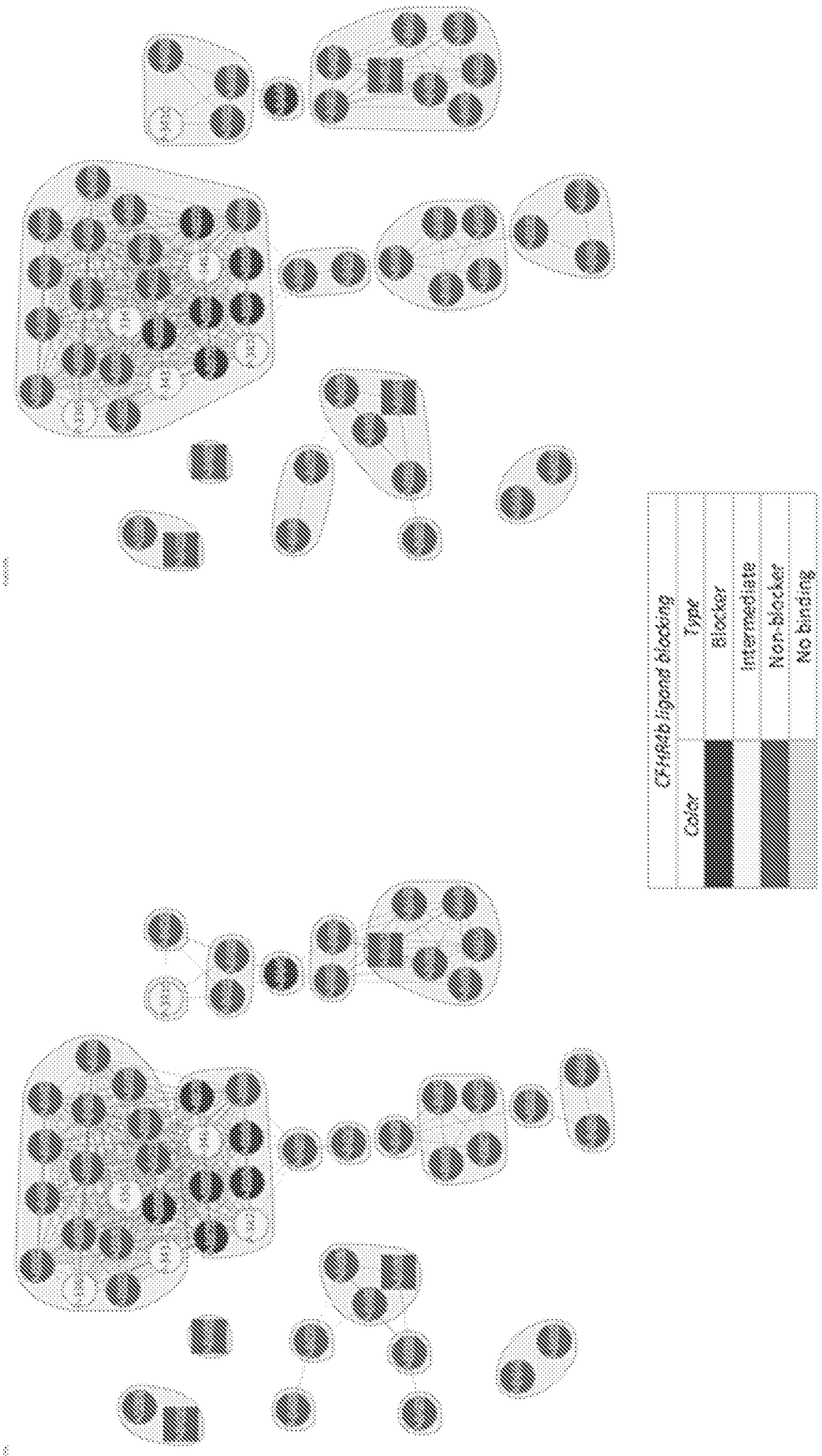
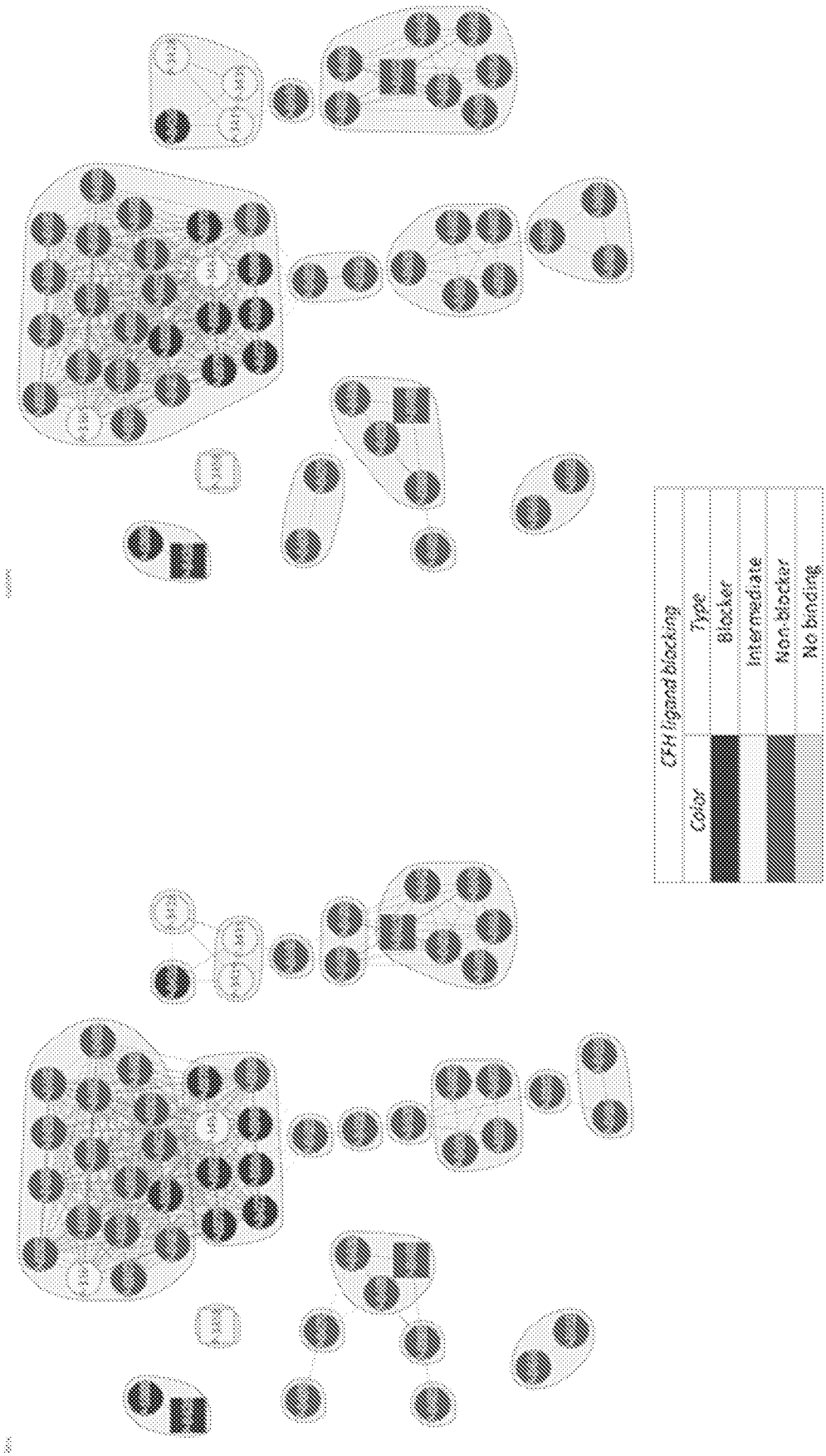


FIG. 7C:

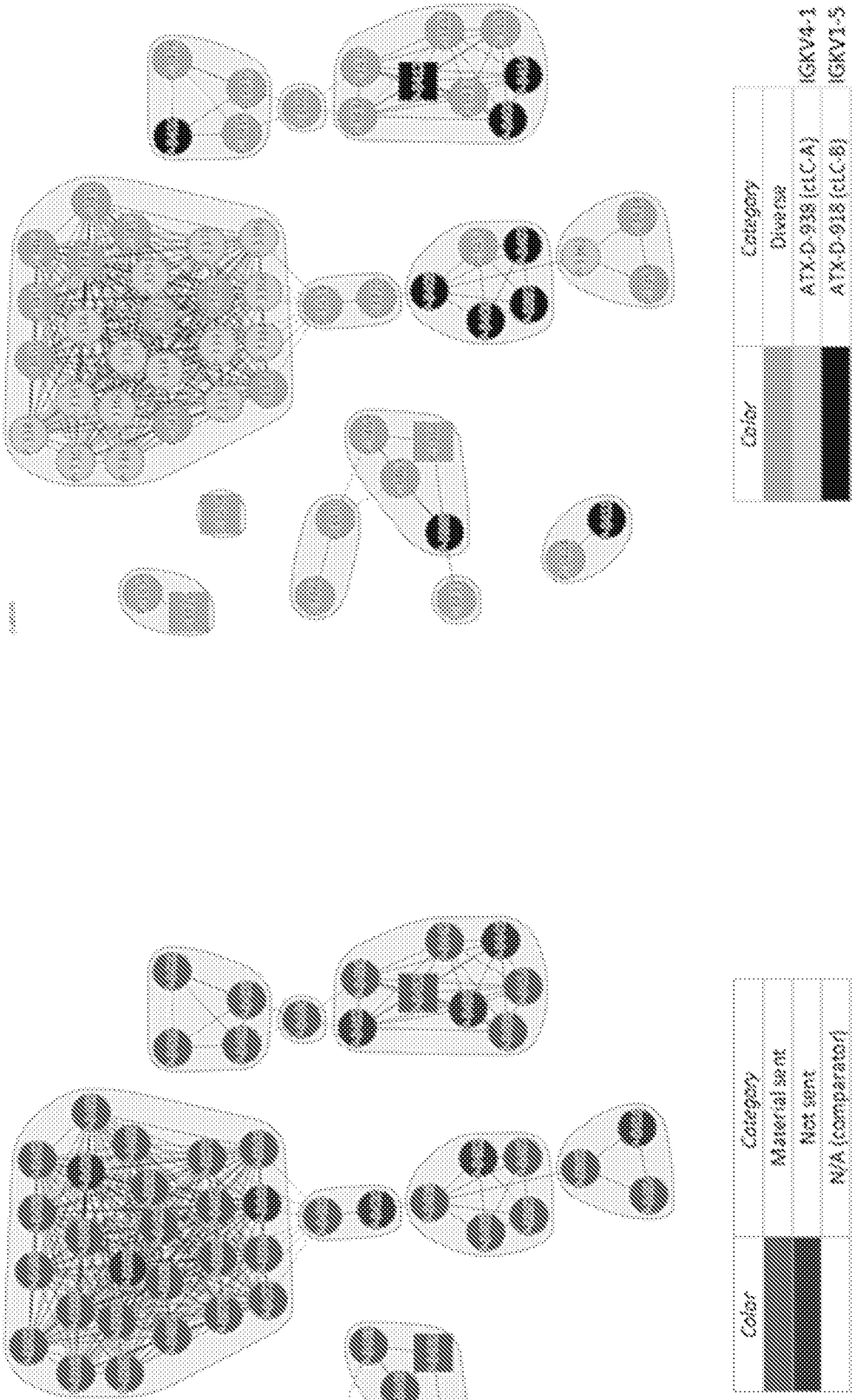
FIGS. 7A-7E (cont'd)

FIG. 7D:



FIGS. 7A-7E (cont'd)

FIG. 7E:



FIGS. 7A-7E (cont'd)

Sample Info		BVP / BSA Polyreactivity (Sampled)		
		BVP		Blank / BSA
Sample ID	Type	Fold-over BG	Normalized Score	Fold-over BG
ATX-P-3360	Sample	4.06	0.14	4.18
ATX-P-3362	Sample	1.24	0.04	1.72
ATX-P-3363	Sample	3.18	0.11	3.12
ATX-P-3365	Sample	2.11	0.07	1.87
ATX-P-3367	Sample	3.16	0.11	6.70
ATX-P-3369	Sample	3.70	0.13	2.62
ATX-P-3370	Sample	4.28	0.15	4.10
ATX-P-3371	Sample	4.48	0.16	4.49
ATX-P-3373	Sample	3.48	0.12	3.12
ATX-P-3375	Sample	3.97	0.14	4.56
ATX-P-3378	Sample	2.59	0.09	2.72
ATX-P-3382	Sample	1.84	0.06	2.25
ATX-P-3383	Sample	0.89	0.03	1.97
ATX-P-3384	Sample	5.19	0.18	2.45
ATX-P-3386	Sample	2.73	0.10	2.17
ATX-P-3387	Sample	3.16	0.11	2.81
ATX-P-3389	Sample	9.42	0.33	4.76
ATX-P-3391	Sample	2.32	0.08	2.10
ATX-P-3392	Sample	3.06	0.11	2.67
ATX-P-3395	Sample	1.97	0.07	2.06
ATX-P-3396	Sample	3.11	0.11	1.59
ATX-P-3397	Sample	2.29	0.08	2.02
ATX-P-3405	Sample	1.89	0.07	2.52
ATX-P-3406	Sample	3.09	0.11	1.92
ATX-P-3407	Sample	1.96	0.07	2.44
ATX-P-3408	Sample	1.72	0.06	2.54
ATX-P-3410	Sample	1.92	0.07	1.59

FIG. 8

ATX-P-3412	Sample	1.03	0.04	2.41
ATX-P-3413	Sample	2.63	0.09	3.20
ATX-P-3414	Sample	2.24	0.08	2.93
ATX-P-3419	Sample	3.14	0.11	2.11
ATX-P-3421	Sample	2.04	0.07	1.91
ATX-P-3428	Sample	0.86	0.03	1.73
ATX-P-3430	Sample	2.79	0.10	2.37
ATX-P-3431	Sample	3.31	0.12	2.49
ATX-P-3435	Sample	3.07	0.11	2.40
ATX-P-3436	Sample	6.03	0.21	4.14
ATX-P-3437	Sample	3.27	0.11	3.77
ATX-P-3440	Sample	2.59	0.09	3.33
ATX-P-3442	Sample	4.80	0.17	3.80
ATX-P-3444	Sample	5.37	0.19	4.52
ATX-P-3447	Sample	5.29	0.18	5.48
ATX-P-3448	Sample	5.51	0.19	4.15
ATX-P-3449	Sample	2.34	0.08	3.26
ATX-P-3450	Sample	6.08	0.21	3.54
ATX-P-3451	Sample	0.99	0.03	2.36
ATX-P-3453	Sample	0.91	0.03	1.70
ATX-P-3454	Sample	2.41	0.08	4.92
ATX-P-3455	Sample	0.76	0.03	1.79
ATX-P-3456	Sample	5.11	0.18	3.69
ATX-P-3458	Sample	1.69	0.06	3.50
ATX-P-3459	Sample	1.90	0.07	3.83
ATX-P-3462	Sample	1.56	0.05	3.04
ATX-P-3463	Sample	2.54	0.09	3.67
ATX-P-3466	Sample	1.42	0.05	2.94
ATX-P-3467	Sample	1.62	0.06	3.19
ATX-P-3468	Sample	3.45	0.12	4.85
ATX-P-3469	Sample	1.43	0.05	3.11
ATX-P-3470	Sample	0.98	0.03	2.16
ATX-P-3471	Sample	0.82	0.03	1.68
ATX-P-3472	Sample	1.02	0.04	1.52
ATX-P-3361	Sample	1.55	0.05	4.49
ATX-P-3366	Sample	1.31	0.05	3.49
ATX-P-3376	Sample	2.87	0.10	3.96
ATX-P-3377	Sample	6.50	0.23	9.70

FIG. 8
(cont'd)

ATX-P-3418	Sample	1.29	0.04	2.23
ATX-P-3420	Sample	3.82	0.13	2.53
ATX-P-3426	Sample	2.95	0.10	2.08
ATX-P-3432	Sample	1.65	0.06	3.48
ATX-P-3433	Sample	1.68	0.06	3.03
ATX-P-3438	Sample	1.16	0.04	2.91
ATX-P-3441	Sample	1.74	0.06	3.51
ATX-P-3446	Sample	3.78	0.13	5.55
ATX-P-3452	Sample	1.72	0.06	3.33
ATX-P-1899	Comparator	1.90	0.07	2.27

Sample Info		BVP / ELISA Polyreactivity (Avg. Controls)		
		BVP		Blank / BSA
Sample ID	Type	Fold-over BG	Normalized Score	Fold-over BG
Adalimumab	Negative Control	1.66	0.05	3.76
ATX-P-104	Negative Control	3.01	0.1	7.07
ATX-P-1390	Intermediate Control	7.60	0.25	2.00
ATX-P-102	Positive Control	14.04	0.5	2.39

Flags	Norm. Threshold
	BVP
Red-flag	>0.25
Yellow-flag	0.2-0.25
Borderline	0.15-0.2
No-flag	0.15

FIG. 8
(cont'd)

Sample Info		LSA Polyreactivity											
		Hep2		HEK-CP		HEK-DNP		ALM		LPS		Hemoglobin	
Sample ID	Type	RU	Rank	RU	Rank	RU	Rank	RU	Rank	RU	Rank	RU	Rank
ATX-P-3360	Sample	0.0	0.00	4.8	0.00	55.5	0.00	38.1	0.00	30.5	1.00	62.0	0.00
ATX-P-3362	Sample	31.7	0.00	2.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3363	Sample	25.6	0.00	51.1	0.00	66.5	0.00	27.0	0.00	6.4	0.00	0.5	0.00
ATX-P-3365	Sample	91.5	0.50	54.3	0.00	55.8	0.00	42.0	0.00	28.0	0.75	121.8	0.75
ATX-P-3367	Sample	109.3	0.75	248.4	0.50	666.3	1.00	375.5	1.00	16.4	0.00	57.3	0.00
ATX-P-3369	Sample	73.3	0.50	115.3	0.00	132.8	0.00	67.5	0.00	1.0	0.00	20.7	0.00
ATX-P-3370	Sample	63.8	0.50	488.5	1.00	904.1	1.00	584.8	1.00	35.5	1.00	82.3	0.50
ATX-P-3371	Sample	87.8	0.50	356.4	1.00	822.0	1.00	519.4	1.00	25.8	0.75	118.8	0.75
ATX-P-3373	Sample	59.2	0.50	12.0	0.00	17.1	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3375	Sample	206.8	1.00	187.1	0.50	194.1	0.00	135.4	0.50	0.0	0.00	1.5	0.00
ATX-P-3378	Sample	17.1	0.00	63.6	0.00	42.2	0.00	56.4	0.00	42.9	1.00	7.5	0.00
ATX-P-3382	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3383	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3384	Sample	33.9	0.00	58.3	0.00	83.3	0.00	47.3	0.00	0.0	0.00	8.4	0.00
ATX-P-3386	Sample	0.0	0.00	66.0	0.00	150.8	0.00	61.3	0.00	5.8	0.00	23.5	0.00
ATX-P-3387	Sample	0.0	0.00	210.2	0.50	657.0	1.00	353.6	1.00	13.7	0.00	101.5	0.75
ATX-P-3389	Sample	145.4	0.75	587.9	1.00	862.8	1.00	791.7	1.00	0.0	0.00	31.3	0.00
ATX-P-3391	Sample	20.4	0.00	0.0	0.00	113.7	0.00	29.0	0.00	0.0	0.00	48.4	0.00
ATX-P-3392	Sample	25.6	0.00	56.9	0.00	34.7	0.00	47.0	0.00	30.7	1.00	24.4	0.00
ATX-P-3395	Sample	17.1	0.00	25.2	0.00	5.8	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3396	Sample	0.0	0.00	76.3	0.00	117.7	0.00	144.1	0.50	0.0	0.00	3.4	0.00
ATX-P-3397	Sample	28.6	0.00	71.8	0.00	104.2	0.00	63.3	0.00	11.9	0.00	43.7	0.00
ATX-P-3405	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3406	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3407	Sample	0.0	0.00	0.0	0.00	10.6	0.00	0.0	0.00	15.1	0.00	38.6	0.00
ATX-P-3408	Sample	0.0	0.00	0.0	0.00	33.3	0.00	6.3	0.00	42.6	1.00	64.6	0.00
ATX-P-3410	Sample	0.0	0.00	0.0	0.00	7.8	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3412	Sample	148.3	0.75	240.6	0.50	193.8	0.00	164.6	0.50	0.0	0.00	139.3	0.75

FIG. 9

ATX-P-3413	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	3.6	0.00	0.0	0.00
ATX-P-3414	Sample	0.0	0.00	0.0	0.00	131.3	0.00	52.5	0.00	0.0	0.00	0.0	0.00
ATX-P-3419	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3421	Sample	15.2	0.00	0.0	0.00	51.9	0.00	38.3	0.00	14.5	0.00	33.2	0.00
ATX-P-3428	Sample	69.6	0.50	39.5	0.00	22.2	0.00	75.3	0.00	0.0	0.00	14.5	0.00
ATX-P-3430	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3431	Sample	0.0	0.00	13.6	0.00	0.0	0.00	44.6	0.00	0.0	0.00	0.0	0.00
ATX-P-3435	Sample	0.0	0.00	0.0	0.00	0.0	0.00	48.9	0.00	0.0	0.00	0.0	0.00
ATX-P-3436	Sample	232.7	1.00	1484.7	1.00	1697.7	1.00	1596.5	1.00	0.0	0.00	176.1	1.00
ATX-P-3437	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3440	Sample	11.7	0.00	52.1	0.00	247.4	0.00	160.4	0.50	0.0	0.00	0.0	0.00
ATX-P-3442	Sample	0.0	0.00	623.8	1.00	811.4	1.00	643.3	1.00	0.0	0.00	0.0	0.00
ATX-P-3444	Sample	429.0	1.00	503.4	1.00	1133.8	1.00	955.0	1.00	0.0	0.00	108.2	0.75
ATX-P-3447	Sample	42.0	0.00	221.1	0.50	312.9	0.50	296.3	0.75	12.7	0.00	15.4	0.00
ATX-P-3448	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	4.5	0.00	2.2	0.00
ATX-P-3449	Sample	53.0	0.50	65.1	0.00	90.7	0.00	52.0	0.00	13.3	0.00	16.9	0.00
ATX-P-3450	Sample	78.8	0.50	475.6	1.00	704.4	1.00	736.9	1.00	0.0	0.00	0.0	0.00
ATX-P-3451	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3453	Sample	0.0	0.00	0.0	0.00	133.5	0.00	0.0	0.00	0.0	0.00	86.4	0.50
ATX-P-3454	Sample	0.0	0.00	0.0	0.00	44.3	0.00	0.0	0.00	11.1	0.00	0.0	0.00
ATX-P-3455	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3456	Sample	14.0	0.00	2.4	0.00	66.5	0.00	2.2	0.00	0.0	0.00	5.6	0.00
ATX-P-3458	Sample	0.0	0.00	0.0	0.00	0.0	0.00	12.3	0.00	0.0	0.00	0.0	0.00
ATX-P-3459	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3462	Sample	0.0	0.00	0.0	0.00	91.4	0.00	31.2	0.00	17.9	0.00	53.2	0.00
ATX-P-3463	Sample	108.1	0.75	287.1	0.75	458.2	1.00	326.3	1.00	36.5	1.00	100.2	0.75
ATX-P-3466	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3467	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	9.7	0.00	0.0	0.00
ATX-P-3468	Sample	1.2	0.00	181.4	0.50	478.2	1.00	384.2	1.00	0.0	0.00	4.6	0.00
ATX-P-3469	Sample	0.0	0.00	0.0	0.00	0.0	0.00	28.7	0.00	0.0	0.00	5.0	0.00
ATX-P-3470	Sample	41.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3471	Sample	72.5	0.50	30.6	0.00	0.0	0.00	12.3	0.00	10.3	0.00	10.1	0.00
ATX-P-3472	Sample	163.0	0.75	172.6	0.50	91.8	0.00	73.2	0.00	20.1	0.50	69.8	0.00
ATX-P-3361	Sample	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	2.3	0.00	0.0	0.00
ATX-P-3366	Sample	21.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
ATX-P-3376	Sample	0.0	0.00	76.3	0.00	465.7	0.75	178.7	0.50	0.0	0.00	0.0	0.00

FIG. 9
(cont'd)

FIG. 9 (cont'd)

Sample Info		LSA Polyreactivity (Avg. Controls)											
		HSP90		HEK-CP		HEK-IMP		KLH		LPS		Hemoglobin	
Sample ID	Type	RU	Rank	RU	Rank	RU	Rank	RU	Rank	RU	Rank	RU	Rank
ATX-P-103	Negative Control	0.0	0.00	0.0	0.00	0.0	0.00	45.8	0.00	12.9	0.00	73.8	0.00
ATX-P-104	Intermediate Control	52.4	0.50	103.4	0.00	257.0	0.50	177.4	0.50	0.0	0.00	23.9	0.00
ATX-P-102	Positive Control	295.6	1.00	314.5	0.75	848.5	1.00	783.1	1.00	37.7	1.00	100.0	0.50
ATX-P-1894	Positive Control	29.0	0.00	1211.2	1.00	1446.3	1.00	1370.5	1.00	0.0	0.00	6.8	0.00

Rank Thresholds				
Reagent	Rank	Low	High	Rank
HSP90	High	150.0		1.00
	Intermediate	100.0	150.0	0.75
	Low-intermediate	50.0	100.0	0.50
HEK-CP	High	350.0		1.00
	Intermediate	250.0	350.0	0.75
	Low-intermediate	150.0	250.0	0.50
HEK-IMP	High	450.0		1.00
	Intermediate	350.0	450.0	0.75
	Low-intermediate	250.0	350.0	0.50
KLH	High	300.0		1.00
	Intermediate	200.0	300.0	0.75
	Low-intermediate	100.0	200.0	0.50
LPS	High	30.0		1.00
	Intermediate	25.0	30.0	0.75
	Low-intermediate	20.0	25.0	0.50
Hemoglobin	High	150.0		1.00
	Intermediate	100.0	150.0	0.75
	Low-intermediate	75.0	100.0	0.50

SUBSTITUTE SHEET (RULE 26)

FIG. 10A:

Sample Info		C3HR4B Blocking					
Sample ID	Type	C3b	Buffer	C3b	CFHR4b	Norm. % Delta RU	CFHR4B blocker?
ATX-P-3360	Sample	1733.97	1376.04	1601.13	1485.1	33.68	Non-blocker
ATX-P-3362	Sample	459.71	338.56	375.18	439.0	43.96	Non-blocker
ATX-P-3363	Sample	1724.69	1604.68	1595.63	1634.1	9.37	Non-blocker
ATX-P-3365	Sample	1320.60	981.30	1271.46	1062.0	9.22	Intermediate
ATX-P-3367	Sample	189.28	196.30	165.99	218.9	26.18	Intermediate
ATX-P-3369	Sample	154.68	180.71	43.83	48.1	5.46	N/A
ATX-P-3370	Sample	233.71	282.00	214.94	327.1	21.50	Intermediate
ATX-P-3371	Sample	339.53	410.20	297.43	474.3	38.64	Non-blocker
ATX-P-3373	Sample	1606.93	944.18	1518.90	972.8	5.66	Blocker
ATX-P-3375	Sample	40.13	45.88	85.53	41.2	N.B.	N/A
ATX-P-3378	Sample	1812.36	1087.77	1708.03	1065.0	5.85	Blocker
ATX-P-3382	Sample	1402.41	1122.60	1345.84	1217.8	22.12	Non-blocker
ATX-P-3383	Sample	1469.46	917.64	1409.62	961.1	6.56	Blocker
ATX-P-3384	Sample	1335.01	870.51	1245.98	896.9	6.77	Blocker
ATX-P-3386	Sample	1160.37	893.22	1087.35	931.1	8.65	Non-blocker
ATX-P-3387	Sample	855.76	733.08	793.27	794.7	24.54	Non-blocker
ATX-P-3389	Sample	1383.87	867.07	1318.76	953.8	9.67	Non-blocker
ATX-P-3391	Sample	1720.77	1584.73	1594.53	1667.6	21.49	Non-blocker
ATX-P-3392	Sample	1419.86	1162.87	1353.10	1171.2	4.86	Blocker
ATX-P-3395	Sample	2177.01	1921.47	2117.03	2258.1	38.40	Non-blocker
ATX-P-3396	Sample	440.36	346.52	91.18	105.8	37.36	Non-blocker
ATX-P-3397	Sample	1893.82	1849.44	1769.51	2027.5	36.93	Non-blocker
ATX-P-3405	Sample	683.31	330.23	656.50	435.9	34.06	Non-blocker
ATX-P-3406	Sample	1911.87	1732.77	1826.96	1877.3	22.12	Non-blocker
ATX-P-3407	Sample	1600.49	1293.13	1507.56	1538.3	28.24	Non-blocker
ATX-P-3408	Sample	2147.07	2129.09	2046.34	2309.7	39.71	Non-blocker
ATX-P-3410	Sample	856.61	541.63	833.78	620.0	21.24	Intermediate
ATX-P-3412	Sample	1197.92	1189.97	943.54	1054.2	23.39	Non-blocker
ATX-P-3413	Sample	1562.13	988.88	1513.71	1402.9	29.38	Non-blocker
ATX-P-3414	Sample	1817.52	1443.80	1729.99	1616.3	22.99	Non-blocker
ATX-P-3419	Sample	1110.63	893.05	1065.40	991.1	17.67	Non-blocker
ATX-P-3421	Sample	1876.00	1781.32	1745.84	1803.6	8.36	Non-blocker
ATX-P-3428	Sample	1608.10	1617.06	1541.85	1706.1	30.60	Non-blocker
ATX-P-3430	Sample	451.69	423.94	438.26	589.1	48.56	Non-blocker
ATX-P-3431	Sample	760.68	673.23	662.30	724.2	20.64	Non-blocker
ATX-P-3435	Sample	1554.04	1408.99	1490.52	1553.1	28.64	Non-blocker
ATX-P-3436	Sample	104.37	150.74	86.85	145.7	29.69	Non-blocker

FIGS. 10A-10B

FIG. 10A:
(cont'd)

ATX-P-3437	Sample	1241.59	600.15	1190.01	639.3	5.48	Intermediate
ATX-P-3440	Sample	1484.00	1411.72	1168.19	1113.8	7.44	Blocker
ATX-P-3442	Sample	1646.82	1146.62	1576.42	1297.2	22.66	Non-blocker
ATX-P-3444	Sample	2178.58	2177.55	2108.74	2674.4	27.22	Non-blocker
ATX-P-3447	Sample	85.99	108.90	78.25	106.8	24.18	Blocker
ATX-P-3448	Sample	177.52	182.35	171.80	226.9	29.26	Non-blocker
ATX-P-3449	Sample	37.49	37.38	34.24	37.7	N.B.	N/A
ATX-P-3450	Sample	170.13	256.53	140.13	258.8	54.92	N/A
ATX-P-3451	Sample	1456.97	1234.84	1413.94	1426.0	16.74	Non-blocker
ATX-P-3453	Sample	2204.30	2144.64	2073.48	2208.2	9.20	Non-blocker
ATX-P-3454	Sample	1661.85	1538.43	1528.07	1992.5	29.41	Non-blocker
ATX-P-3455	Sample	2369.90	2213.44	2222.63	2219.7	6.66	Non-blocker
ATX-P-3456	Sample	2103.91	1815.32	1990.93	1857.4	7.61	Non-blocker
ATX-P-3458	Sample	701.36	675.72	645.10	789.5	18.24	Non-blocker
ATX-P-3459	Sample	1899.70	1863.64	1747.35	1880.6	9.53	Non-blocker
ATX-P-3462	Sample	2183.01	1959.89	2067.64	2046.9	9.22	Non-blocker
ATX-P-3463	Sample	2071.21	1561.66	2001.71	1907.6	18.92	Non-blocker
ATX-P-3466	Sample	1949.06	1900.26	1818.28	2258.5	24.72	Non-blocker
ATX-P-3467	Sample	1030.03	843.44	951.01	890.9	9.34	Intermediate
ATX-P-3468	Sample	174.87	142.55	115.65	126.2	27.64	Non-blocker
ATX-P-3469	Sample	2418.04	1750.17	2351.47	2174.5	10.09	Non-blocker
ATX-P-3470	Sample	692.86	604.86	678.37	818.7	23.39	Non-blocker
ATX-P-3471	Sample	275.07	336.76	38.08	40.7	L.R.	N/A
ATX-P-3472	Sample	1858.22	1164.95	1777.36	1200.0	4.46	Intermediate
ATX-P-3361	Sample	942.85	864.05	889.21	899.5	9.51	Intermediate
ATX-P-3366	Sample	424.18	298.86	414.15	315.8	5.54	Blocker
ATX-P-3376	Sample	115.64	113.19	107.54	120.1	13.41	N/A
ATX-P-3377	Sample	253.91	360.52	205.79	390.6	47.82	Non-blocker
ATX-P-3418	Sample	1908.09	1800.44	1830.85	2241.1	24.05	Non-blocker
ATX-P-3420	Sample	2346.30	2196.43	2284.83	2441.7	13.26	Non-blocker
ATX-P-3426	Sample	461.56	468.66	442.40	644.4	44.12	Non-blocker
ATX-P-3432	Sample	2698.60	2637.51	2516.59	2841.5	14.17	Non-blocker
ATX-P-3433	Sample	617.74	402.66	598.55	525.3	23.57	Non-blocker
ATX-P-3438	Sample	2079.58	2041.40	1958.39	2068.0	7.81	Non-blocker
ATX-P-3441	Sample	1719.65	1611.62	1635.86	1887.6	21.47	Non-blocker
ATX-P-3446	Sample	300.91	410.33	255.17	471.7	64.51	Non-blocker
ATX-P-3452	Sample	1805.50	1485.36	1620.45	1677.7	21.37	Non-blocker
ATX-P-1899	Comparator	1768.56	1762.35	1755.63	2239.4	27.91	Non-blocker
ATX-P-84	Negative Control	40.09	38.80	36.35	31.7	N.B.	N/A

FIGS. 10A-10B (cont'd)

FIG. 10B:

Sample ID	Type	C3b	Buffer	C3b	CFH	Norm. % Delta RU	fluCFH blocker?
ATX-P-3360	Sample	1733.97	1376.04	1561.60	1834.6	11.05	Non-blocker
ATX-P-3362	Sample	459.71	338.56	402.93	412.3	79.48	Non-blocker
ATX-P-3363	Sample	1724.69	1604.68	1653.69	2027.0	46.52	Non-blocker
ATX-P-3365	Sample	1320.60	981.30	1292.76	1027.1	5.14	Intermediate
ATX-P-3367	Sample	189.28	196.30	173.99	191.4	6.32	Blocker
ATX-P-3369	Sample	154.68	180.71	86.88	71.2	6.91	N/A
ATX-P-3370	Sample	233.71	282.60	223.66	319.0	22.99	Intermediate
ATX-P-3371	Sample	339.53	410.20	308.68	396.1	7.56	Intermediate
ATX-P-3373	Sample	1606.93	944.18	1558.46	923.0	6.42	Blocker
ATX-P-3375	Sample	40.13	45.86	34.60	43.1	N.B.	N/A
ATX-P-3378	Sample	1812.36	1087.77	1754.82	1063.3	6.57	Blocker
ATX-P-3382	Sample	1432.41	1122.60	1383.79	1642.6	40.53	Non-blocker
ATX-P-3383	Sample	1469.46	917.64	1437.02	944.1	5.63	Blocker
ATX-P-3384	Sample	1335.01	870.51	1285.51	888.0	6.57	Blocker
ATX-P-3386	Sample	1160.37	893.22	1118.27	1061.1	17.91	Non-blocker
ATX-P-3387	Sample	855.76	733.08	820.26	838.5	14.56	Non-blocker
ATX-P-3389	Sample	1383.87	867.07	1346.38	1195.6	46.14	Non-blocker
ATX-P-3391	Sample	1720.77	1584.73	1646.92	2007.0	39.71	Non-blocker
ATX-P-3392	Sample	1419.96	1162.87	1381.06	1195.6	6.47	Blocker
ATX-P-3395	Sample	2177.01	1921.47	2148.82	2159.2	15.28	Non-blocker
ATX-P-3396	Sample	440.36	346.52	148.01	150.1	29.71	Intermediate
ATX-P-3397	Sample	1893.82	1849.44	1826.93	2384.9	37.89	Non-blocker
ATX-P-3405	Sample	683.81	330.23	668.71	446.4	18.43	Non-blocker
ATX-P-3406	Sample	1911.87	1732.77	1871.74	1946.8	13.28	Non-blocker
ATX-P-3407	Sample	1600.49	1293.13	1549.81	1944.3	44.66	Non-blocker
ATX-P-3408	Sample	2147.07	2139.09	2093.22	2682.1	28.01	Non-blocker
ATX-P-3410	Sample	856.61	541.63	844.05	530.3	6.48	Blocker
ATX-P-3412	Sample	1197.92	1189.97	1027.97	1188.9	16.52	Non-blocker
ATX-P-3413	Sample	1562.13	988.68	1539.61	1645.5	49.51	Non-blocker
ATX-P-3414	Sample	1817.52	1443.80	1772.12	1672.0	14.74	Non-blocker
ATX-P-3419	Sample	1110.63	895.05	1086.04	602.1	24.82	Intermediate
ATX-P-3421	Sample	1876.00	1781.52	1806.22	2096.8	23.15	Non-blocker
ATX-P-3428	Sample	1608.10	1617.06	1571.41	1601.5	6.46	Intermediate
ATX-P-3430	Sample	451.69	423.94	445.30	595.3	55.44	Non-blocker
ATX-P-3431	Sample	760.68	673.23	679.06	674.8	10.57	Non-blocker
ATX-P-3435	Sample	1554.04	1408.99	1518.38	1300.8	6.56	Intermediate
ATX-P-3436	Sample	104.37	150.74	94.93	145.2	6.55	Blocker
ATX-P-3437	Sample	1241.59	600.15	1214.93	843.6	21.30	Non-blocker
ATX-P-3440	Sample	1484.00	1411.72	1279.12	1468.5	19.48	Non-blocker

FIGS. 10A-10B (cont'd)

FIG. 10B:
(cont'd)

ATX-P-3442	Sample	1646.82	1146.62	1611.48	1524.4	34.97	Non-blocker
ATX-P-3444	Sample	2179.58	2177.55	2135.35	2932.7	37.44	Non-blocker
ATX-P-3447	Sample	85.99	108.90	80.14	100.7	6.96	Blocker
ATX-P-3448	Sample	177.52	182.35	173.28	194.8	9.72	Blocker
ATX-P-3449	Sample	37.49	37.36	34.75	39.1	N.B.	N/A
ATX-P-3450	Sample	170.12	256.53	155.26	226.3	4.84	N/A
ATX-P-3451	Sample	1456.97	1234.94	1430.77	1343.2	9.12	Non-blocker
ATX-P-3453	Sample	2204.30	2144.64	2134.50	2415.9	15.89	Non-blocker
ATX-P-3454	Sample	1661.85	1538.43	1644.43	2210.8	41.97	Non-blocker
ATX-P-3455	Sample	2369.90	2213.44	2287.26	2470.3	14.60	Non-blocker
ATX-P-3456	Sample	2103.91	1815.32	2047.37	2280.4	24.12	Non-blocker
ATX-P-3458	Sample	701.36	675.72	671.29	699.4	7.86	Intermediate
ATX-P-3459	Sample	1899.70	1863.64	1822.21	2247.5	23.24	Non-blocker
ATX-P-3462	Sample	2183.01	1959.89	2118.19	2397.8	23.42	Non-blocker
ATX-P-3463	Sample	2071.21	1561.66	2034.96	1813.8	15.79	Non-blocker
ATX-P-3466	Sample	1949.06	1900.36	1880.80	2506.2	33.75	Non-blocker
ATX-P-3467	Sample	1000.03	843.44	968.90	908.5	9.43	Intermediate
ATX-P-3468	Sample	174.87	142.55	132.70	146.1	24.36	Non-blocker
ATX-P-3469	Sample	2418.04	1750.17	2379.82	2235.8	21.57	Non-blocker
ATX-P-3470	Sample	692.86	604.86	685.87	899.5	43.84	Non-blocker
ATX-P-3471	Sample	275.07	336.76	53.85	67.3	4.84	N/A
ATX-P-3472	Sample	1858.22	1164.95	1810.87	1127.3	6.44	Blocker
ATX-P-3361	Sample	942.85	864.05	910.56	1143.2	23.41	Non-blocker
ATX-P-3366	Sample	424.18	298.86	418.55	307.5	5.00	Blocker
ATX-P-3376	Sample	115.64	113.19	108.04	103.3	4.84	N/A
ATX-P-3377	Sample	253.91	360.52	228.75	317.6	5.46	Blocker
ATX-P-3418	Sample	1908.09	1800.44	1862.08	2464.6	34.00	Non-blocker
ATX-P-3420	Sample	2346.30	2196.43	2314.17	2733.5	34.51	Non-blocker
ATX-P-3426	Sample	461.56	468.66	450.40	470.9	5.00	Blocker
ATX-P-3432	Sample	2698.80	2637.51	2598.94	3207.6	23.66	Non-blocker
ATX-P-3433	Sample	617.74	402.66	608.31	484.9	16.17	Non-blocker
ATX-P-3438	Sample	2079.58	2041.40	2012.13	2408.1	21.91	Non-blocker
ATX-P-3441	Sample	1719.85	1611.62	1678.25	2128.5	33.11	Non-blocker
ATX-P-3446	Sample	300.91	410.23	270.81	381.6	4.84	Blocker
ATX-P-3452	Sample	1805.50	1485.36	1706.42	2064.8	19.73	Non-blocker
ATX-P-1898	Comparator	1768.56	1762.35	1761.22	1762.2	5.41	Blocker
ATX-P-84	Negative Control	40.09	38.80	38.09	45.8	N.B.	N/A

FIGS. 10A-10B (cont'd)

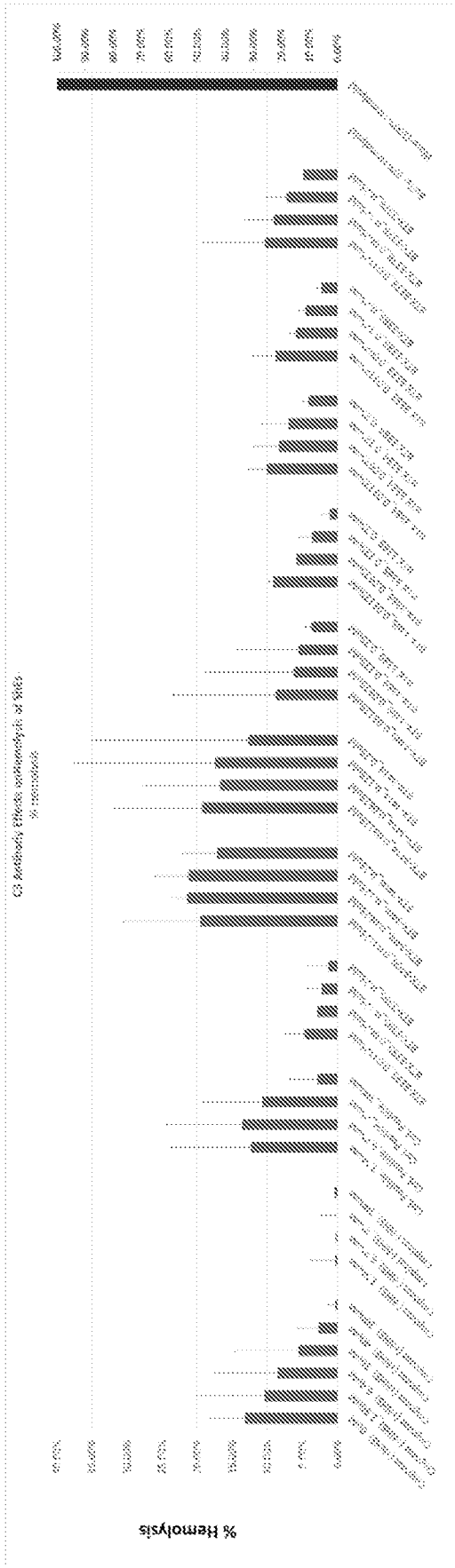


FIG. 11

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2024/026808

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/28 A61P27/02 A61K39/395
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C07K A61P A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, BIOSIS, CHEM ABS Data, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2008/154251 A2 (GENENTECH INC [US]; VAN LOOKEREN CAMPAGNE MENNO [US]) 18 December 2008 (2008-12-18) pages 3-5, examples, claims ----- -/--	1-17,48, 133, 167-169, 243-277

[x] Further documents are listed in the continuation of Box C.

[x] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance;; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance;; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 July 2024	17/10/2024

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Bernhardt, Wiebke

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2024/026808

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KENNETH J. KATSCHKE ET AL: "Structural and Functional Analysis of a C3b-specific Antibody That Selectively Inhibits the Alternative Pathway of Complement", JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 284, no. 16, 17 April 2009 (2009-04-17), pages 10473-10479, XP055568372, US ISSN: 0021-9258, DOI: 10.1074/jbc.M809106200 abstract, figures	1-17,48, 133, 167-169, 243-277
X	WO 2013/152024 A1 (NOVELMED THERAPEUTICS INC [US]) 10 October 2013 (2013-10-10) examples, claims	1-17,48, 133, 167-169, 243-277
A	RUDIKOFF S ET AL: "Single amino acid substitution altering antigen-binding specificity", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, NATIONAL ACADEMY OF SCIENCES, vol. 79, no. 6, 1 March 1982 (1982-03-01), pages 1979-1983, XP002683593, ISSN: 0027-8424, DOI: 10.1073/PNAS.79.6.1979 abstract	1-17,48, 133, 167-169, 243-277
A	WINKLER K ET AL: "Changing the antigen binding specificity by single point mutations of an anti-p24 (HIV-1) antibody", THE JOURNAL OF IMMUNOLOGY, WILLIAMS & WILKINS CO, US, vol. 165, no. 8, 15 October 2000 (2000-10-15), pages 4505-4514, XP002579393, ISSN: 0022-1767 abstract	1-17,48, 133, 167-169, 243-277
X,P	WO 2023/212298 A1 (BROADWING BIO LLC [US]) 2 November 2023 (2023-11-02) pages 2-4, examples, claims; sequences 402, 1127, 1423, 1275-1292	1-17,48, 133, 167-169, 243-277

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INTERNATIONAL SEARCH REPORT

International application No.
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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:

   a. [X] forming part of the international application as filed.

   b. [ ] furnished subsequent to the international filing date for the purposes of international search (Rule 13*ter*.1(a)).

      [ ] accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.

2. [ ] With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this report has been established to the extent that a meaningful search could be carried out without a WIPO Standard ST.26 compliant sequence listing.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2024/026808

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 2, 16, 17(all partially)
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims;; it is covered by claims Nos.:
48, 133, 169(completely); 1-17, 167, 168, 243-277(partially)

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 48, 133, 169(completely); 1-17, 167, 168, 243-277(partially)

An antibody, or antigen binding fragment thereof, which specifically binds Complement Component 3 (C3) polypeptides comprising the HCDRs 1-3 with Seq ID No. 96, 125, 153 and the LCDRs 1-3 with Seq ID No. 368, 403, 438 [CDRs of the antibody designated ATX-P-3360 according to table 6 in p. [0158]); products, methods and uses related thereto

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2-74. claims: 1-47, 49-132, 134-168, 170-277(all partially)

An antibody, or antigen binding fragment thereof, which specifically binds Complement Component 3 (C3) polypeptides comprising the heavy and light chain CDRs of the antibody designated ATX-P-3362 to ATX-P-3452 according to table 6 in p. [0158]); products, methods and uses related thereto;
* For practical purposes, each of invention groups 2-74 has simply been defined as encompassing claims 18-47, 49-132 and 134-166, partially. It is noted that an exact attribution of said individual claims to each invention group is not feasible due to the extensive lack of unity and complexity of the claimed subject-matter. Hence, the actual portion of the claims 18-47, 49-132 and 134-166 belonging to each invention group varies and is determined by the presence of matter relating to those antibodies serving to define the respective invention groups.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 2, 16, 17(all partially)

The present application contain 277 claims comprising

- several independent claims including claims 1, 16 and 17, all refering to an antibody binding to complement component 3 and
- over 250

dependent claims.

The claims as a whole are not in compliance with the provisions of clarity and conciseness of Article 6 PCT, because they create a smoke screen in front of the skilled reader with regard to the subject-matter to be claimed.

Moreover, claims 16 and 17 refers to antibody directed against Complement Component 3 which is defined by 6 CDRs wherein the sequences allow for many sequence variations. This amounts a very large number of antibodies covered by the claims, by means of (i) the mix and match of the different Seq ID Nos and (ii) by means of the variations within the CDRs. According to Rule 6.1(a) PCT, the number of claims shall be reasonable in consideration of the nature of the invention claimed, which is not the case in the present application. The examiner is unable to search the millions of combinations claimed without undue burden.

Furthermore, the application relates to sequence combinations which may or may not generate an antibody with defined technical properties. The important role played by each single amino acid in the binding of an antibody to its target, especially at the level of its CDRs is known (see Rudikoff et al. or Winkler et al.: both abstracts). Thus, a claim to a classical IgG antibody which is structurally characterised by less than the full sequence of all 6 CDRs cannot be seen to sufficiently disclose an antibody with any particular properties.

In addition, support and sufficient disclosure for said claims is only found for a small amount of the claimed scope in the present application, namely the antibodies according to table 6.

In addition, claim 2 refers to an antibody which

"binds to the same epitope on human C3 as an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6; and/or

competes for binding to human C3 with an antibody comprising the VH and VL sequences of any one of the exemplary antibodies the sequences of which are provided in Table 6."

The definition of the antibody as "binding to the same epitope as" or "competing [...] with [a sequence-defined antibody of table 6]" is considered as an unusual parameter. As the antibodies of table 6 are supposedly novel, the prior art will not provide any comparative data with those antibodies. Consequently, in addition to the fact that such unusual parameters might disguise novelty, it is impossible to carry out a search in the prior art

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

for an antibody which competes with an hitherto unknown antibody.
Thus,
the subject-matter of claims 2, 16 and 17 can only be searched in part.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.3), should the problems which led to the Article 17(2) PCT declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2024/026808

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