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Canadian Intellectual Property Office

CA 3059938 A1 2018/10/18

(21) 3 059 938

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) A1

(86) Date de dépôt PCT/PCT Filing Date: 2018/04/12
(87) Date publication PCT/PCT Publication Date: 2018/10/18
(85) Entrée phase nationale/National Entry: 2019/10/11
(86) N° demande PCT/PCT Application No.: US 2018/027378
(87) N° publication PCT/PCT Publication No.: 2018/191548
(30) Priorité/Priority: 2017/04/14 (US62/485,718)

(51) Cl.Int./Int.Cl. *C07K 16/18* (2006.01)

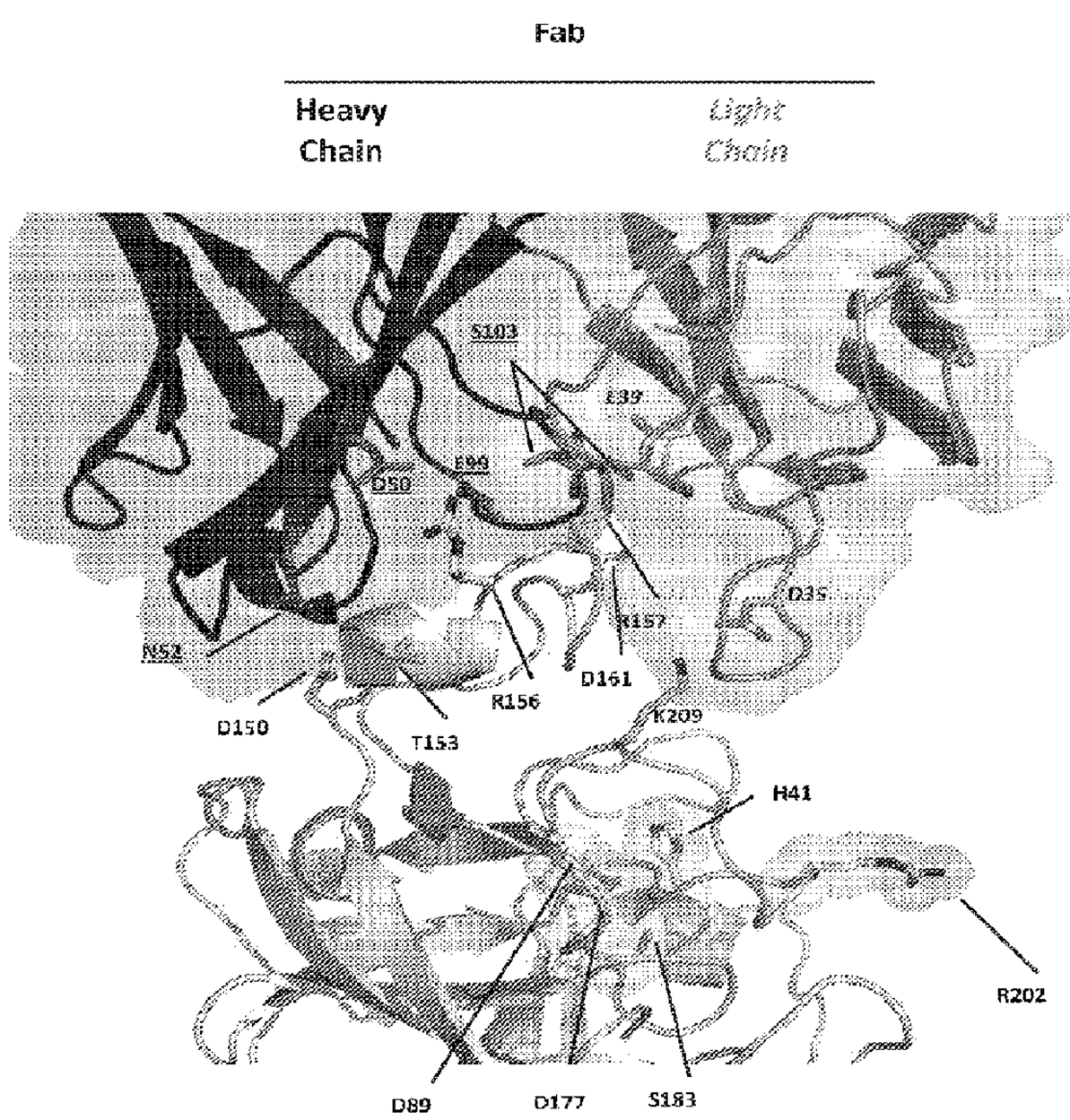
(71) Demandeur/Applicant:
KODIAK SCIENCES INC., US

(72) Inventeurs/Inventors:
PERLROTH, D. VICTOR, US;
TO, WAH YUEN, US;
LIANG, HONG, US;
JACOBSON, RACHEL MARIE DEVAY, US;
CORREA, FERNANDO, US

(74) Agent: SMART & BIGGAR LLP

(54) Titre : ANTICORPS ANTAGONISTES DU FACTEUR D DU COMPLEMENT ET LEURS CONJUGUES
(54) Title: COMPLEMENT FACTOR D ANTAGONIST ANTIBODIES AND CONJUGATES THEREOF

FIG. 25



(57) Abrégé/Abstract:
The present invention provides antagonizing antibodies that bind to complement factor D (CFD), conjugates thereof, and methods of using same. The anti-CFD antibodies can be used therapeutically alone or in combination with other therapeutics to treat age related macular degeneration and other diseases.

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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 October 2018 (18.10.2018)

WIPO | PCT

(10) International Publication Number
WO 2018/191548 A3

(51) International Patent Classification:
C12N 9/64 (2006.01) *C07K 16/18* (2006.01)

(21) International Application Number:
PCT/US2018/027378

(22) International Filing Date:
12 April 2018 (12.04.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/485,718 14 April 2017 (14.04.2017) US

(71) Applicant: **KODIAK SCIENCES INC.** [US/US]; 2631 Hanover Street, Palo Alto, CA 94304 (US).

(72) Inventors: **PERLROTH, D., Victor**; c/o Kodiak Sciences Inc., 2631 Hanover Street, Palo Alto, CA 94304 (US). **TO, Wah Yuen**; c/o Kodiak Sciences Inc., 2631 Hanover Street, Palo Alto, CA 94304 (US). **LIANG, Hong**; c/o Kodiak Sciences Inc., 2631 Hanover Street, Palo Alto, CA 94304 (US). **JACOBSON, Rachel Marie DeVay**; c/o Kodiak Sciences Inc., 2631 Hanover Street, Palo Alto, CA 94304 (US). **CORRÊA, Fernando**; c/o Kodiak Sciences Inc., 2631 Hanover Street, Palo Alto, CA 94304 (US).

(74) Agent: **DELANEY, Karoline A.**; Knobbe, Martens, Olson & Bear, LLP, 2040 Main Street, 14th Floor, Irvine, CA 92614 (US).

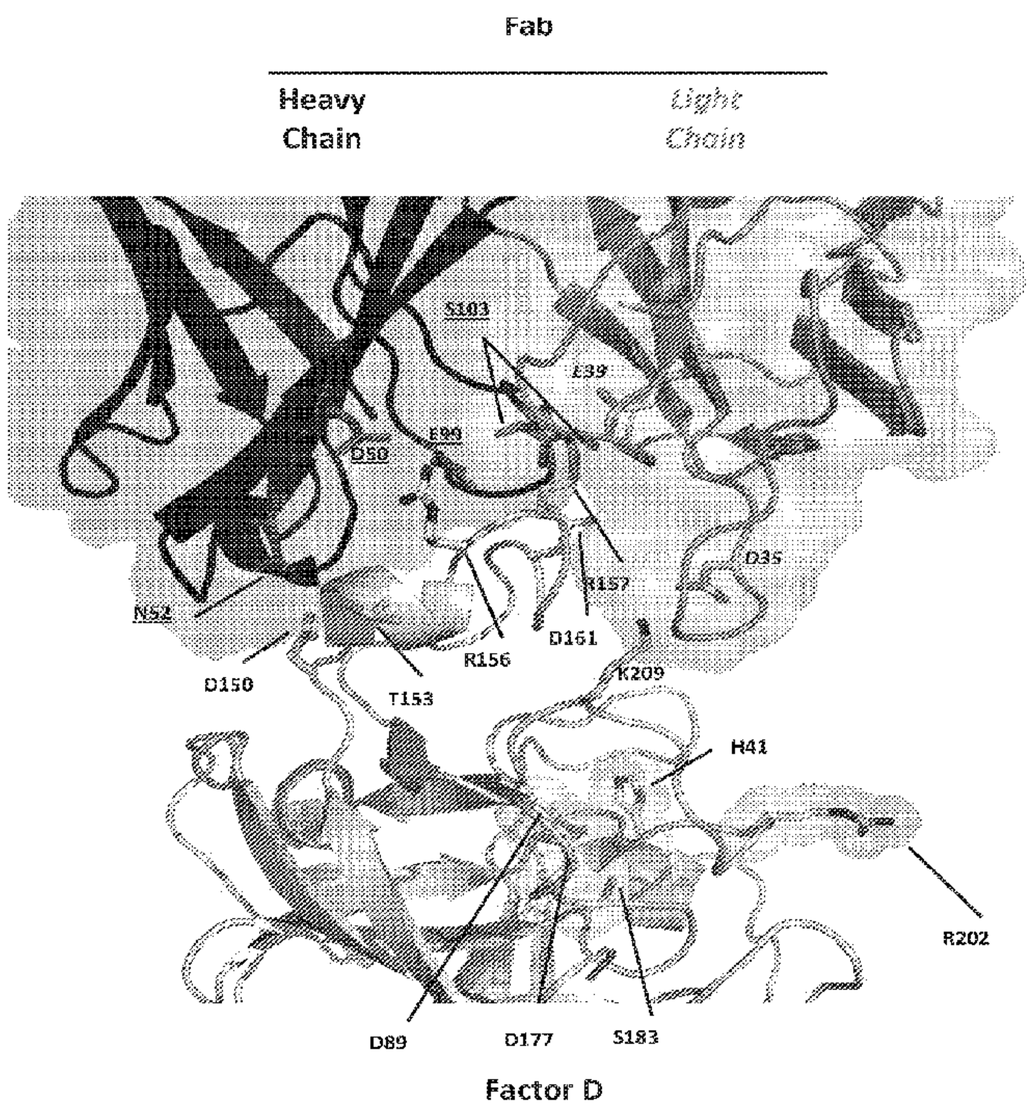
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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,

WO 2018/191548 A3

(54) Title: COMPLEMENT FACTOR D ANTAGONIST ANTIBODIES AND CONJUGATES THEREOF

FIG. 25



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[Continued on next page]

WO 2018/191548 A3

MC, 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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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))*

(88) Date of publication of the international search report:
22 November 2018 (22.11.2018)

DEMANDE OU BREVET VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVET COMPREND PLUS D'UN TOME.

CECI EST LE TOME	1	DE	3
CONTENANT LES PAGES	1	À	231

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JUMBO APPLICATIONS/PATENTS

THIS SECTION OF THE APPLICATION/PATENT CONTAINS MORE THAN ONE VOLUME

THIS IS VOLUME	1	OF	3
CONTAINING PAGES	1	TO	231

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NOM DU FICHIER / FILE NAME :

NOTE POUR LE TOME / VOLUME NOTE:

COMPLEMENT FACTOR D ANTAGONIST ANTIBODIES AND CONJUGATES THEREOF

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 62/485,718, filed on April 14, 2017, the entirety of which is hereby incorporated by reference.

SEQUENCE LISTING AND ELECTRONIC TABLE

[0002] The present application is being filed along with a Sequence Listing in electronic format. The Sequence Listing is provided as a file entitled KDIAK001A.TXT, created April 12, 2018, which is 413,379 bytes in size. The information in the electronic format of the Sequence Listing is incorporated herein by reference in its entirety.

BIOLOGICAL SAMPLE DEPOSIT STATEMENT

[0003] In some embodiments, anti-CFD antagonistic antibodies and conjugates thereof are provided, which were deposited in the American Type Culture Collection (ATCC), in accordance with the Budapest Treaty, under the numbers PTA-123800 and PTA-123801, on Jan. 31, 2017.

[0004] These deposits were made under the provisions of the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure and the Regulations thereunder (Budapest Treaty). This assures maintenance of the deposit for 30 years from date of deposit. The deposit will be made available by the ATCC under the terms of the Budapest Treaty, and subject to an agreement between Applicant and the ATCC, which assures permanent and unrestricted availability of the deposit to the public upon issuance of the pertinent U.S. patent or upon laying open to the public of any U.S. or foreign patent application, whichever comes first, and assures availability of the deposit to one determined by the U.S. Commissioner of Patents and Trademarks to be entitled thereto according to 35 U.S.C. § 122 and the Commissioner's Rules pursuant thereto (including 37 C.F.R. § 1.14). Availability of the deposited biological material is not to be construed as a license to practice the invention in

contravention of the rights granted under the authority of any Government in accordance with its Patent Laws.

FIELD

[0005] The present invention relates generally to constructs, including conjugates thereof, that bind complement factor D (CFD).

BACKGROUND

[0006] Age related macular degeneration (AMD) is a leading cause of vision loss and blindness in the elderly. About ten million Americans are afflicted with AMD. The prevalence of AMD in the population increases steadily with age: at 40 years of age only about 2% of the population is affected by AMD but by the age of 80 it is about 25%. Friedman DS et al. 2004. Prevalence of age-related macular degeneration in the United States. Arch Ophthalmol. 122:564-572.

[0007] AMD is a progressive disease that evolves over time through various stages eventually resulting in severe central vision loss. One of the hallmarks of AMD are extracellular deposits called drusen. Drusen are subretinal deposits of oxidized lipids and proteins that appear beneath the retinal pigment epithelium (RPE). Also often seen in early AMD are visible clumps of pigment in the macula. As AMD progresses, drusen become larger and pigment changes in the macula become more pronounced. Subsequently, some 10 to 15 % of patients will develop subretinal choroidal neovascularization (CNV), typically called wet AMD. CNV is characterized by the presence of new immature blood vessels which grow towards the outer retina from the choroid. These immature blood vessels leak fluid below and in the retina, causing vision loss and blindness. Other patients will develop non-neovascular or dry AMD.

[0008] Advanced cases of dry AMD are characterized by sharply demarcated uni- or multi-focal regions of dysfunctional macula, termed geographic atrophy (GA). Over time, GA patches enlarge and involve the RPE and corresponding neurosensory retina and the choriocapillary layer of the choroid. These changes to the eye are progressive and irreversible, resulting in permanent loss visual function. GA occurs bilaterally in over 50% of patients. Binder S, Stanzel BV, Krebs I, Glittenberg C. 2007. Transplantation of the RPE in AMD. Prog Retn Eye Res. 26:516-554. GA accounts for some 20-25% of patients with severe visual loss

secondary to AMD (i.e. legal blindness related to AMD). Klein R, Klein BE, Jensen SC, Meuer SM. 1997. The five-year incidence and progression of age-related maculopathy: The Beaver Dam Eye Study. Ophthal. 104:7-21. Forms of dry AMD less severe than GA are responsible for a much larger percentage of moderate visual function loss.

SUMMARY

[0009] In some embodiments, an isolated antagonist antibody is provided that specifically binds to complement factor D (CFD) and directly inhibits a proteolytic activity of CFD.

[0010] In some embodiments, an isolated antagonist antibody is provided that specifically binds to complement factor D (CFD), inhibits a proteolytic activity of CFD, and inhibits CFD binding to C3bB complex.

[0011] In some embodiments, an isolated antagonist antibody is provided that specifically binds to complement factor D (CFD), wherein the antibody does not bind a human CFD mutant comprising mutations R157A and R207A.

[0012] In some embodiments, an isolated antagonist antibody is provided that binds an epitope on human CFD, wherein the epitope excludes positions R157 and R207.

[0013] In some embodiments, an isolated antagonistic antibody is provided. The antibody comprises a heavy chain amino acid variable region that comprises SEQ ID NO 183; and a light chain amino acid variable region that comprises SEQ ID NO. 184.

[0014] In some embodiments, an isolated antagonist antibody is provided that comprises: a heavy chain variable region (VH) comprising a VH complementarity determining region one (CDR1), VH CDR2, and VH CDR3 of the VH having an amino acid sequence selected group the group consisting of SEQ ID NO: 541, SEQ ID NO: 542; and SEQ ID NO: 543; and a light chain variable region (VL) comprising a VL CDR1, VL CDR2, and VL CDR3 of the VL having an amino acid sequence selected from the group consisting of SEQ ID NO: 544; SEQ ID NO: 545; and SEQ ID NO: 546.

[0015] In some embodiments, an isolated antagonist antibody that specifically binds to CFD is provided that comprises a heavy chain variable region (VH); and a light chain variable region (VL), wherein the antibody comprises the following mutations: L234A, L235A, and G237A.

[0016] In some embodiments, an isolated antagonist antibody is provided. The antibody binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences shown in SEQ ID NO: 61 and SEQ ID NO: 62. In some embodiments, an isolated antagonist antibody is provided. The antibody binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences shown in SEQ ID NO: 45 and SEQ ID NO: 46.

[0017] In some embodiments, an isolated antagonist antibody that binds to CFD is provided. The antibody comprises: a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 183, with or without the C-terminal lysine; and a light chain comprising the amino acid sequence shown in SEQ ID NO: 184.

[0018] In some embodiments, an isolated antagonist antibody that binds to CFD is provided. The antibody comprises a VH comprising the amino acid sequence shown in SEQ ID NO: 520, or a sequence that is at least 90% identical thereto, having amino acid substitutions in residues that are not within a CDR of SEQ ID NO: 520 and 525.

[0019] In some embodiments, an isolated antagonistic antibody that binds to CFD is provided. The antibody comprises a CDR_H1 that is the CDR_H1 in SEQ ID NO: 520; a CDR_H2 that is the CDR_H2 in SEQ ID NO: 520; a CDR_H3 that is the CDR_H3 in SEQ ID NO: 520; a CDR_L1 that is the CDR_L1 in SEQ ID NO: 525; a CDR_L2 that is the CDR_L2 in SEQ ID NO: 525; a CDR_L3 that is the CDR_L3 in SEQ ID NO: 525; at least one of the following mutations (EU numbering): L234A, L235A, and G237A; and at least one of the following mutations(EU numbering): Q347C or L443C.

[0020] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody is configured to provide a reduced complement reaction, wherein the antibody specifically binds to complement factor D (CFD), and wherein the antibody at least inhibits a proteolytic activity of CFD or inhibits CFD binding to C3bB complex.

[0021] In some embodiments, a conjugate is provided that comprises: a) any of the isolated antagonistic antibodies provided herein; and b) a polymer, wherein the polymer is covalently attached to the antibody.

[0022] In some embodiments, a conjugate is provided that comprises: a) an isolated antagonist antibody that specifically binds to complement factor D (CFD); and b) a phosphorylcholine containing polymer, wherein the polymer is covalently bonded to the antibody.

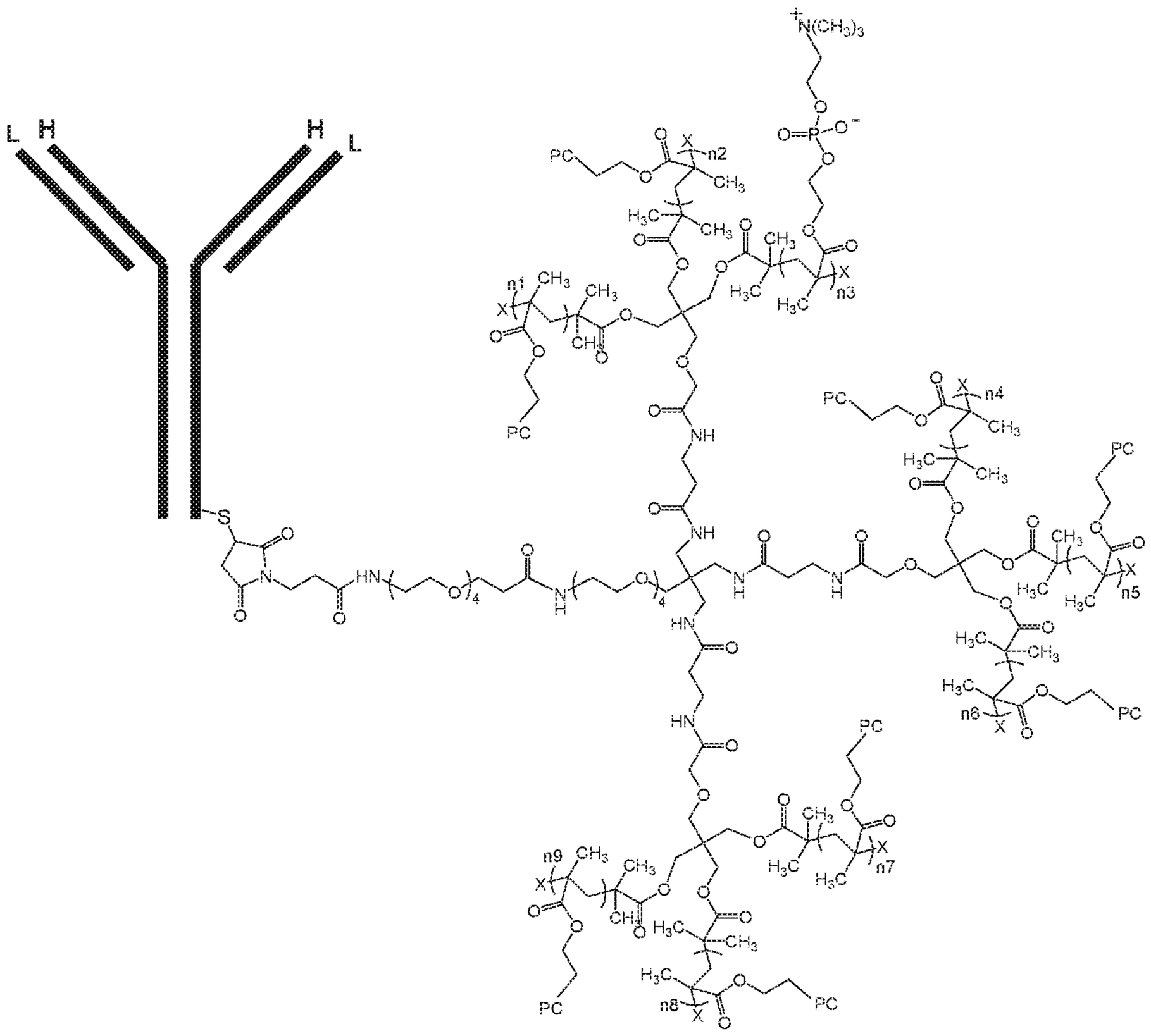
[0023] In some embodiments, a conjugate is provided that comprises: a) an isolated antagonist antibody that specifically binds to complement factor D (CFD); and b) a polymer comprising a zwitterionic monomer, wherein the zwitterionic monomer is selected from the group consisting of HEMA-phosphorylcholine, PEG, biocompatible fatty acids and derivatives thereof, Hydroxy Alkyl Starch (HAS), Hydroxy Ethyl Starch (HES), Poly Ethylene Glycol (PEG), Poly (Gly_x-Ser_y) (HAP), Hyaluronic acid (HA), Heparosan polymers (HEP), Fleximers, Dextran, Poly-sialic acids (PSA), Fc domains, Transferrin, 25 Albumin, Elastin like (ELP) peptides, XTEN polymers, PAS polymers, PA polymers, Albumin binding peptides, CTP peptides, and FcRn binding peptides.

[0024] In some embodiments, a conjugate comprising an anti-CFD antibody and a polymer that is capable of blocking at least 80% of an interaction between CFD and C3bB is provided.

[0025] In some embodiments, a conjugate comprising (1) an anti-CFD antibody and (2) a phosphorylcholine containing polymer is provided. The polymer is covalently bonded to the antibody at a cysteine outside a variable region of the antibody wherein said cysteine has been added via recombinant DNA technology.

[0026] In some embodiments of the conjugate, the conjugate the polymer has 9 arms; and the polymer has a molecular weight of between about 600,000 to about 900,000 Da.

[0027] In some embodiments of the conjugate, the conjugate has the following structure:

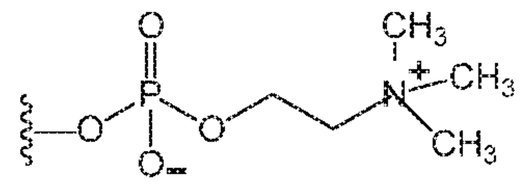


Formula (17)

wherein:

each heavy chain of the antibody is denoted by the letter H, and each light chain of the anti-CFD antibody is denoted by the letter L;

the polymer is bonded to the antibody through the sulfhydryl of C443 (EU numbering), which bond is depicted on one of the heavy chains;

PC is  , where the curvy line indicates the point of attachment to the rest of the polymer, where X=a) OR where R=H, methyl, ethyl, propyl, isopropyl, b) H, or c) any halide, including Br; and

n1, n2, n3, n4, n5, n6, n7, n8 and n9 are the same or different such that the sum of n1, n2, n3, n4, n5, n6, n6, n7, n8 and n9 is 2500 plus or minus 15%.

[0028] In some embodiments, an isolated cell line is provided that produces an isolated antagonistic antibody provided herein.

[0029] In some embodiments, an isolated nucleic acid is provided that encodes an isolated antagonistic antibody as provided herein.

[0030] In some embodiments, a recombinant expression vector is provided that comprises the nucleic acid.

[0031] In some embodiments, a host cell is provided that comprises the expression vector.

[0032] In some embodiments, a method of producing a CFD antagonist antibody is provided. The method comprises: culturing a cell line that recombinantly produces an isolated antagonistic antibody of as provided herein under conditions wherein the antibody is produced; and recovering the antibody.

[0033] In some embodiments, a method of producing a CFD antagonist antibody is provided. The method comprises: culturing a cell line comprising nucleic acid encoding an antibody comprising a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 520 and a light chain comprising the amino acid sequence shown in SEQ ID NO: 525 under conditions wherein the antibody is produced; and recovering the antibody.

[0034] In some embodiments, a pharmaceutical composition is provided. The composition comprises an isolated antagonistic antibody as provided herein and/or a conjugate as provided herein, and a pharmaceutically acceptable carrier.

[0035] In some embodiments, a method for the treatment or prophylaxis of a disease in a patient in need thereof is provided. The method comprises administering to the patient an isolated antagonist antibody as provided herein, and/or a conjugate as provided herein.

[0036] In some embodiments, a method for the treatment or prophylaxis of a disease in a patient in need thereof is provided. The method comprises: identifying a patient having hyperactive CFD activity; and administering to the patient an isolated antagonist antibody as provided herein and/or a conjugate as provided herein.

[0037] In some embodiments, a method for the treatment or prophylaxis of a disease in a patient in need thereof is provided. The method comprises administering to the patient a conjugate as provided herein, and/or a composition as provided herein.

[0038] In some embodiments, an isolated antagonist antibody is provided. The antibody binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences shown in SEQ ID NO: 520 and SEQ ID NO: 525.

[0039] In some embodiments, an isolated antagonist antibody that binds to CFD is provided. The antibody does not increase an enzymatic activity of CFD when bound thereto.

[0040] In some embodiments, an isolated antagonist antibody is provided. The antibody competes for binding to human CFD with an antibody comprising the amino acid sequences shown in SEQ ID NO: 520 and SEQ ID NO: 525.

[0041] In some embodiments, an isolated antagonist antibody that binds to CFD is provided. The antibody does not maintain an enzymatic activity of CFD when bound thereto.

[0042] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. When bound, the antibody is within 3A of residue 209 of SEQ ID NO: 1 of CFD.

[0043] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. When bound, the antibody is within 3A of residue 156 of SEQ ID NO: 1 of CFD.

[0044] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody binds to one or more of residues 156 or 209 of SEQ ID NO: 1 of CFD.

[0045] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody binds to both of residues 156 and 209 of SEQ ID NO: 1 of CFD.

[0046] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody, when bound to CFD, is not within 6 angstroms of at least one of 117, 118, and 156 of SEQ ID NO: 1.

[0047] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody binds to CFD as described in Tables: 1.1, 0.1A, 0.1B, 0.1D, and/or 11.3.

[0048] In some embodiments, a crystalized CFD-antibody complex is provided, wherein the antibody comprises any one or more of the CDRs within SEQ ID NO:s 183 or 520 and 184 or 525.

BRIEF DESCRIPTION OF THE DRAWINGS

[0049] FIG. 1 Depicts a sequence of CFD.

[0050] FIG. 2A shows Compound L.

[0051] FIG. 2B shows Compound K.

[0052] FIG. 2C shows the synthesis of OG1802 from R3707.

[0053] FIG. 2D shows OG1786.

[0054] FIG. 2E shows the synthesis of OG1546 from OG1550.

[0055] FIG. 2F shows the synthesis of OG1784 from OG1546 and OG1563.

[0056] FIG. 2G shows the synthesis of OG1405 from OG1784.

[0057] FIG. 2H shows the synthesis of OG 1785 from OG1405.

[0058] FIG. 2I shows the synthesis of OG1786 from OG1785.

[0059] FIG. 2J shows OG1801.

[0060] FIG. 2K shows OG1802.

[0061] FIG. 2L shows Compound E.

[0062] FIG. 3A shows KCD119 Family light chain alignment with human frameworks.

[0063] FIG. 3B shows KCD119 Family light chain alignment with human frameworks.

[0064] FIG. 4A shows KCD119 Family heavy chain alignment with human frameworks.

[0065] FIG. 4B shows KCD119 Family heavy chain alignment with human frameworks.

[0066] FIG. 5A shows binding affinity of KCD119-mouse monoclonal antibody to purified human CFD measured on Biacore T2000. Top panel shows binding and disassociation

curve of full IgG (capture on Protein A chip). Bottom panel shows binding and disassociation curve of Fab (capture on CM5 chip immobilized with anti-human Fab capture kit).

[0067] FIG. 5B shows binding affinity of KCD119-3-66 (KCD119 CDRs grafted onto human germlines IGHV3-66.and IGKVD1-39) binding affininty to purified human CFD measured on Biacore T2000 Top panel shows binding and disassociation curve of full IgG (capture on Protein A chip). Bottom panel shows binding and disassociation curve of Fab (capture on CM5 chip immobilized with anti-human Fab capture kit).

[0068] FIG. 5C shows binding affinity of KCD119-TAF to purified human CFD measured on Biacore 2000. Top panel shows binding and disassociation curve of full IgG (capture on Protein A chip). Bottom panel shows binding and disassociation curve of Fab (capture on CM5 chip immobilized with anti-human Fab capture kit).

[0069] FIG. 6A shows Factor D binding kinetics data for an embodiment of a combination of both heavy and light chain mutations that corresponded with positive changes in affinity.

[0070] FIG. 6B shows Factor D binding kinetics data for an embodiment of a combination of both heavy and light chain mutations that corresponded with positive changes in affinity.

[0071] FIG. 6C shows Factor D binding kinetics data for an embodiment of a combination of both heavy and light chain mutations that corresponded with positive changes in affinity.

[0072] FIG. 6D shows Factor D binding kinetics data for an embodiment of a combination of both heavy and light chain mutations that corresponded with positive changes in affinity.

[0073] FIG. 7A shows polyreactivity profile of a panel of antibodies tested by ELISA against dsDNA antigen.

[0074] FIG. 7B shows polyreactivity profile of a panel of antibodies tested by ELISA against ssDNA antigen.

[0075] FIG. 7C shows polyreactivity profile of a panel of antibodies tested by ELISA against insulin antigen.

[0076] FIG. 7D shows polyreactivity profile of a panel of antibodies tested by ELISA against KLH antigen.

[0077] FIG. 7E shows polyreactivity profile of a panel of antibodies tested by ELISA against LPS antigen.

[0078] FIG. 7F shows polyreactivity profile of a panel of antibodies tested by ELISA against cardiolipin antigen.

[0079] FIG. 8 shows an image of a Western blot of an FB cleavage assay for anti-CFD antibodies.

[0080] FIG. 9 shows a graph of the % of FB cleavage blocked in the FB cleavage assay for anti-CFD antibodies.

[0081] FIG. 10 shows an image of a Western blot of an FB cleavage assay for anti-CFD antibodies.

[0082] FIG. 11 shows a graph of the % of FB cleavage blocked in an FB cleavage assay for anti-CFD antibodies.

[0083] FIG. 12 shows effect of anti-CFD antibodies on the enzyme activity of human CFD for the synthetic substrate Z-L-Lys-SBzl hydrochloride.

[0084] FIG. 13 shows the effect of anti-CFD antibodies on complement-mediated hemolysis of rabbit RBCs.

[0085] FIG. 14 shows results of binding of anti-CFD antibodies and controls to C1q.

[0086] FIG. 15A shows binding kinetics of 34I54I59D84S/54R101V to FcγRI.

[0087] FIG. 15B shows binding kinetics of Avastin to FcγRI.

[0088] FIG. 16A shows binding kinetics of 34I54I59D84S/54R101V to FcγRIIIa.

[0089] FIG. 16B shows binding kinetics of Avastin to FcγRIIIa.

[0090] FIG. 16C shows binding of 34I54I59D84S/54R101V and Avastin to FcγRIIa.

[0091] FIG. 16D shows binding of 34I54I59D84S/54R101V and Avastin to FcγRIIb.

[0092] FIG. 16E shows binding of 34I54I59D84S/54R101V and Avastin to FcγRIIIb.

[0093] FIG. 17 depicts some embodiments of a method for preparing an antibody conjugate.

[0094] FIG. 18 shows binding affinity of 34I54I59D84S/54R101V to Cynomolgus CFD.

[0095] FIG. 19 shows binding affinities of 34I54I59D84S/54R101V to purified human CFD at 25 degree and 37 degree Celsius.

[0096] FIG. 20 shows the binding affinity of OG1965 and its bio-conjugate (OG1970) to purified human CFD.

[0097] FIG. 21 shows effect of OG1965 and OG1970 on the enzymatic activity of human CFD to cleave a peptide substrate.

[0098] FIGs. 22A and 22B display the results (graph and gel) for the FB cleavage assay for OG1965 and OG1970.

[0099] FIG. 22C displays FB cleavage assay using ELISA based method for OG 1965 and OG1970.

[0100] FIG. 23 displays the results of a hemolysis assay for OG1965 and OG1970 and controls.

[0101] FIG. 24A shows OG1965 binding to CFD. Fab heavy and light chains are shown in surface representation, CFD is shown in ribbon. Figure was prepared using software PyMOL (Open-Source PyMOL 0.99rc6).

[0102] FIG. 24B shows the OG1965 binding region at the CFD domain. The figure displays CFD in surface representation, OG1965 heavy and light chains are presented in black and white ribbons, respectively. Buried surface residues between Fab and CFD are highlighted in black over CFD surface representation. Figure was prepared using software PyMOL (Open-Source PyMOL 0.99rc6).

[0103] FIG. 25 shows residues (stick representation) at the CFD:Fab interface that are within a distance shorter than 3 Å. CFD is presented in ribbon, Fab heavy (underlined residues) and light chains (italicized residues) are presented in dark and light ribbons overlapped by transparent surface representations. Residues at the CFD active site (H41, D89, S183), self-inhibitory loop (R202) and S1 pocket (D177) are shown in sticks and highlighted by spheres. Figure was prepared using software PyMOL (Open-Source PyMOL 0.99rc6).

[0104] FIGs. 26A-26C show CFD and Fab residue contacts frequency. Top and bottom panels display the number of interactions between CFD and Fab light/heavy chains, respectively. Residue interactions were identified using an in-house Python-based algorithm developed to measure distances between inter-chain atoms. Contacts below 3 Å were selected and counted on a residue basis in FIG. 26A. Contacts below 5 Å were selected and counted on a residue basis in FIG. 26B. Contacts below 6 Å were selected and counted on a residue basis in FIG. 26C.

[0105] FIG. 27 illustrates a biacore complex assembly assay showing that both OG1965 and OG1970 inhibit CFD from binding to C3bB. KCD004 is used as a positive control.

[0106] FIG. 28A and FIG. 28B utilize immunofluorescence and ELISA to observe CFB cleavage as well as formation of the terminal complement complex, C5b-9, on ARPE19 cells.

DETAILED DESCRIPTION

[0107] Although progress had been made toward treatment of wet AMD, presently, there is no corresponding treatment for dry AMD or GA. There are also no available treatments to halt GA patch enlargement or slow vision loss. Because of the rapidly aging population and that dry AMD remains an untreated source of morbidity, there is a need for treatments for dry AMD.

[0108] There is also a need for dry AMD therapeutics and therapy regimes which will lead to good patient compliance. Currently, Roche's lampalizumab is in phase III clinical trials for treatment of GA. Lampalizumab is administered by intravitreal injection. While phase II results indicate some positive efficacy, efficacy was only seen for the monthly dosage of lampalizumab. In the study, bimonthly injections of lampalizumab were found to be no better than sham injections.

[0109] From the view point of both patients and treating physicians, intravitreal injections are not trivial. Many patients experience pain and discomfort from the injection and patient compliance is a serious issue. Common side effects of intravitreal injections include conjunctival hemorrhage, eye pain, vitreous floaters, increased intraocular pressure, and intraocular inflammation. Intravitreal injections are associated with relatively rare serious adverse events, including endophthalmitis, retinal detachment and traumatic cataracts.

[0110] There is, thus, also a need in the art for therapies that can be effectively administered less frequently, e.g., less than once a month.

[0111] Disclosed herein are antibodies that specifically bind to complement factor D (CFD), and conjugates thereof. Methods of making anti-CFD antibodies, anti-CFD antibody conjugates, compositions comprising these antibodies and/or antibody conjugates, and methods of using these antibodies and/or antibody conjugates as a medicament are also provided. Anti-

CFD antibodies and anti-CFD antibody conjugates provided herein can be used in the prevention and/or treatment of age related macular degeneration and/or other diseases.

[0112] OG1965 is a high affinity antagonistic humanized antibody against complement factor D (CFD). In some embodiments, it can be covalently conjugated to a high molecular weight biopolymer to result in OG1970, for intravitreal injection for the treatment of intermediate dry AMD and Geographic Atrophy (GA), as well as other indications. OG1970 is expected to have a longer resident half-life in the eye for potent efficacy and superior dosing intervals.

[0113] In some embodiments, the estimated Q12w or Q16w dosing interval of OG1970 can allow treatment of broad set of patients with increasingly earlier and less advanced forms of dry AMD

[0114] Various embodiments provided herein can employ, unless otherwise indicated, conventional techniques of molecular biology (including recombinant techniques), microbiology, cell biology, biochemistry and immunology, which are within the skill of the art. Such techniques are explained fully in the literature, such as, Molecular Cloning: A Laboratory Manual, second edition (Sambrook et al., 1989) Cold Spring Harbor Press; Oligonucleotide Synthesis (M.J. Gait, ed., 1984); Methods in Molecular Biology, Humana Press; Cell Biology: A Laboratory Notebook (J.E. Cellis, ed., 1998) Academic Press; Animal Cell Culture (R.I. Freshney, ed., 1987); Introduction to Cell and Tissue Culture (J.P. Mather and P.E. Roberts, 1998) Plenum Press; Cell and Tissue Culture: Laboratory Procedures (A. Doyle, J.B. Griffiths, and D.G. Newell, eds., 1993-1998) J. Wiley and Sons; Methods in Enzymology (Academic Press, Inc.); Handbook of Experimental Immunology (D.M. Weir and C.C. Blackwell, eds.); Gene Transfer Vectors for Mammalian Cells (J.M. Miller and M.P. Calos, eds., 1987); Current Protocols in Molecular Biology (F.M. Ausubel et al., eds., 1987); PCR: The Polymerase Chain Reaction, (Mullis et al., eds., 1994); Current Protocols in Immunology (J.E. Coligan et al., eds., 1991); Short Protocols in Molecular Biology (Wiley and Sons, 1999); Immunobiology (C.A. Janeway and P. Travers, 1997); Antibodies (P. Finch, 1997); Antibodies: a practical approach (D. Catty., ed., IRL Press, 1988-1989); Monoclonal antibodies: a practical approach (P. Shepherd and C. Dean, eds., Oxford University Press, 2000); Using antibodies: a laboratory manual (E. Harlow and D. Lane (Cold Spring Harbor Laboratory Press, 1999); The Antibodies (M. Zanetti and J.D. Capra, eds., Harwood Academic Publishers, 1995).

[0115] The following terms, unless otherwise indicated, shall be understood to have the following meanings: the term "isolated molecule" as referring to a molecule (where the molecule is, for example, a polypeptide, a polynucleotide, or an antibody) that by virtue of its origin or source of derivation (1) is not associated with naturally associated components that accompany it in its native state, (2) is substantially free of other molecules from the same source, e.g., species, cell from which it is expressed, library, etc., (3) is expressed by a cell from a different species, or (4) does not occur in nature. Thus, a molecule that is chemically synthesized, or expressed in a cellular system different from the system from which it naturally originates, will be "isolated" from its naturally associated components. A molecule also may be rendered substantially free of naturally associated components by isolation, using purification techniques well known in the art. Molecule 8purity or homogeneity may be assayed by a number of means well known in the art. For example, the purity of a polypeptide sample may be assayed using polyacrylamide gel electrophoresis and staining of the gel to visualize the polypeptide using techniques well known in the art. For certain purposes, higher resolution may be provided by using HPLC or other means well known in the art for purification.

[0116] As used herein, the term "CFD," "complement factor D," "factor D," or "FD," as used interchangeably herein, refers to any form of CFD and variants thereof that retain at least part of the activity of CFD. Unless indicated differently, such as by specific reference to human CFD, CFD includes all mammalian species of native sequence CFD, e.g., human, canine, feline, equine, and bovine. One exemplary human CFD is found as UniProt Accession Number P00746, which displayed sequence is further processed into a mature form, as shown in (SEQ ID NO: 1).

[0117] Anti-CFD antibodies or other biologics described herein are typically provided in isolated form. This means that an antibody is typically at least 50% w/w pure of interfering proteins and other contaminants arising from its production or purification but does not exclude the possibility that the antibody is combined with a pharmaceutically acceptable excipient intended to facilitate its use. Sometimes antibodies are at least 60, 70, 80, 90, 95 or 99% w/w pure of interfering proteins and contaminants from production or purification. Often an antibody (or antibody conjugate) is the predominant macromolecular species remaining after its purification. In some embodiments, no other protein material is present in at meaningful (functioning) level and/or detectable level.

[0118] An "antibody" is an immunoglobulin molecule capable of specific binding to a target, such as a carbohydrate, polynucleotide, lipid, polypeptide, etc., through at least one antigen recognition site, located in the variable region of the immunoglobulin molecule. As used herein, the term encompasses not only intact polyclonal or monoclonal antibodies, but also, unless otherwise specified, any antigen binding portion thereof that competes with the intact antibody for specific binding, fusion proteins comprising an antigen binding portion, and any other modified configuration of the immunoglobulin molecule that comprises an antigen recognition site. Antigen binding portions include, for example, Fab, Fab', $F(ab')_2$, Fd, Fv, domain antibodies (dAbs, e.g., shark and camelid antibodies), fragments including complementarity determining regions (CDRs), single chain variable fragment antibodies (scFv), maxibodies, minibodies, intrabodies, diabodies, triabodies, tetrabodies, v-NAR and bis-scFv, and polypeptides that contain at least a portion of an immunoglobulin that is sufficient to confer specific antigen binding to the polypeptide. An antibody includes an antibody of any class, such as IgG, IgA, or IgM (or sub-class thereof), and the antibody need not be of any particular class. Depending on the antibody amino acid sequence of the constant region of its heavy chains, immunoglobulins can be assigned to different classes. There are five major classes of immunoglobulins: IgA, IgD, IgE, IgG, and IgM, and several of these may be further divided into subclasses (isotypes), e.g., IgG_1, IgG_2, IgG_3, IgG_4, IgA_1 and IgA_2. The heavy-chain constant regions that correspond to the different classes of immunoglobulins are called alpha, delta, epsilon, gamma, and mu, respectively. The subunit structures and three-dimensional configurations of different classes of immunoglobulins are well known.

[0119] A "variable region" of an antibody refers to the variable region of the antibody light chain or the variable region of the antibody heavy chain, either alone or in combination. As known in the art, the variable regions of the heavy and light chains each consist of four framework regions (FRs) connected by three complementarity determining regions (CDRs) also known as hypervariable regions, and contribute to the formation of the antigen binding site of antibodies. If variants of a subject variable region are desired, particularly with substitution in amino acid residues outside of a CDR region (i.e., in the framework region), appropriate amino acid substitution, preferably, conservative amino acid substitution, can be identified by comparing the subject variable region to the variable regions of other antibodies

which contain CDR1 and CDR2 sequences in the same canonincal class as the subject variable region (Chothia and Lesk, J Mol Biol 196(4): 901-917, 1987).

[0120] In certain embodiments, definitive delineation of a CDR and identification of residues comprising the binding site of an antibody is accomplished by solving the structure of the antibody and/or solving the structure of the antibody-ligand complex. In certain embodiments, that can be accomplished by any of a variety of techniques known to those skilled in the art, such as X-ray crystallography. In certain embodiments, various methods of analysis can be employed to identify or approximate the CDR regions. In certain embodiments, various methods of analysis can be employed to identify or approximate the CDR regions. Examples of such methods include, but are not limited to, the Kabat definition, the Chothia definition, the IMGT approach (Lefranc et al., 2003) Dev Comp Immunol. 27:55-77), computational programs such as Paratome (Kunik et al., 2012, Nucl Acids Res. W521-4), the AbM definition, and the conformational definition.

[0121] The Kabat definition is a standard for numbering the residues in an antibody and is typically used to identify CDR regions. See, e.g., Johnson & Wu, 2000, Nucleic Acids Res., 28: 214-8. The Chothia definition is similar to the Kabat definition, but the Chothia definition takes into account positions of certain structural loop regions. See, e.g., Chothia et al., 1986, J. Mol. Biol., 196: 901-17; Chothia et al., 1989, Nature, 342: 877-83. The AbM definition uses an integrated suite of computer programs produced by Oxford Molecular Group that model antibody structure. See, e.g., Martin et al., 1989, Proc Natl Acad Sci (USA), 86:9268-9272; "AbM™, A Computer Program for Modeling Variable Regions of Antibodies," Oxford, UK; Oxford Molecular, Ltd. The AbM definition models the tertiary structure of an antibody from primary sequence using a combination of knowledge databases and ab initio methods, such as those described by Samudrala et al., 1999, "Ab Initio Protein Structure Prediction Using a Combined Hierarchical Approach," in PROTEINS, Structure, Function and Genetics Suppl., 3:194-198. The contact definition is based on an analysis of the available complex crystal structures. See, e.g., MacCallum et al., 1996, J. Mol. Biol., 5:732-45. In another approach, referred to herein as the "conformational definition" of CDRs, the positions of the CDRs may be identified as the residues that make enthalpic contributions to antigen binding. See, e.g., Makabe et al., 2008, Journal of Biological Chemistry, 283:1156-1166. Still other CDR boundary definitions may not strictly follow one of the above approaches, but will nonetheless overlap

with at least a portion of the Kabat CDRs, although they may be shortened or lengthened in light of prediction or experimental findings that particular residues or groups of residues do not significantly impact antigen binding. As used herein, a CDR may refer to CDRs defined by any approach known in the art, including combinations of approaches. The methods used herein may utilize CDRs defined according to any of these approaches. For any given embodiment containing more than one CDR, the CDRs may be defined in accordance with any of Kabat, Chothia, extended, IMGT, Paratome, AbM, and/or conformational definitions, or a combination of any of the foregoing.

[0122] As known in the art, a "constant region" of an antibody refers to the constant region of the antibody light chain or the constant region of the antibody heavy chain, either alone or in combination.

[0123] As used herein, "monoclonal antibody" refers to an antibody obtained from a population of substantially homogeneous antibodies, i.e., the individual antibodies comprising the population are identical except for possible naturally-occurring mutations that may be present in minor amounts. Monoclonal antibodies are highly specific, being directed against a single antigenic site. Furthermore, in contrast to polyclonal antibody preparations, which typically include different antibodies directed against different determinants (epitopes), each monoclonal antibody is directed against a single determinant on the antigen. The modifier "monoclonal" indicates the character of the antibody as being obtained from a substantially homogeneous population of antibodies, and is not to be construed as requiring production of the antibody by any particular method. For example, the monoclonal antibodies to be used in accordance with the present invention may be made by the hybridoma method first described by Kohler and Milstein, 1975, Nature 256:495, or may be made by recombinant DNA methods such as described in U.S. Pat. No. 4,816,567. The monoclonal antibodies may also be isolated from phage libraries generated using the techniques described in McCafferty et al., 1990, Nature 348:552-554, for example. As used herein, "humanized" antibody refers to forms of non-human (e.g. murine) antibodies that are chimeric immunoglobulins, immunoglobulin chains, or fragments thereof (such as Fv, Fab, Fab', F(ab')2 or other antigen-binding subsequences of antibodies) that contain minimal sequence derived from non-human immunoglobulin. Preferably, humanized antibodies are human immunoglobulins (recipient antibody) in which residues from a CDR of the recipient are replaced by residues from a CDR of a non-human species (donor antibody) such as mouse,

rat, or rabbit having the desired specificity, affinity, and capacity. The humanized antibody may comprise residues that are found neither in the recipient antibody nor in the imported CDR or framework sequences, but are included to further refine and optimize antibody performance.

[0124] A "human antibody" is one which possesses an amino acid sequence which corresponds to that of an antibody produced by a human and/or has been made using any of the techniques for making human antibodies as disclosed herein. This definition of a human antibody specifically excludes a humanized antibody comprising non-human antigen binding residues. A human antibody can be modified to provide altered (including superior) binding.

[0125] The term "chimeric antibody" is intended to refer to antibodies in which the variable region sequences are derived from one species and the constant region sequences are derived from another species, such as an antibody in which the variable region sequences are derived from a mouse antibody and the constant region sequences are derived from a human antibody. The term "epitope" refers to that portion of a molecule capable of being recognized by and bound by an antibody at one or more of the antibody's antigen-binding regions. Epitopes often consist of a surface grouping of molecules such as amino acids or sugar side chains and have specific three-dimensional structural characteristics as well as specific charge characteristics. In some embodiments, the epitope can be a protein epitope. Protein epitopes can be linear or conformational. In a linear epitope, all of the points of interaction between the protein and the interacting molecule (such as an antibody) occur linearly along the primary amino acid sequence of the protein. A "nonlinear epitope" or "conformational epitope" comprises noncontiguous polypeptides (or amino acids) within the antigenic protein to which an antibody specific to the epitope binds. The term "antigenic epitope" as used herein, is defined as a portion of an antigen to which an antibody can specifically bind as determined by any method well known in the art, for example, by conventional immunoassays. Once a desired epitope on an antigen is determined, it is possible to generate antibodies to that epitope, e.g., using the techniques described in the present specification. Alternatively, during the discovery process, the generation and characterization of antibodies may elucidate information about desirable epitopes. From this information, it is then possible to competitively screen antibodies for binding to the same epitope. An approach to achieve this is to conduct competition and cross-competition studies to find antibodies that compete or cross-compete with one another for binding to CFD, e.g., the antibodies compete for binding to the antigen.

[0126] The term "compete," as used herein with regard to an antibody, means that a first antibody, or an antigen-binding portion thereof, binds to an epitope in a manner sufficiently similar to the binding of a second antibody, or an antigen-binding portion thereof, such that the result of binding of the first antibody with its cognate epitope is detectably decreased in the presence of the second antibody compared to the binding of the first antibody in the absence of the second antibody. The alternative, where the binding of the second antibody to its epitope is also detectably decreased in the presence of the first antibody, can, but need not be the case. That is, a first antibody can inhibit the binding of a second antibody to its epitope without that second antibody inhibiting the binding of the first antibody to its respective epitope. However, where each antibody detectably inhibits the binding of the other antibody with its cognate epitope or ligand, whether to the same, greater, or lesser extent, the antibodies are said to "cross-compete" with each other for binding of their respective epitope(s). Both competing and cross-competing antibodies are encompassed by the present invention. Regardless of the mechanism by which such competition or cross-competition occurs (e.g., steric hindrance, conformational change, or binding to a common epitope, or portion thereof), the skilled artisan would appreciate, based upon the teachings provided herein, that such competing and/or cross-competing antibodies are encompassed and can be useful for the methods disclosed herein.

[0127] As used herein, an antibody "interacts with" CFD when the equilibrium dissociation constant is equal to or less than 20 nM, preferably less than about 6 nM, more preferably less than about 1 nM, most preferably less than about 0.2 nM, as measured by the methods disclosed herein in Example 8.

[0128] A CFD antagonist antibody encompasses antibodies that block, antagonize, suppress or reduce (to any degree including significantly) a CFD biological activity such as, e.g., substrate (including but not limited to, synthetic peptides or Factor B pre-bound to C3b) binding and/or cleavage, C3bB (a complex of factor B, magnesium ions, and complement component 3b) binding, and/or downstream pathways mediated by CFD signaling, such as elicitation of a cellular response to CFD activation. For purpose of the present invention, it will be explicitly understood that the term "CFD antagonist antibody" encompasses all the previously identified terms, titles, and functional states and characteristics whereby the CFD itself, a CFD biological activity (including but not limited to its ability to mediate any aspect of interaction with the C3bB, and downregulation of the alternative complement cascade), or the consequences of the

biological activity, are substantially nullified, decreased, or neutralized in any meaningful degree. In some embodiments, a CFD antagonist antibody binds CFD and substantially blocks CFD catalysis. Examples of CFD antagonist antibodies are provided herein.

[0129] An antibody that "preferentially binds" or "specifically binds" (used interchangeably herein) to an epitope is a term well understood in the art, and methods to determine such specific or preferential binding are also well known in the art. A molecule is said to exhibit "specific binding" or "preferential binding" if it reacts or associates more frequently, and/or more rapidly, and/or with greater duration and/or with greater affinity with a particular cell or substance than it does with alternative cells or substances. An antibody "specifically binds" or "preferentially binds" to a target if it binds with greater affinity, and/or avidity, and/or more readily, and/or with greater duration than it binds to other substances. For example, an antibody that specifically or preferentially binds to a CFD epitope is an antibody that binds this epitope with greater affinity, and/or avidity, and/or more readily, and/or with greater duration than it binds to other CFD epitopes or non-CFD epitopes. It is also understood by reading this definition that, for example, an antibody (or moiety or epitope) that specifically or preferentially binds to a first target may or may not specifically or preferentially bind to a second target. As such, "specific binding" or "preferential binding" does not necessarily require (although it can include) exclusive binding. Generally, but not necessarily, reference to binding means preferential binding.

[0130] As used herein, "substantially pure" refers to material which is at least 50% pure (i.e., free from contaminants), more preferably, at least 90% pure, more preferably, at least 95% pure, yet more preferably, at least 98% pure, and most preferably, at least 99% pure.

[0131] A "host cell" includes an individual cell or cell culture that can be or has been a recipient for vector(s) for incorporation of polynucleotide inserts. Host cells include progeny of a single host cell, and the progeny may not necessarily be completely identical (in morphology or in genomic DNA complement) to the original parent cell due to natural, accidental, or deliberate mutation. A host cell includes cells transfected in vivo with a polynucleotide(s) of this invention.

[0132] As known in the art, the term "Fc region" is used to define a C-terminal region of an immunoglobulin heavy chain. The "Fc region" may be a native sequence Fc region or a variant Fc region. Although the boundaries of the Fc region of an immunoglobulin heavy chain might vary, the human IgG heavy chain Fc region is usually defined to stretch from an amino

acid residue at position Cys226, or from Pro230, to the carboxyl-terminus thereof. The numbering of the residues in the Fc region is that of the EU index as in Kabat. Kabat et al., Sequences of Proteins of Immunological Interest, 5th Ed. Public Health Service, National Institutes of Health, Bethesda, Md., 1991. The Fc region of an immunoglobulin generally comprises two constant domains, CH2 and CH3. As is known in the art, an Fc region can be present in dimer or monomeric form.

[0133] As used in the art, "Fc receptor" and "FcR" describe a receptor that binds to the Fc region of an antibody. The preferred FcR is a native sequence human FcR. Moreover, a preferred FcR is one which binds an IgG antibody (a gamma receptor) and includes receptors of the FcγRI, FcγRII, and FcγRIII subclasses, including allelic variants and alternatively spliced forms of these receptors. FcγRII receptors include FcγRIIA (an "activating receptor") and FcγRIIB (an "inhibiting receptor"), which have similar amino acid sequences that differ primarily in the cytoplasmic domains thereof. FcRs are reviewed in Ravetch and Kinet, 1991, Ann. Rev. Immunol., 9:457-92; Capel et al., 1994, Immunomethods, 4:25-34; and de Haas et al., 1995, J. Lab. Clin. Med., 126:330-41. "FcR" also includes the neonatal receptor, FcRn, which is responsible for the transfer of maternal IgGs to the fetus (Guyer et al., 1976, J. Immunol., 117:587; and Kim et al., 1994, J. Immunol., 24:249).

[0134] A "functional Fc region" possesses at least one effector function of a native sequence Fc region. Exemplary "effector functions" include C1q binding; complement dependent cytotoxicity; Fc receptor binding; antibody-dependent cell-mediated cytotoxicity; phagocytosis; down-regulation of cell surface receptors (e.g. B cell receptor), etc. Such effector functions generally require the Fc region to be combined with a binding domain (e.g. an antibody variable domain) and can be assessed using various assays known in the art for evaluating such antibody effector functions.

[0135] A "native sequence Fc region" comprises an amino acid sequence identical to the amino acid sequence of an Fc region found in nature. A "variant Fc region" comprises an amino acid sequence which differs from that of a native sequence Fc region by virtue of at least one amino acid modification, yet retains at least one effector function of the native sequence Fc region. Preferably, the variant Fc region has at least one amino acid substitution compared to a native sequence Fc region or to the Fc region of a parent polypeptide, e.g. from about one to about ten amino acid substitutions, and preferably, from about one to about five amino acid

substitutions in a native sequence Fc region or in the Fc region of the parent polypeptide. The variant Fc region herein will preferably possess at least about 80% sequence identity with a native sequence Fc region and/or with an Fc region of a parent polypeptide, and most preferably, at least about 90% sequence identity therewith, more preferably, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99% sequence identity therewith.

[0136] As used herein, "treatment" is an approach for obtaining beneficial or desired clinical results.

[0137] As used herein, "CFD related disorders" include, for example, inflammatory disorders and disorders of the Complement cascade in patients. Inflammatory disorders include eye inflammatory disorders such as dry and wet age-related macular degeneration (including geographic strophy GA), glaucoma, diabetic retinopathy, corneal disease (e.g. chemical insults, acute bacterial infection, pseudophakic bullous keratopathy, HSV-1 keratitis, and herpes Zoster scleritis), and uveitis. Inflammatory disorders also include sepsis, systemic inflammatory response syndrome (SIRS), ischemia/reperfusion injury (I/R injury), psoriasis, myasthenia gravis, system lupus erythematosus (SLE), paroxysmal nocturnal hemoglobinuria (PNH), hereditary angioedema, multiple sclerosis, trauma, burn injury, capillary leak syndrome, obesity, diabetes, Alzheimer's dementia, stroke, schizophrenia, epilepsy, asthma, allergy, acute respiratory distress syndrome (ARDS), atypical hemolytic uremic syndrome (aHUS), hemolytic uremic syndrome (HUS), cystic fibrosis, myocardial infarction, lupus nephritides, Crohn's disease, rheumatoid arthritis, atherosclerosis, transplant rejection, prevention of fetal loss, biomaterial reactions (e.g. in hemodialysis, inplants), C3 glomerulonephritis, abdominal aortic aneurysm, and vasculitis.

[0138] Benefits can also be obtained from applying the methods and compositions provided herein to slowing the rate of deposition of drusen, decreasing the rate of atrophy and/or thinning of the RPE or conversely the rate of hypertrophy / hyperpigmentation of the RPE, decreasing the rate of formation of new abnormal blood vessels or rate of growth of existing abnormal blood vessels and magnitude of associated leakage of fluid and/or blood, slowing or reversing the deterioration in visual function loss as well as other symptoms resulting from dry and/or wet AMD, decreasing the frequency of administration and or dose of other medications

required to treat dry and/or wet AMD, and in general slowing the progression of dry and/or wet AMD, curing dry and/or wet AMD.

[0139] As used herein, "Ameliorating" means a lessening or improvement of one or more symptoms as compared to not administering an CFD antibody. "Ameliorating" also includes shortening or reduction in duration of a symptom.

[0140] As used herein, "Antagonistic antibody" denotes an antibody that blocks one or more function or activity of the molecule that the antibody binds to.

[0141] As used herein, an "effective dosage" or "effective amount" of drug, compound, or pharmaceutical composition is an amount sufficient to effect any one or more beneficial or desired results. In more specific aspects, an effective amount prevents, alleviates or ameliorates symptoms of disease, and/or prolongs the survival of the subject being treated. For prophylactic use, beneficial or desired results include eliminating or reducing the risk, lessening the severity, or delaying the outset of the disease, including biochemical, histological and/or behavioral symptoms of the disease, its complications and intermediate pathological phenotypes presenting during development of the disease. For therapeutic use, beneficial or desired results include clinical results such as reducing one or more symptoms of a disease such as, for example, AMD including, for example without limitation, dry AMD and wet AMD, decreasing the dose of other medications required to treat the disease, enhancing the effect of another medication, and/or delaying the progression of AMD in patients. An effective dosage can be administered in one or more administrations. For purposes of this invention, an effective dosage of drug, compound, or pharmaceutical composition is an amount sufficient to accomplish prophylactic or therapeutic treatment either directly or indirectly. As is understood in the clinical context, an effective dosage of a drug, compound, or pharmaceutical composition may or may not be achieved in conjunction with another drug, compound, or pharmaceutical composition. Thus, an "effective dosage" may be considered in the context of administering one or more therapeutic agents, and a single agent may be considered to be given in an effective amount if, in conjunction with one or more other agents, a desirable result may be or is achieved.

[0142] Anti-CFD antibodies are administered in an effective regime meaning a dosage, route of administration and frequency of administration that delays the onset, reduces the severity, inhibits further deterioration, and/or ameliorates at least one sign or symptom of a disorder. If a patient is already suffering from a disorder, the regime can be referred to as a

therapeutically effective regime. If the patient is at elevated risk of the disorder relative to the general population but is not yet experiencing symptoms, the regime can be referred to as a prophylactically effective regime. In some instances, therapeutic or prophylactic efficacy can be observed in an individual patient relative to historical controls or past experience in the same patient. In other instances, therapeutic or prophylactic efficacy can be demonstrated in a preclinical or clinical trial in a population of treated patients relative to a control population of untreated patients.

[0143] The "biological half-life" of a substance is a pharmacokinetic parameter which specifies the time required for one half of the substance to be removed from an organism following introduction of the substance into the organism.

[0144] The term "preventing" or "prevent" refers to (a) keeping a disorder from occurring (b) delaying the onset of a disorder or onset of symptoms of a disorder, and/or (c) slowing the progression of an existing condition. Unless denoted otherwise, "preventing" does not require the absolute prohibition of the event from occurring.

[0145] An "individual" or a "subject" is a mammal or bird, more preferably, a human. Mammals also include, but are not limited to, farm animals (e.g., cows, pigs, horses, chickens, etc.), sport animals, pets, primates, horses, dogs, cats, mice and rats.

[0146] As used herein, "vector" means a construct, which is capable of delivering, and, preferably, expressing, one or more gene(s) or sequence(s) of interest in a host cell. Examples of vectors include, but are not limited to, viral vectors, naked DNA or RNA expression vectors, plasmid, cosmid or phage vectors, DNA or RNA expression vectors associated with cationic condensing agents, DNA or RNA expression vectors encapsulated in liposomes, and certain eukaryotic cells, such as producer cells.

[0147] As used herein, "expression control sequence" means a nucleic acid sequence that directs transcription of a nucleic acid. An expression control sequence can be a promoter, such as a constitutive or an inducible promoter, or an enhancer. The expression control sequence is operably linked to the nucleic acid sequence to be transcribed.

[0148] As used herein, "pharmaceutically acceptable carrier" or "pharmaceutical acceptable excipient" includes any material which, when combined with an active ingredient, allows the ingredient to retain biological activity and is non-reactive with the subject's immune system. Examples include, but are not limited to, any of the standard pharmaceutical carriers

such as a phosphate buffered saline solution, water, emulsions such as oil/water emulsion, various types of wetting agents, detergents such as polysorbate 20 to prevent aggregation, and sugars such as sucrose as cryoprotectant. Preferred diluents for aerosol or parenteral administration are phosphate buffered saline (PBS) or normal (0.9%) saline. Compositions comprising such carriers are formulated by well-known conventional methods (see, for example, Remington's Pharmaceutical Sciences, 18th edition, A. Gennaro, ed., Mack Publishing Co., Easton, PA, 1990; and Remington, The Science and Practice of Pharmacy 20th Ed. Mack Publishing, 2000).

[0149] The term "k_{on}", as used herein, refers to the rate constant for association of an antibody (or bioconjugate) to an antigen. Specifically, the rate constants (k_{on} and k_{off}) and equilibrium dissociation constants are measured using full-length antibodies and/or Fab antibody fragments (i.e. univalent) and CFD.

[0150] The term "k_{off} ", as used herein, refers to the rate constant for dissociation of an antibody (or bioconjugate) from the antibody/antigen complex.

[0151] The term "K_D", as used herein, refers to the equilibrium dissociation constant of an antibody-antigen (or bioconjugate-antigen) interaction.

[0152] Reference to “about” a value or parameter herein includes (and describes) embodiments that are directed to that value or parameter per se. For example, description referring to “about X” includes description of “X.” Numeric ranges are inclusive of the numbers defining the range.

[0153] The term "patient" includes human and other subjects (including mammals) that receive either prophylactic or therapeutic treatment.

[0154] For purposes of classifying amino acids substitutions as conservative or nonconservative, amino acids are grouped as follows: Group I (hydrophobic side chains): met, ala, val, leu, ile; Group II (neutral hydrophilic side chains): cys, ser, thr; Group III (acidic side chains): asp, glu; Group IV (basic side chains): asn, gln, his, lys, arg; Group V (residues influencing chain orientation): gly, pro; and Group VI (aromatic side chains): trp, tyr, phe. Conservative substitutions involve substitutions between amino acids in the same class. Non-conservative substitutions constitute exchanging a member of one of these classes for a member of another.

[0155] Percentage sequence identities are determined with antibody sequences maximally aligned by the Kabat numbering convention for a variable region or EU numbering for a constant region. After alignment, if a subject antibody region (e.g., the entire mature variable region of a heavy or light chain) is being compared with the same region of a reference antibody, the percentage sequence identity between the subject and reference antibody regions is the number of positions occupied by the same amino acid in both the subject and reference antibody region divided by the total number of aligned positions of the two regions, with gaps not counted, multiplied by 100 to convert to percentage. Sequence identities of other sequences can be determined by aligning sequences using algorithms, such as BESTFIT, FASTA, and TFASTA in the Wisconsin Genetics Software Package Release 7.0, Genetics Computer Group, 575 Science Dr., Madison, WI, using default gap parameters, or by inspection, and the best alignment (*i.e.*, resulting in the highest percentage of sequence similarity over a comparison window). Percentage of sequence identity is calculated by comparing two optimally aligned sequences over a window of comparison, determining the number of positions at which the identical residues occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the window of comparison (*i.e.*, the window size), and multiplying the result by 100 to yield the percentage of sequence identity.

[0156] The term "antibody-dependent cellular cytotoxicity", or ADCC, is a mechanism for inducing cell death that depends upon the interaction of antibody-coated target cells (i.e., cells with bound antibody) with immune cells possessing lytic activity (also referred to as effector cells). Such effector cells include natural killer cells, monocytes/macrophages and neutrophils. ADCC is triggered by interactions between the Fc region of an antibody bound to a cell and Fcγ receptors, particularly FcγRI and FcγRIII, on immune effector cells such as neutrophils, macrophages and natural killer cells. The target cell is eliminated by phagocytosis or lysis, depending on the type of mediating effector cell. Death of the antibody-coated target cell occurs as a result of effector cell activity.

[0157] A humanized antibody is a genetically engineered antibody in which the CDRs from a non-human "donor" antibody are grafted into a human "acceptor" antibody sequences (see, e.g., Queen, US 5,530,101 and 5,585,089; Winter, US 5,225,539, Carter, US 6,407,213, Adair, US 5,859,205 6,881,557, Foote, US 6,881,557). The acceptor antibody

sequences can be, for example, a mature human antibody sequence, a composite of such sequences, a consensus sequence of human antibody sequences, or a germline region sequence. Thus, a humanized antibody is an antibody having some or all CDRs entirely or substantially from a donor antibody and variable region framework sequences and constant regions, if present, entirely or substantially from human antibody sequences. Similarly a humanized heavy chain has at least one, two and usually all three CDRs entirely or substantially from a donor antibody heavy chain, and a heavy chain variable region framework sequence and heavy chain constant region, if present, substantially from human heavy chain variable region framework and constant region sequences. Similarly a humanized light chain has at least one, two and usually all three CDRs entirely or substantially from a donor antibody light chain, and a light chain variable region framework sequence and light chain constant region, if present, substantially from human light chain variable region framework and constant region sequences. Other than nanobodies and dAbs, a humanized antibody comprises a humanized heavy chain and a humanized light chain. A CDR in a humanized antibody is substantially from a corresponding CDR in a non-human antibody when at least 85%, 90%, 95% or 100% of corresponding residues (as defined by Kabat) are identical between the respective CDRs. The variable region framework sequences of an antibody chain or the constant region of an antibody chain are substantially from a human variable region framework sequence or human constant region respectively when at least 85, 90, 95 or 100% of corresponding residues defined by Kabat are identical.

[0158] Although humanized antibodies often incorporate all six CDRs (preferably as defined by Kabat) from a mouse antibody, they can also be made with less than all CDRs (e.g., at least 3, 4, or 5 CDRs from a mouse antibody) (e.g., Pascalis et al, J. Immunol. 169:3076, 2002; Vajdos et al., Journal of Molecular Biology, 320: 415-428, 2002; Iwahashi et al., Mol. Immunol. 36: 1079-1091, 1999; Tamura et al, Journal of Immunology, 164: 1432-1441 , 2000).

[0159] A chimeric antibody is an antibody in which the mature variable regions of light and heavy chains of a non-human antibody (e.g., a mouse) are combined with human light and heavy chain constant regions. Such antibodies substantially or entirely retain the binding specificity of the mouse antibody, and are about two-thirds human sequence.

[0160] A veneered antibody is a type of humanized antibody that retains some and usually all of the CDRs and some of the non-human variable region framework residues of a non-human antibody but replaces other variable region framework residues that may contribute

to B- or T-cell epitopes, for example exposed residues (Padlan, Mol. Immunol. 28:489, 1991) with residues from the corresponding positions of a human antibody sequence. The result is an antibody in which the CDRs are entirely or substantially from a non-human antibody and the variable region frameworks of the non-human antibody are made more human-like by the substitutions. A human antibody can be isolated from a human, or otherwise result from expression of human immunoglobulin genes (e.g., in a transgenic mouse, in vitro or by phage display). Methods for producing human antibodies include the trioma method of Oestberg et al., Hybridoma 2:361-367 (1983); Oestberg, U.S. Patent No. 4,634,664; and Engleman et al., US Patent 4,634,666, use of transgenic mice including human immunoglobulin genes (see, e.g., Lonberg et al., W093/12227 (1993); US 5,877,397, US 5,874,299, US 5,814,318, US 5,789,650, US 5,770,429, US 5,661,016, US 5,633,425, US 5,625,126, US 5,569,825, US 5,545,806, Nature 148, 1547-1553 (1994), Nature Biotechnology 14, 826 (1996), Kucherlapati, WO 91/10741 (1991) and phage display methods (see, .e.g. Dower et al., WO 91/17271 and McCafferty et al., WO 92/01047, US 5,877,218, US 5,871,907, US 5,858,657, US 5,837,242, US 5,733,743 and US 5,565,332.

[0161] A "polymer" is a molecule composed of many repeating subunits. The subunits, also sometimes referred to as "monomers" can be the same or different. There are both natural and synthetic polymers. DNA, protein and complex carbohydrates are examples of natural polymers. Poly-styrene and poly-acrylamide are examples of synthetic polymers. A polymer composed of repeating units of a single monomer is called a homopolymer. A polymer composed of two or more monomers is called a copolymer or sometimes a heteropolymer. A copolymer in which certain monomer types are clustered together are sometimes called block copolymers. Polymers can be linear or branched. When the polymer is branched, polymer chains having a common origin are sometimes referred to as a polymer arm(s).

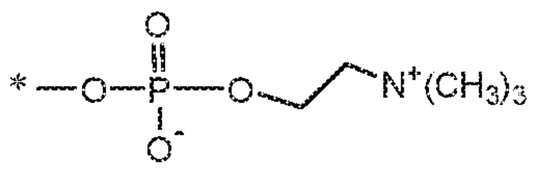
[0162] An "initiator" is a compound capable of serving as a substrate on which one or more polymerizations can take place using monomers or comonomers as described herein. The polymerization can be a conventional free radical polymerization or preferably a controlled/"living" radical polymerization, such as Atom Transfer Radical Polymerization (ATRP), Reversible Addition-Fragmentation-Termination (RAFT) polymerization or nitroxide mediated polymerization (NMP). The polymerization can be a "pseudo" controlled polymerization, such as degenerative transfer. Initiators suitable for ATRP contain one or more

labile bonds which can be homolytically cleaved to form an initiator fragment, I, being a radical capable of initiating a radical polymerization, and a radical scavenger, I', which reacts with the radical of the growing polymer chain to reversibly terminate the polymerization. The radical scavenger I' is typically a halogen, but can also be an organic moiety, such as a nitrile. In some embodiments of the present invention, the initiator contains one or more 2-bromoisobutyrate groups as sites for polymerization via ATRP.

[0163] A "chemical linker" refers to a chemical moiety that links two groups together, such as a half-life extending moiety and a protein. The linker can be cleavable or non-cleavable. Cleavable linkers can be hydrolysable, enzymatically cleavable, pH sensitive, photolabile, or disulfide linkers, among others. Other linkers include homobifunctional and heterobifunctional linkers. A "linking group" is a functional group capable of forming a covalent linkage consisting of one or more bonds to a bioactive agent. Non-limiting examples include those illustrated in Table 1 of WO2013059137 (incorporated by reference).

[0164] The term "reactive group" refers to a group that is capable of reacting with another chemical group to form a covalent bond, i.e. is covalently reactive under suitable reaction conditions, and generally represents a point of attachment for another substance. The reactive group is a moiety, such as maleimide or succinimidyl ester, is capable of chemically reacting with a functional group on a different moiety to form a covalent linkage. Reactive groups generally include nucleophiles, electrophiles and photoactivatable groups.

[0165] As used herein, "phosphorylcholine," also denoted as "PC," refers to the following:



[0166] where * denotes the point of attachment. The phosphorylcholine is a zwitterionic group and includes salts (such as inner salts), and protonated and deprotonated forms thereof.

[0167] As used herein, "phosphorylcholine containing polymer" is a polymer that contains phosphorylcholine. "Zwitterion containing polymer" refers to a polymer that contains a zwitterion.

[0168] Poly(acryloyloxyethyl phosphorylcholine) containing polymer refers to a polymer containing 2-(acryloyloxy)ethyl-2-(trimethylammonium)ethyl phosphate as monomer.

[0169] Poly(methacryloyloxyethyl phosphorylcholine) containing polymer refers to a polymer containing 2-(methacryloyloxy)ethyl-2-(trimethylammonium)ethyl phosphate as monomer.

[0170] As used herein, "molecular weight" in the context of the polymer can be expressed as either a number average molecular weight, or a weight average molecular weight or a peak molecular weight. Unless otherwise indicated, all references to molecular weight herein refer to the peak molecular weight. These molecular weight determinations, number average (Mn), weight average (Mw) and peak (Mp), can be measured using size exclusion chromatography or other liquid chromatography techniques. Other methods for measuring molecular weight values can also be used, such as the use of end-group analysis or the measurement of colligative properties (*e.g.*, freezing-point depression, boiling-point elevation, or osmotic pressure) to determine number average molecular weight, or the use of light scattering techniques, ultracentrifugation or viscometry to determine weight average molecular weight. In a preferred embodiment of the present invention, the molecular weight is measured by SEC-MALS (size exclusion chromatography – multi angle light scattering). The polymeric reagents of the invention are typically polydisperse (*i.e.*, number average molecular weight and weight average molecular weight of the polymers are not equal). The Poly Dispersity Index (PDI) provides a measure for the dispersity of polymers in a mixture. PDI is given by the formula Mw/Mn. In this regard a homogenous protein will have a PDI of 1.0 (Mn is the same as Mw). Typically, the PDI for polymers will be above 1.0. Polymers in accordance with the present invention preferably have relatively low polydispersity (PDI) values of, for example, less than about 1.5, as judged, for example, by SEC-MALS. In other embodiments, the polydispersities (PDI) are more preferably in the range of about 1.4 to about 1.2, still more preferably less than about 1.15, and still more preferably less than about 1.10, yet still more preferably less than about 1.05, and most preferably less than about 1.03.

[0171] As used herein, "protected," "protected form," "protecting group" and "protective group" refer to the presence of a group (*i.e.*, the protecting group) that prevents or blocks reaction of a particular chemically reactive functional group in a molecule under certain reaction conditions. Protecting groups vary depending upon the type of chemically reactive group being protected as well as the reaction conditions to be employed and the presence of additional reactive or protecting groups in the molecule, if any. Suitable protecting groups

include those such as found in the treatise by Greene et al., "Protective Groups In Organic Synthesis," 3rd Edition, John Wiley and Sons, Inc., New York, 1999.

[0172] As used herein, "alkyl" refers to a straight or branched, saturated, aliphatic radical having the number of carbon atoms indicated. For example, C_1-C_6 alkyl includes, but is not limited to, methyl, ethyl, propyl, isopropyl, butyl, isobutyl, sec-butyl, tert-butyl, pentyl, isopentyl, hexyl, etc. Other alkyl groups include, but are not limited to heptyl, octyl, nonyl, decyl, etc. Alkyl can include any number of carbons, such as 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 2-3, 2-4, 2-5, 2-6, 3-4, 3-5, 3-6, 4-5, 4-6 and 5-6 carbons.

[0173] The term "lower" referred to above and hereinafter in connection with organic radicals or compounds respectively defines a compound or radical which can be branched or unbranched with up to and including 7, preferably up to and including 4 and (as unbranched) one or two carbon atoms.

[0174] As used herein, "alkylene" refers to an alkyl group, as defined above, linking at least two other groups, *i.e.*, a divalent hydrocarbon radical. The two moieties linked to the alkylene can be linked to the same atom or different atoms of the alkylene. For instance, a straight chain alkylene can be the bivalent radical of $-(CH_2)_n$, where n is 1, 2, 3, 4, 5 or 6. Alkylene groups include, but are not limited to, methylene, ethylene, propylene, isopropylene, butylene, isobutylene, sec-butylene, pentylene and hexylene.

[0175] Substituents for the alkyl, alkenyl, alkylene, heteroalkyl, heteroalkylene, heteroalkenyl, alkynyl, cycloalkyl, heterocycloalkyl, cycloalkenyl, and heterocycloalkenyl radicals can be one or more of a variety of groups selected from, but not limited to: -OR', =O, =NR',=N-OR', -NR'R", -SR', -halogen, -SiR'R"R"', -OC(O)R', -C(O)R', $-CO_2R'$, -CONR'R", -OC(O)NR'R", -NR"C(O)R', -NR'-C(O)NR"R"', $-NR"C(O)_2R'$, -NR-C(NR'R"R"')=NR"", -NR-C(NR'R")=NR"', -S(O)R', $-S(O)_2R'$, $-S(O)_2NR'R"$, $-NRSO_2R'$, -CN and $-NO_2$ in a number ranging from 1 to (2m'+1), where m' is the total number of carbon atoms in such radical. Each of R', R", R"' and R"" independently refers to hydrogen, substituted or unsubstituted heteroalkyl, substituted or unsubstituted aryl, *e.g.*, aryl substituted with 1-3 halogens, substituted or unsubstituted alkyl, alkoxy or thioalkoxy groups, or arylalkyl groups. When R' and R" are attached to the same nitrogen atom, they can be combined with the nitrogen atom to form a 5-, 6-, or 7-membered ring. For example, -NR'R" is meant to include, but not be limited to, 1-pyrrolidinyl and 4-morpholinyl.

[0176] As used herein, "alkoxy" refers to alkyl group attached to an oxygen atom and forms radical –O-R, wherein R is alkyl. Alkoxy groups include, for example, methoxy, ethoxy, propoxy, iso-propoxy, butoxy, 2-butoxy, iso-butoxy, sec-butoxy, tert-butoxy, pentoxy, hexoxy, etc. The alkoxy groups can be further substituted with a variety of substituents described herein. For example, the alkoxy groups can be substituted with halogens to form a "halo-alkoxy" group.

[0177] As used herein, "carboxyalkyl" means an alkyl group (as defined herein) substituted with a carboxy group. The term "carboxycycloalkyl" means an cycloalkyl group (as defined herein) substituted with a carboxy group. The term alkoxyalkyl means an alkyl group (as defined herein) substituted with an alkoxy group. The term "carboxy" employed herein refers to carboxylic acids and their esters.

[0178] As used herein, "haloalkyl" refers to alkyl as defined above where some or all of the hydrogen atoms are substituted with halogen atoms. Halogen (halo) preferably represents chloro or fluoro, but may also be bromo or iodo. For example, haloalkyl includes trifluoromethyl, fluoromethyl, 1,2,3,4,5-pentafluoro-phenyl, etc. The term "perfluoro" defines a compound or radical which has all available hydrogens that are replaced with fluorine. For example, perfluorophenyl refers to 1,2,3,4,5-pentafluorophenyl, perfluoromethyl refers to 1,1,1-trifluoromethyl, and perfluoromethoxy refers to 1,1,1-trifluoromethoxy. Haloalkyl can also be referred to as halo-substitute alkyl, such as fluoro-substituted alkyl.

[0179] As used herein, "cytokine" in the context of this invention is a member of a group of protein signaling molecules that may participate in cell-cell communication in immune and inflammatory responses. Cytokines are typically small, water-soluble glycoproteins that have a mass of about 8-35 kDa.

[0180] As used herein, "cycloalkyl" refers to a saturated mono- or multi- cyclic aliphatic ring system that contains from about 3 to 12, from 3 to 10, from 3 to 7, or from 3 to 6 carbon atoms. When cycloalkyl group is composed of two or more rings, the rings may be joined together with a fused ring or a spiro ring structure. When cycloalkyl group is composed of three or more rings, the rings may also join together forming a bridged ring structure. Monocyclic rings include, for example, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, and cyclooctyl. Bicyclic and polycyclic rings include, for example, bicyclo[1.1.1]pentane, bicyclco[2.1.1]heptane, norbornane, decahydronaphthalene and adamantane. For example, C_{3-8}

cycloalkyl includes cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclooctyl, and norbornane.

[0181] As used herein, "endocyclic" refers to an atom or group of atoms which comprise part of a cyclic ring structure.

[0182] As used herein, "exocyclic" refers to an atom or group of atoms which are attached but do not define the cyclic ring structure.

[0183] As used herein, "cyclic alkyl ether" refers to a 4 or 5 member cyclic alkyl group having 3 or 4 endocyclic carbon atoms and 1 endocyclic oxygen or sulfur atom (*e.g.*, oxetane, thietane, tetrahydrofuran, tetrahydrothiophene); or a 6 to 7 member cyclic alkyl group having 1 or 2 endocyclic oxygen or sulfur atoms (*e.g.*, tetrahydropyran, 1,3-dioxane, 1,4-dioxane, tetrahydrothiopyran, 1,3-dithiane, 1,4-dithiane, 1,4-oxathiane).

[0184] As used herein, "alkenyl" refers to either a straight chain or branched hydrocarbon of 2 to 6 carbon atoms, having at least one double bond. Examples of alkenyl groups include, but are not limited to, vinyl, propenyl, isopropenyl, 1-butenyl, 2-butenyl, isobutenyl, butadienyl, 1-pentenyl, 2-pentenyl, isopentenyl, 1,3-pentadienyl, 1,4-pentadienyl, 1-hexenyl, 2-hexenyl, 3-hexenyl, 1,3-hexadienyl, 1,4-hexadienyl, 1,5-hexadienyl, 2,4-hexadienyl, or 1,3,5-hexatrienyl. Alkenyl groups can also have from 2 to 3, 2 to 4, 2 to 5, 3 to 4, 3 to 5, 3 to 6, 4 to 5, 4 to 6 and 5 to 6 carbons.

[0185] As used herein, "alkenylene" refers to an alkenyl group, as defined above, linking at least two other groups, *i.e.*, a divalent hydrocarbon radical. The two moieties linked to the alkenylene can be linked to the same atom or different atoms of the alkenylene. Alkenylene groups include, but are not limited to, ethenylene, propenylene, isopropenylene, butenylene, isobutenylene, sec-butenylene, pentenylene and hexenylene.

[0186] As used herein, "alkynyl" refers to either a straight chain or branched hydrocarbon of 2 to 6 carbon atoms, having at least one triple bond. Examples of alkynyl groups include, but are not limited to, acetylenyl, propynyl, 1-butynyl, 2-butynyl, isobutynyl, sec-butynyl, butadiynyl, 1-pentynyl, 2-pentynyl, isopentynyl, 1,3-pentadiynyl, 1,4-pentadiynyl, 1-hexynyl, 2-hexynyl, 3-hexynyl, 1,3-hexadiynyl, 1,4-hexadiynyl, 1,5-hexadiynyl, 2,4-hexadiynyl, or 1,3,5-hexatriynyl. Alkynyl groups can also have from 2 to 3, 2 to 4, 2 to 5, 3 to 4, 3 to 5, 3 to 6, 4 to 5, 4 to 6 and 5 to 6 carbons.

[0187] As used herein, "alkynylene" refers to an alkynyl group, as defined above, linking at least two other groups, *i.e.*, a divalent hydrocarbon radical. The two moieties linked to the alkynylene can be linked to the same atom or different atoms of the alkynylene. Alkynylene groups include, but are not limited to, ethynylene, propynylene, butynylene, sec-butynylene, pentynylene and hexynylene.

[0188] As used herein, "cycloalkylene" refers to a cycloalkyl group, as defined above, linking at least two other groups, *i.e.*, a divalent hydrocarbon radical. The two moieties linked to the cycloalkylene can be linked to the same atom or different atoms of the cycloalkylene. Cycloalkylene groups include, but are not limited to, cyclopropylene, cyclobutylene, cyclopentylene, cyclohexylene, and cyclooctylene.

[0189] As used herein, "heterocycloalkyl" refers to a ring system having from 3 ring members to about 20 ring members and from 1 to about 5 heteroatoms such as N, O and S. Additional heteroatoms can also be useful, including, but not limited to, B, Al, Si and P. The heteroatoms can also be oxidized, such as, but not limited to, -S(O)- and -$S(O)_2$-. For example, heterocycle includes, but is not limited to, tetrahydrofuranyl, tetrahydrothiophenyl, morpholino, pyrrolidinyl, pyrrolinyl, imidazolidinyl, imidazolinyl, pyrazolidinyl, pyrazolinyl, piperazinyl, piperidinyl, indolinyl, quinuclidinyl and 1,4-dioxa-8-aza-spiro[4.5]dec-8-yl.

[0190] As used herein, "heterocycloalkylene" refers to a heterocyclalkyl group, as defined above, linking at least two other groups. The two moieties linked to the heterocycloalkylene can be linked to the same atom or different atoms of the heterocycloalkylene.

[0191] As used herein, "aryl" refers to a monocyclic or multicyclic (e.g., fused bicyclic, tricyclic or greater) aromatic ring assembly containing 6 to 16 carbon atoms. For example, aryl may be phenyl, benzyl or naphthyl, preferably phenyl. Aryl groups can be mono-, di- or tri-substituted by one, two or three radicals selected from alkyl, alkoxy, aryl, hydroxy, halogen, cyano, amino, amino-alkyl, trifluoromethyl, alkylenedioxy and oxy-C_2-C_3-alkylene; all of which are optionally further substituted, for instance as hereinbefore defined; or 1- or 2-naphthyl; or 1- or 2-phenanthrenyl. Alkylenedioxy is a divalent substitute attached to two adjacent carbon atoms of phenyl, e.g. methylenedioxy or ethylenedioxy. Oxy-C_2-C_3-alkylene is also a divalent substituent attached to two adjacent carbon atoms of phenyl, e.g. oxyethylene or oxypropylene. An example for oxy- C_2-C_3-alkylene-phenyl is 2,3-dihydrobenzofuran-5-yl.

[0192] Preferred as aryl is naphthyl, phenyl or phenyl mono- or disubstituted by alkoxy, phenyl, halogen, alkyl or trifluoromethyl, especially phenyl or phenyl-mono- or disubstituted by alkoxy, halogen or trifluoromethyl, and in particular phenyl.

[0193] Examples of substituted phenyl groups as R are, *e.g.* 4-chlorophen-1-yl, 3,4-dichlorophen-1-yl, 4-methoxyphen-1-yl, 4-methylphen-1-yl, 4-aminomethylphen-1-yl, 4-methoxyethylaminomethylphen-1-yl, 4-hydroxyethylaminomethylphen-1-yl, 4-hydroxyethyl-(methyl)-aminomethylphen-1-yl, 3-aminomethylphen-1-yl, 4-N-acetylaminomethylphen-1-yl, 4-aminophen-1-yl, 3-aminophen-1-yl, 2-aminophen-1-yl, 4-phenyl-phen-1-yl, 4-(imidazol-1-yl)-phenyl, 4-(imidazol-1-ylmethyl)-phen-1-yl, 4-(morpholin-1-yl)-phen-1-yl, 4-(morpholin-1-ylmethyl)-phen-1-yl, 4-(2-methoxyethylaminomethyl)-phen-1-yl and 4-(pyrrolidin-1-ylmethyl)-phen-1-yl, 4-(thiophenyl)-phen-1-yl, 4-(3-thiophenyl)-phen-1-yl, 4-(4-methylpiperazin-1-yl)-phen-1-yl, and 4-(piperidinyl)-phenyl and 4-(pyridinyl)-phenyl optionally substituted in the heterocyclic ring.

[0194] As used herein, "arylene" refers to an aryl group, as defined above, linking at least two other groups. The two moieties linked to the arylene are linked to different atoms of the arylene. Arylene groups include, but are not limited to, phenylene.

[0195] As used herein, "arylene-oxy" refers to an arylene group, as defined above, where one of the moieties linked to the arylene is linked through an oxygen atom. Arylene-oxy groups include, but are not limited to, phenylene-oxy.

[0196] Similarly, substituents for the aryl and heteroaryl groups are varied and are selected

from: -halogen, -OR', -OC(O)R', -NR'R", -SR', -R', -CN, -NO_2, -CO_2R', -CONR'R", -C(O)R', -OC(O)NR'R", -NR"C(O)R', -NR"$C(O)_2$R', -NR'-C(O)NR"R"', -NH-$C(NH_2)$=NH, -NR'$C(NH_2)$=NH, -NH-$C(NH_2)$=NR', -S(O)R', -$S(O)_2$R', -$S(O)_2$NR'R", -N_3, -$CH(Ph)_2$, perfluoro(C_1-C_4)alkoxy, and perfluoro(C_1-C_4)alkyl, in a number ranging from zero to the total number of open valences on the aromatic ring system; and where R', R" and R"' are independently selected from hydrogen, (C_1-C_8)alkyl and heteroalkyl, unsubstituted aryl and heteroaryl, (unsubstituted aryl)-(C_1-C_4)alkyl, and (unsubstituted aryl)oxy-(C_1-C_4)alkyl.

[0197] Two of the substituents on adjacent atoms of the aryl or heteroaryl ring may optionally be replaced with a substituent of the formula -T-C(O)-$(CH_2)_q$-U-, wherein T and U are independently -NH-, -O-, -CH_2- or a single bond, and q is an integer of from 0 to 2.

Alternatively, two of the substituents on adjacent atoms of the aryl or heteroaryl ring may optionally be replaced with a substituent of the formula -A-$(CH_2)_r$-B-, wherein A and B are independently -CH_2-, -O-, -NH-, -S-, -S(O)-, -$S(O)_2$-, -$S(O)_2NR'$- or a single bond, and r is an integer of from 1 to 3. One of the single bonds of the new ring so formed may optionally be replaced with a double bond. Alternatively, two of the substituents on adjacent atoms of the aryl or heteroaryl ring may optionally be replaced with a substituent of the formula -$(CH_2)_s$-X-$(CH_2)_t$-, where s and t are independently integers of from 0 to 3, and X is -O-, -NR'-, -S-, -S(O)-, -$S(O)_2$-, or -$S(O)_2NR'$-. The substituent R' in -NR'- and -$S(O)_2NR'$- is selected from hydrogen or unsubstituted (C_1-C_6)alkyl.

[0198] As used herein, "heteroaryl" refers to a monocyclic or fused bicyclic or tricyclic aromatic ring assembly containing 5 to 16 ring atoms, where from 1 to 4 of the ring atoms are a heteroatom each N, O or S. For example, heteroaryl includes pyridyl, indolyl, indazolyl, quinoxalinyl, quinolinyl, isoquinolinyl, benzothienyl, benzofuranyl, furanyl, pyrrolyl, thiazolyl, benzothiazolyl, oxazolyl, isoxazolyl, triazolyl, tetrazolyl, pyrazolyl, imidazolyl, thienyl, or any other radicals substituted, especially mono- or di-substituted, by e.g. alkyl, nitro or halogen. Pyridyl represents 2-, 3- or 4-pyridyl, advantageously 2- or 3-pyridyl. Thienyl represents 2- or 3-thienyl. Quinolinyl represents preferably 2-, 3- or 4-quinolinyl. Isoquinolinyl represents preferably 1-, 3- or 4-isoquinolinyl. Benzopyranyl, benzothiopyranyl represents preferably 3-benzopyranyl or 3-benzothiopyranyl, respectively. Thiazolyl represents preferably 2- or 4-thiazolyl, and most preferred, 4-thiazolyl. Triazolyl is preferably 1-, 2- or 5-(1,2,4-triazolyl). Tetrazolyl is preferably 5-tetrazolyl.

[0199] Preferably, heteroaryl is pyridyl, indolyl, quinolinyl, pyrrolyl, thiazolyl, isoxazolyl, triazolyl, tetrazolyl, pyrazolyl, imidazolyl, thienyl, furanyl, benzothiazolyl, benzofuranyl, isoquinolinyl, benzothienyl, oxazolyl, indazolyl, or any of the radicals substituted, especially mono- or di-substituted.

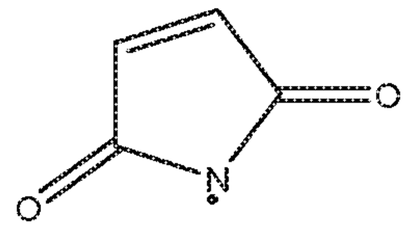
[0200] The term "heteroalkyl" refers to an alkyl group having from 1 to 3 heteroatoms such as N, O and S. Additional heteroatoms can also be useful, including, but not limited to, B, Al, Si and P. The heteroatoms can also be oxidized, such as, but not limited to, -S(O)- and -$S(O)_2$-. For example, heteroalkyl can include ethers, thioethers, alkyl-amines and alkyl-thiols.

[0201] The term "heteroalkylene" refers to a heteroalkyl group, as defined above, linking at least two other groups. The two moieties linked to the heteroalkylene can be linked to the same atom or different atoms of the heteroalkylene.

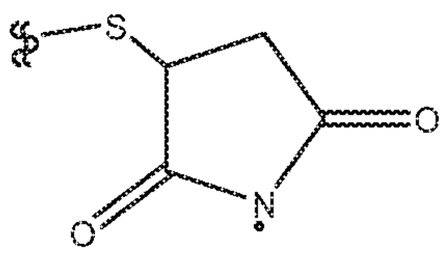
[0202] As used herein, "electrophile" refers to an ion or atom or collection of atoms, which may be ionic, having an electrophilic center, *i.e.*, a center that is electron seeking, capable of reacting with a nucleophile. An electrophile (or electrophilic reagent) is a reagent that forms a bond to its reaction partner (the nucleophile) by accepting both bonding electrons from that reaction partner.

[0203] As used herein, "nucleophile" refers to an ion or atom or collection of atoms, which may be ionic, having a nucleophilic center, *i.e.*, a center that is seeking an electrophilic center or capable of reacting with an electrophile. A nucleophile (or nucleophilic reagent) is a reagent that forms a bond to its reaction partner (the electrophile) by donating both bonding electrons. A "nucleophilic group" refers to a nucleophile after it has reacted with a reactive group. Non limiting examples include amino, hydroxyl, alkoxy, haloalkoxy and the like.

[0204] As used herein, "maleimido" refers to a pyrrole-2,5-dione-1-yl group having the structure:



[0205] which upon reaction with a sulfhydryl (*e.g.*, a thio alkyl) forms an -S-maleimido group having the structure



[0206] where "•" indicates the point of attachment for the maleimido group and "§"indicates the point of attachment of the sulfur atom the thiol to the remainder of the original sulfhydryl bearing group.

[0207] For the purpose of this disclosure, "naturally occurring amino acids" found in proteins and polypeptides are L-alanine, L-arginine, L-asparagine, L-aspartic acid, L-cysteine, L-glutamine, L-glutamic acid, L-glycine, L-histidine, L-isoleucine, L-leucine, L-lysine, L-methionine, L-phenylalanine, L-proline, L-serine, L-threonine, L-tryptophan, L-tyrosine, and

or L-valine. "Non-naturally occurring amino acids" found in proteins are any amino acid other than those recited as naturally occurring amino acids. Non-naturally occurring amino acids include, without limitation, the D isomers of the naturally occurring amino acids, and mixtures of D and L isomers of the naturally occurring amino acids. Other amino acids, such as 4-hydroxyproline, desmosine, isodesmosine, 5-hydroxylysine, epsilon-N-methyllysine, 3-methylhistidine, although found in naturally occurring proteins, are considered to be non-naturally occurring amino acids found in proteins for the purpose of this disclosure as they are generally introduced by means other than ribosomal translation of mRNA.

[0208] As used herein, "linear" in reference to the geometry, architecture or overall structure of a polymer, refers to polymer having a single polymer arm.

[0209] As used herein, "branched," in reference to the geometry, architecture or overall structure of a polymer, refers to a polymer having 2 or more polymer "arms" extending from a core structure contained within an initiator. The initiator may be employed in an atom transfer radical polymerization (ATRP) reaction. A branched polymer may possess 2 polymer chains (arms), 3 polymer arms, 4 polymer arms, 5 polymer arms, 6 polymer arms, 7 polymer arms, 8 polymer arms, 9 polymer arms or more. Each polymer arm extends from a polymer initiation site. Each polymer initiation site is capable of being a site for the growth of a polymer chain by the addition of monomers. For example and not by way of limitation, using ATRP, the site of polymer initiation on an initiator is typically an organic halide undergoing a reversible redox process catalyzed by a transition metal compound such as cuprous halide. Preferably, the halide is a bromine.

[0210] As used herein, "pharmaceutically acceptable excipient" refer to an excipient that can be included in the compositions of the invention and that causes no significant adverse toxicological effect on the patient and is approved or approvable by the FDA for therapeutic use, particularly in humans. Non-limiting examples of pharmaceutically acceptable excipients include water, NaCl, normal saline solutions, lactated Ringer's, normal sucrose, normal glucose and the like.

[0211] As used herein, "OG1786" is a 9-arm initiator used for polymer synthesis with the structure shown in FIG. 2D, which depicts that salt form of OG1786 with trifluororacetic acid. OG1786 may be used in accordance with the present invention as other salts or as the free base.

[0212] As used herein, "OG1801" is an approximately (+/- 15%) 750 kDa polymer (either by Mn or Mp) made using OG1786 as an initiator for ATRP synthesis using the monomer HEMA-PC. The structure of OG1801 is shown in FIG. 2J.

[0213] As used herein, "OG1802" is OG1801 with a maleimide functionality added, and it has the structure shown in FIG. 2K, wherein each of n_1, n_2, n_3, n_4, n_5, n_6, n_7, n_8 and n_9 is an integer (positive) (from 0 up to about 3000) such that the total molecular weight of the polymer is (Mw) 750,000 ± 15% Daltons.

[0214] By "directly inhibit", "direct inhibitor", or other similar phrase in regard to the proteolytic activity of CFD, it is meant that the antibody reduces the enzymatic activity of CFD itself, rather than reducing a downstream activity of CFD or by some other mechanism of action. Thus, for example, an antibody that reduces CFD proteolytic activity *indirectly*, by altering an activity or function of CFD that occurs as a result of (e.g., downstream of) the proteolytic activity, would not "directly inhibit" proteolytic activity. Similarly, an antibody that binds to CFD and does not reduce the proteolytic activity of CFD, would not "directly inhibit" the proteolytic activity, even if it also blocked other aspects (for example, preventing a substrate from accessing the enzymatic binding location of CFD or from leaving the enzymatic location of CFD. A direct inhibitor of proteolytic activity of CFD will decrease the enzymatic activity of CFD. While not expressly stated, all disclosure in the present specification that is directed to inhibiting proteolytic activity of CFD, contemplates both the direct inhibition of CFD and the indirect inhibition of CFD, unless stated otherwise (e.g., through data or a statement). Thus, each disclosure provides support for both forms of inhibition, unless expressly stated otherwise (this does not apply for the claims.) The term "directly inhibits" proteolytic processing excludes the mechanism of action by which lampalizumab functions, as lampalizumab allows CFD to maintain proteolytic processing, even while bound to CFD. While lampalizumab may "block" some activity of CFD by preventing the binding of CFD to its substrate, lampalizumab does not appear to actually reduce or prevent CFD enzymatic activity itself. In some embodiments, this can be assayed for by using a small peptide substrate, for example, N-carbobenzyloxy-Lys-ThioBenzyl ester. Lampalizumab will not block CFD processing of N-carbobenzyloxy-Lys-ThioBenzyl ester, while various embodiments provided herein can reduce CFD processing of N-carbobenzyloxy-Lys-ThioBenzyl ester, thereby serving as direct inhibitors of proteolytic processing by CFD.

[0215] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. In case of conflict, the present specification, including definitions, will control. Throughout this specification and claims, the word "comprise," or variations such as "comprises" or "comprising" will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers. Unless otherwise required by context, singular terms shall include pluralities and plural terms shall include the singular. Any example(s) following the term "e.g." or "for example" is not meant to be exhaustive or limiting.

[0216] The phrase "a" or "an" entity refers to one or more of that entity; for example, a compound refers to one or more compounds or at least one compound. As such, the terms "a" (or "an"), "one or more", and "at least one" can be used interchangeably herein.

[0217] As used herein, "about" means variation one might see in measurements taken among different instruments, samples, and sample preparations.

[0218] Multi-angle light scattering (**MALS**) is a technique of analyzing macromolecules where the laser light impinges on the molecule, the oscillating electric field of the light induces an oscillating dipole within it. This oscillating dipole will re-radiate light and can be measured using a MALS detector such as Wyatt miniDawn TREOS. The intensity of the radiated light depends on the magnitude of the dipole induced in the macromolecule which in turn is proportional to the polarizability of the macromolecule, the larger the induced dipole, and hence, the greater the intensity of the scattered light. Therefore, in order to analyze the scattering from a solution of such macromolecules, one should know their polarizability relative to the surrounding medium (e.g., the solvent). This may be determined from a measurement of the change, Δn, of the solution's refractive index n with the molecular concentration change, Δc, by measuring the dn/dc ($=\Delta n/\Delta c$) value using a Wyatt Optilab T-rEX differential refractometer. Two molar weight parameters that MALS determination employ are number average molecular weight (Mn) and weight average molecular weight (Mw) where the polydispersity index (PDI) equals Mw divided by Mn. SEC also allows another average molecular weight determination of the peak molecular weight Mp which is defined as the molecular weight of the highest peak at the SEC.

[0219] The PDI is used as a measure of the broadness of a molecular weight distribution of a polymer and bioconjugate which is derived from conjugation of a discrete protein to a polydisperse biopolymer (e.g., OG1802). For a protein sample, its polydispersity is close to 1.0 due to the fact that it is a product of translation where every protein molecule in a solution is expected to have almost the same length and molar mass. In contrast, due to the polydisperse nature of the biopolymer where the various length of polymer chains are synthesized during the polymerization process, it is very important to determine the PDI of the sample as one of its quality attribute for narrow distribution of molecular weight.

[0220] Size exclusion chromatography (**SEC**) is a chromatography technique in which molecules in solution are separated by their size. Typically an aqueous solution is applied to transport the sample through the column which is packed with resins of various pore sizes. The resin is expected to be inert to the analyte when passing through the column and the analytes separate from each other based on their unique size and the pore size characteristics of the selected column.

[0221] Coupling the **SEC** with **MALS** or **SEC/MALS** provides accurate distribution of molar mass and size (root mean square radius) as opposed to relying on a set of SEC calibration standards. This type of arrangement has many advantages over traditional column calibration methods. Since the light scattering and concentration are measured for each eluting fraction, the molar mass and size can be determined independently of the elution position. This is particularly relevant for species with non-globular shaped macromolecules such as the biopolymers (OG1802) or bioconjugates; such species typically do not elute in a manner that might be described by a set of column calibration standards.

[0222] In some embodiments, a SEC/MALS analysis includes a Waters HPLC system with Alliance 2695 solvent delivery module and Waters 2996 Photodiole Array Detector equipped with a Shodex SEC-HPLC column (7.8x300mm). This is connected online with a Wyatt miniDawn TREOS and Wyatt Optilab T-rEX differential refractometer. The Empower software from Waters can be used to control the Waters HPLC system and the ASTRA V 6.1.7.16 software from Wyatt can be used to acquire the MALS data from the Wyatt miniDawn TREOS, dn/dc data from the T-rEX detector and the mass recovery data using the A280 absorbance signal from the Waters 2996 Photodiole Array detector. SEC can be carried out at 1ml/min in 1xPBS pH 7.4, upon sample injection, the MALS and RI signals can be analyzed by

the ASTRA software for determination of absolute molar mass (Mp, **Mw, Mn**) and polydisperse index (**PDI**). In addition, the calculation also involves the input dn/dc values for polymer and protein as 0.142 and 0.183, respectively. For OG1970 bioconjugates dn/dc value, the dn/dc is calculated based on the weighted MW of the polymer and the protein to be about 0.148 using the formula below:

Conjugate **dn/dc** = 0.142 x [MW*polymer* /(MW*polymer*+MW*protein*)]+ 0.183 x [MW*protein* /(MW*polymer*+MW*protein*)]

[0223] Where MW*polyme.r* for OG1802 measured by SEC-MALS is about 800 kDa and the MW*protein* for OG1965 measured by SEC-MALS is about 145 kDa, the expected total molecular weight of OG1970 bioconjugate measured by SEC-MALS is about 1000 kDa

[0224] Exemplary methods and materials are described herein, although methods and materials similar or equivalent to those described herein can also be used in the practice or testing of the present invention. The materials, methods, and examples are illustrative only and not intended to be limiting.

CFD ANTAGONIST ANTIBODIES AND CONJUGATES THEREOF

[0225] Provided herein are anti-CFD antibodies that block, suppress or reduce (including significantly reduces) CFD biological activity, including downstream events mediated by CFD. In some embodiments, a CFD antagonist antibody can exhibit any one or more of the following characteristics: (a) bind to CFD and block downstream signaling events; (b) block C3bB (a complex of factor B, magnesium ions, and complement component 3b) binding to CFD; (c) directly inhibit proteolytic activity of CFD; and (d) block the alternative complement cascade. In some embodiments, the CFD antagonist antibody will have one or more of the CDR sequences provided herein.

[0226] In some embodiments, the isolated antagonist antibody specifically binds to complement factor D (CFD). In some embodiments, the isolated antagonist antibody specifically inhibits a proteolytic activity of CFD. In some embodiments, the isolated antagonist antibody specifically inhibits CFD binding to C3bB complex. In some embodiments, the isolated antagonist antibody specifically binds to complement factor D (CFD) and specifically inhibits a

proteolytic activity of CFD. In some embodiments, the isolated antagonist antibody directly inhibits the proteolytic activity of CFD.

[0227] In some embodiments, the isolated antagonist antibody specifically binds to complement factor D (CFD) and specifically inhibits CFD binding to C3bB complex. In some embodiments, the isolated antagonist antibody specifically inhibits a proteolytic activity of CFD and specifically inhibits CFD binding to C3bB complex. In some embodiments, the isolated antagonist antibody specifically binds to complement factor D (CFD), specifically inhibits a proteolytic activity of CFD and specifically inhibits CFD binding to C3bB complex.

[0228] In some embodiments, the isolated antagonist antibody specifically binds to complement factor D (CFD) but does not bind a human CFD mutant comprising mutations R157A and R207A. In some embodiments, the isolated antagonist antibody binds an epitope on human CFD, wherein the epitope excludes positions R157 and R207. In some embodiments, the isolated antagonist antibody does not bind a human CFD mutant comprising the mutations R157A and R207A. In some embodiments, the isolated antagonist antibody binds a human CFD mutant comprising mutations R157A and R207A.

[0229] In some embodiments, the antibody preferably reacts with CFD in a manner that inhibits CFD signaling function. In some embodiments, the CFD antagonist antibody specifically binds primate CFD.

[0230] In some embodiments, the isolated antagonist anti-CFD antibody blocks the alternative complement cascade. In some embodiments, the isolated antagonist anti-CFD antibody blocks C3bB binding to CFD. In some embodiments, the isolated antagonist anti-CFD antibody blocks the alternative complement cascade by blocking C3bB binding to CFD.

[0231] The antibodies useful in the present invention can encompass monoclonal antibodies, polyclonal antibodies, antibody fragments (e.g., Fab, Fab', $F(ab')_2$, Fv, Fc, etc.), chimeric antibodies, bispecific antibodies, heteroconjugate antibodies, single chain (ScFv), mutants thereof, fusion proteins comprising an antibody portion (e.g., a domain antibody), humanized antibodies, and any other modified configuration of the immunoglobulin molecule that comprises an antigen recognition site of the required specificity, including glycosylation variants of antibodies, amino acid sequence variants of antibodies, and covalently modified antibodies. The antibodies may be murine, rat, human, or any other origin (including chimeric or

humanized antibodies). In some embodiments, the CFD antagonist antibody is a monoclonal antibody. In some embodiments, the antibody is a human or humanized antibody.

[0232] In some embodiments, the antibody comprises a heavy chain amino acid variable region that comprises SEQ ID NO: 520 and a light chain amino acid variable region that comprises SEQ ID NO. 184. In some embodiments, an isolated antagonist antibody comprises a heavy chain variable region (VH) comprising a VH complementarity determining region one (CDR1), VH CDR2, and VH CDR3 of the VH having an amino acid sequence of SEQ ID NO: 520, and a light chain variable region (VL) comprising a VL CDR1, VL CDR2, and VL CDR3 of the VL having an amino acid sequence of SEQ ID NO: 525.

[0233] In some embodiments, an isolated antagonist anti-CFD antibody is provided. The antibody comprises a heavy chain constant domain comprising one or more mutations to reduce effector function. In some embodiments, the one or more mutations reduce effector functions of the antibody related to the complement cascade, for example, a reduced activation of the complement cascade. In some embodiments, the reduction in effector function is at least about 50%.

[0234] In some embodiments, an isolated antagonist antibody that specifically binds to CFD comprising a heavy chain variable region (VH) and a light chain variable region (VL), wherein the antibody comprises the mutations L234A, L235A, and G237A (based on EU numbering) is provided. In some embodiments, the isolated antagonist antibody comprises the mutations L234A, L235A, and G237A. In some embodiments, the isolated antagonist antibody with mutations has minimized binding to FC gamma receptors or C1q. In some embodiments, the isolated antagonist antibody with mutations L234A, L235A, and G237A has minimized binding to FC gamma receptors or C1q. In some embodiments, an isolated antagonist anti-CFD antibody is provided, wherein the mutation(s) is located at one or more of the following amino acid positions (EU numbering): E233, L234, L235, G236, G237, A327, A330, and P331. In some embodiments, an isolated antagonist anti-CFD antibody is provided, wherein the mutation (s) is selected from the group consisting of E233P, L234V, L234A, L235A, G237A, A327G, A330S, and P331S.

[0235] In some embodiments, an isolated antagonist anti-CFD antibody is provided. The heavy chain constant domain further comprises a cysteine residue introduced by recombinant DNA technology. In some embodiments, the cysteine residue is selected from the

group consisting of Q347C and L443C (EU numbering). In some embodiments, the cysteine residue is L443C (EU numbering).

[0236] In some embodiments, the isolated antagonist antibody specifically binds to complement factor D (CFD). The antibody is configured to provide a reduced complement reaction. The antibody specifically binds to complement factor D (CFD), and the antibody at least inhibits a proteolytic activity of CFD or inhibits CFD binding to C3bB complex. In some embodiments, the antibody comprises all three of the following mutations (EU numbering) L234A, L235A, and G237A, and the antibody comprises L443C (EU numbering). In some embodiments, the antibody is a human IgG1, and a heavy chain constant domain of the antibody comprises one or more mutations that reduce an immune-mediated effector function.

[0237] In some embodiments, an isolated antagonist antibody is provided that binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences in SEQ ID NO: 61 and SEQ ID NO: 62. In some embodiments, an isolated antagonist antibody is provided that binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences in SEQ ID NO: 45 and SEQ ID NO: 46.

[0238] In some embodiments, an isolated antagonist antibody is provided that binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences in SEQ ID NO: 520 and SEQ ID NO: 525. In some embodiments, an isolated antagonist antibody is provided that binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences in any one or more of Tables: 1.1, 0.1A, 0.1B, 0.1D, and/or 11.3. In some embodiments, the isolated antibody is one that comprises the amino acid sequences of the heavy and/or light chain sequences within deposited material PTA-123800 and/or PTA-123801. In some embodiments, the antibody is one that competes for binding with an antibody that comprises the heavy and/or light chain sequences within PTA-123800 (light chain) and/or PTA-123801 (heavy chain). In some embodiments, the antibody is one that is encoded by a nucleic acid sequence that hybridizes to the plasmid sequences provided in PTA-123800 (light chain) and/or PTA-123801 (heavy chain) under moderate to stringent conditions.

[0239] In some embodiments, an isolated antagonist antibody that binds to CFD is provided. In some embodiments, the isolated antagonist antibody that binds to CFD comprises a

heavy chain comprising the amino acid sequence shown in SEQ ID NO: 183, with or without the C-terminal lysine and a light chain comprising the amino acid sequence shown in SEQ ID NO: 184.

[0240] In some embodiments, an isolated antagonist antibody that binds to CFD is provided. The antibody comprises a VH comprising the amino acid sequence shown in SEQ ID NO: 520, or a sequence that is at least 90% identical thereto, having amino acid substitutions in residues that are not within a CDR. In some embodiments, the antibody comprises one or more of: HCDR1: DYY (SEQ ID NO: 541), HCDR2: INPITGDT (SEQ ID NO: 542), HCDR3: EGPSFAY (SEQ ID NO: 543); LCDR1: QTIVHSNGDT (SEQ ID NO: 544), LCDR2: KVS (SEQ ID NO: 545), LCDR3: FQGSHVPVT (SEQ ID NO: 546), for example, 1, 2, 3, 4, 5, or all 6 CDRs. In some embodiments, the antibody includes HCDR3.

[0241] In some embodiments, an antibody that binds to CFD is provided, wherein the antibody comprises a CDRH1 that is the CDRH1 in SEQ ID NO: 520, a CDRH2 that is the CDRH2 in SEQ ID NO: 520, a CDRH3 that is the CDRH3 in SEQ ID NO: 520, a CDRL1 that is the CDRL1 in SEQ ID NO: 525, a CDRL2 that is the CDRL2 in SEQ ID NO: 525, a CDRL3 that is the CDRL3 in SEQ ID NO: 525, at least one of the following mutations: L234A, L235A, and G237A based on EU numbering, or L233A, L234 A, and G236A in SEQ ID NO 183, and at least one of the following mutations:Q347C or L443C based on EU numbering, or Q346C or L442C in SEQ ID NO 183.

[0242] In some embodiments, an isolated antagonist anti-CFD antibody is provided. The heavy chain variable region of the antibody comprises three complementarity determining regions (CDRs) comprising the amino acid sequences shown in SEQ ID NO: 541, 542, and 543. In some embodiments, an isolated antagonist anti-CFD antibody is provided, wherein the light chain variable region of the antibody comprises three complementarity determining regions (CDRs) comprising the amino acid sequences shown in SEQ ID NO: 544, 545, and 546.

[0243] In some embodiments, an isolated antagonist anti-CFD antibody comprises a heavy chain variable region (VH) that comprises three CDRs comprising the amino acid sequences shown in SEQ ID NO: 541, SEQ ID NO: 542, and SEQ ID NO: 543, and the light chain variable region (VL) of the antibody comprises three CDRs comprising the amino acid sequences shown in SEQ ID NO: 544, SEQ ID NO: 545, and SEQ ID NO: 546.

[0244] In some embodiments, an isolated antagonist anti-CFD antibody is provided. The VH comprises the amino acid sequences shown in SEQ ID NO: 520 and the light chain variable region of the antibody comprises three CDRs comprising the amino acid sequences shown in SEQ ID NO: 544, SEQ ID NO: 545, and SEQ ID NO: 546.

[0245] In some embodiments, an isolated antagonist anti-CFD antibody is provided, wherein the antibody comprises a VL comprising the amino acid sequence shown in SEQ ID NO: 525, or a variant thereof with one amino acid substitution in amino acids that are not within a CDR. In some embodiments, an isolated antagonist anti-CFD antibody is provided, wherein the antibody comprises a VH comprising the amino acid sequence shown in SEQ ID NO: 520, or a variant thereof with several amino acid substitutions in amino acids that are not within a CDR.

[0246] In some embodiments, an isolated antagonist antibody is provided, wherein the antibody comprises a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 183, with a C-terminal lysine, and a light chain comprising the amino acid sequence shown in SEQ ID NO: 184. In some embodiments, an isolated antagonist antibody is provided, wherein the antibody comprises a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 183, without a C-terminal lysine, and a light chain comprising the amino acid sequence shown in SEQ ID NO: 184.

[0247] The CFD antagonist antibodies may be made by any method known in the art. General techniques for production of human and mouse antibodies are known in the art and/or are described herein.

[0248] CFD antagonist antibodies can be identified or characterized using methods known in the art, whereby reduction, amelioration, or neutralization of CFD biological activity is detected and/or measured. In some embodiments, an CFD antagonist antibody is identified by incubating a candidate agent with CFD and monitoring binding and/or attendant reduction or neutralization of a biological activity of CFD. The binding assay may be performed with, e.g., purified CFD polypeptide(s), or with cells naturally expressing (e.g., various strains), or transfected to express, CFD polypeptide(s). In one embodiment, the binding assay is a competitive binding assay, where the ability of a candidate antibody to compete with a known CFD antagonist antibody for CFD binding is evaluated. The assay may be performed in various formats, including the ELISA format. In some embodiments, an CFD antagonist antibody is identified by incubating a candidate antibody with CFD and monitoring binding.

[0249] Following initial identification, the activity of a candidate CFD antagonist antibody can be further confirmed and refined by bioassays, known to test the targeted biological activities. In some embodiments, an in vitro cell assay is used to further characterize a candidate CFD antagonist antibody. For example, a direct functional assay based on human alternative complement-mediated rabbit red blood cell lysis assay (hemolysis assay) can be used to characterize a candidate anti-CFD antibody. In this assay, human serum complement components are activated, triggering the alternative complement cascade and resulting in lysis of rabbit blood cells. Anti-CFD antibodies that block the enzyme active site may block the alternative complement cascade, thus preventing lysis of the red blood cells. Greater than 50% inhibition of red blood cell lysis is the standard measure for successful antibody-mediated blockade of the alternative complement cascade.

[0250] A candidate anti-CFD antibody can be evaluated for its ability to affect the proteolytic activity of human CFD for the synthetic substrate Z-L-Lys-SBzl hydrochloride. Alternatively, bioassays can be used to screen candidates directly.

[0251] The CFD antagonist antibodies of the invention exhibit one or more of the following characteristics: (a) bind to CFD and block downstream signaling events; (b) block C3bB (a complex of factor B, magnesium ions, and complement component 3b) binding to CFD; (c) block C3bB cleavage by CFD; (d) block the alternative complement cascade; and e) directly inhibit CFD proteolytic activity. In some embodiments, the CFD antagonist antibodies have two or more of these features. In some embodiments, the CFD antagonist antibodies have three or more of these features. In some embodiments, the CFD antagonist antibodies have four or more of these features. In some embodiments, the antibodies have all five characteristics. In some embodiments, the CFD antagonist antibodies of the invention can inhibit the ability of human serum to lyse rabbit red blood cells in a hemolytic assay. In preferred embodiments, CFD antagonist antibodies of the invention can inhibit the proteolytic activity of CFD. In some embodiments, CFD antagonist antibodies of the invention can directly inhibit the proteolytic activity of CFD. In some embodiments, CFD antagonist antibodies of the invention can increase the proteolytic activity of CFD. In some embodiments, CFD antagonist antibodies are provided which have little to no direct effect on the proteolytic activity of CFD.

[0252] CFD antagonist antibodies may be characterized using methods well known in the art. For example, one method is to identify the epitope to which it binds, or "epitope

mapping." There are many methods known in the art for mapping and characterizing the location of epitopes on proteins, including solving the crystal structure of an antibody-antigen complex, competition assays, gene fragment expression assays, and synthetic peptide-based assays, as described, for example, in Chapter 11 of Harlow and Lane, Using Antibodies, a Laboratory Manual, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 1999. In an additional example, epitope mapping can be used to determine the sequence to which an CFD antagonist antibody binds. CFD antagonist antibody Epitope mapping is commercially available from various sources, for example, Pepscan Systems (Edelhertweg 15, 8219 PH Lelystad, The Netherlands). The epitope can be a linear epitope, i.e., contained in a single stretch of amino acids, or a conformational epitope formed by a three-dimensional interaction of amino acids that may not necessarily be contained in a single stretch. Peptides of varying lengths (e.g., at least 4-6 amino acids long) can be isolated or synthesized (e.g., recombinantly) and used for binding assays with an CFD antagonist antibody. In another example, the epitope to which the CFD antagonist antibody binds can be determined in a systematic screening by using overlapping peptides derived from the CFD sequence and determining binding by the CFD antagonist antibody. According to the gene fragment expression assays, the open reading frame encoding CFD is fragmented either randomly or by specific genetic constructions and the reactivity of the expressed fragments of CFD with the antibody to be tested is determined. The gene fragments may, for example, be produced by PCR and then transcribed and translated into protein in vitro, in the presence of radioactive amino acids. The binding of the antibody to the radioactively labeled CFD fragments is then determined by immunoprecipitation and gel electrophoresis. Certain epitopes can also be identified by using large libraries of random peptide sequences displayed on the surface of phage particles (phage libraries) or yeast (yeast display). Alternatively, a defined library of overlapping peptide fragments can be tested for binding to the test antibody in simple binding assays. In an additional example, mutagenesis of an antigen, domain swapping experiments and alanine scanning mutagenesis can be performed to identify residues required, sufficient, and/or necessary for epitope binding. For example, alanine scanning mutagenesis experiments can be performed using a mutant CFD in which various residues of the CFD polypeptide have been replaced with alanine. By assessing binding of the antibody to the mutant CFD, the importance of the particular CFD residues to antibody binding can be assessed.

[0253] In some embodiments, the antibody binds to one or more of residues R157 and R207 on CFD, and does not increase the activity of CFD in the proteolytic processing of a small peptide substrate N-carbobenzyloxy-Lys-ThioBenzyl.

[0254] In some embodiments, the antibody binds to CFD with an interaction involving one or more of R157, K209, D150, T153, R156, R157, and D161 (of SEQ ID NO: 1) at 3 angstroms or less. In some embodiments, the antibody binds to CFD with an interaction involving one or more of R157, T158, H159, D161, R207, K208, K209, D116, P119, D150, R151, A152, T153, N155, R156, G162, I164, or E166 (of SEQ ID NO: 1) at 5 angstroms or less. In some embodiments, the antibody binds to CFD with an interaction involving one or more of R157, T158, H159, D161, N206, R207, K208, K209, D116, P119, D150, R151, A152, T153, N155, R156, R157, T158, or D161, G162, A163, I164, T165, E166 (of SEQ ID NO: 1) at 6 angstroms or less.

[0255] In some embodiments, the antibody binds to CFD with an interaction involving one or more of 157, 209, 150, 153, 156, 157, and 161 (of SEQ ID NO: 1) at 3 angstroms or less. In some embodiments, the antibody binds to CFD with an interaction involving one or more of 157, 158, 159, 161, 207, 208, 209; 116, 119, 150, 151, 152, 153, 155, 156, 162, 164, or 166 (of SEQ ID NO: 1) at 5 angstroms or less. In some embodiments, the antibody binds to CFD with an interaction involving one or more of 157-159, 161; 206-209; 116, 119, 150-153, 155-158; or 161-166 (of SEQ ID NO: 1) at 6 angstroms or less.

[0256] In some embodiments, the antibody binds to CFD at R157, K209, D150, T153, R156, R157, and D161 (of SEQ ID NO: 1). In some embodiments, the antibody binds to CFD at one or more of R157, T158, H159, D161, R207, K208, K209, D116, P119, D150, R151, A152, T153, N155, R156, G162, I164, or E166 (of SEQ ID NO: 1). In some embodiments, the antibody binds to CFD at one or more of R157, T158, H159, D161, N206, R207, K208, K209, D116, P119, D150, R151, A152, T153, N155, R156, R157, T158, or D161, G162, A163, I164, T165, E166 (of SEQ ID NO: 1).

[0257] In some embodiments, the antibody binds to CFD and is no more than 3 angstroms from one or more of 157, 209, 150, 153, 156, 157, and 161 (of SEQ ID NO: 1). In some embodiments, the antibody is no more than this distance from 2, 3, 4, 5, 6, or 7 of these residues. In some embodiments, the antibody binds to CFD and is no more than 5 angstroms from one or more of 157, 158, 159, 161, 207, 208, 209, 116, 119, 150, 151, 152, 153, 155, 156,

162, 164, or 166 (of SEQ ID NO: 1). In some embodiments, the antibody is no more than this distance from 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, or 18 of these residues. In some embodiments, the antibody binds to CFD and is no more than 6 angstroms from one or more of 157-159, 161; 206-209; 116, 119, 150-153, 155-158; or 161-166 (of SEQ ID NO: 1). In some embodiments, the antibody is no more than this distance from 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, or 24 of these residues.

[0258] In some embodiments, the antibody interacts with CFD at 2, 3, 4, 5, 6 or 7 of 157, 209, 150, 153, 156, 157, and 161 (of SEQ ID NO: 1) at 3 angstroms or less. In some embodiments, the antibody interacts with CFD at 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, or 18 of 157, 158, 159, 161, 207, 208, 209; 116, 119, 150, 151, 152, 153, 155, 156, 162, 164, or 166 (of SEQ ID NO: 1) at 5 angstroms or less.

[0259] In some embodiments, the antibody interacts with CFD at one or more of 157, 158, 159, 161, 206, 207, 208, 209, 116, 119, 150, 151, 152, 153, 155, 156, 162, 163, 164, 165, or 166 of SEQ ID NO: 1. In some embodiments, the antibody interacts with CFD 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 or more of 157, 158, 159, 161, 206, 207, 208, 209, 116, 119, 150, 151, 152, 153, 155, 156, 162, 163, 164, 165, or 166 of SEQ ID NO: 1.

[0260] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. When bound, the antibody is within 3 angstroms of residue 209 of SEQ ID NO: 1 of CFD.

[0261] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. When bound, the antibody is within 3A of residue 156 of SEQ ID NO: 1 of CFD.

[0262] In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody binds to one or more of residues 156 or 209 of SEQ ID NO: 1 of CFD. In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody binds to both of residues 156 and 209 of SEQ ID NO: 1 of CFD. In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody, when bound to CFD, is not within 6 angstroms of at least one of 117, 118, and 156. In some embodiments, an isolated antagonist antibody that specifically binds to complement factor D (CFD) is provided. The antibody binds to CFD as described in any one or more of Tables: 1.1,

0.1A, 0.1B, 0.1D, and/or 11.3 (e.g., binds in the same manner as the designated antibodies in the noted tables).

[0263] In some embodiments, the antibody has the same or similar paratope as the antibody in the crystal structure provided in Table CTKDK001A.

Table CTKDK001A

HEADER ----

COMPND ---

REMARK 3

REMARK 3 REFINEMENT.

REMARK 3 PROGRAM : REFMAC 5.8.0158

REMARK 3

REMARK 3 REFINEMENT TARGET : MAXIMUM LIKELIHOOD

REMARK 3

REMARK 3 DATA USED IN REFINEMENT.

REMARK 3 RESOLUTION RANGE HIGH (ANGSTROMS) : 2.40

REMARK 3 RESOLUTION RANGE LOW (ANGSTROMS) : 130.57

REMARK 3 DATA CUTOFF (SIGMA(F)) : NONE

REMARK 3 COMPLETENESS FOR RANGE (%) : 99.10

REMARK 3 NUMBER OF REFLECTIONS : 65782

REMARK 3

REMARK 3 FIT TO DATA USED IN REFINEMENT.

REMARK 3 CROSS-VALIDATION METHOD : THROUGHOUT

REMARK 3 FREE R VALUE TEST SET SELECTION : RANDOM

REMARK 3 R VALUE (WORKING + TEST SET) : 0.22585

REMARK 3 R VALUE (WORKING SET) : 0.22289

REMARK 3 FREE R VALUE : 0.28169

REMARK 3 FREE R VALUE TEST SET SIZE (%) : 5.0

REMARK 3 FREE R VALUE TEST SET COUNT : 3452

REMARK 3

REMARK 3 FIT IN THE HIGHEST RESOLUTION BIN.

REMARK 3 TOTAL NUMBER OF BINS USED : 20

REMARK 3 BIN RESOLUTION RANGE HIGH : 2.401

REMARK 3 BIN RESOLUTION RANGE LOW : 2.463

REMARK 3 REFLECTION IN BIN (WORKING SET) : 4342

REMARK 3 BIN COMPLETENESS (WORKING+TEST) (%) : 89.22

REMARK 3 BIN R VALUE (WORKING SET) : 0.335

REMARK 3 BIN FREE R VALUE SET COUNT : 201

REMARK 3 BIN FREE R VALUE : 0.387

REMARK 3

REMARK 3 NUMBER OF NON-HYDROGEN ATOMS USED IN REFINEMENT.

REMARK 3 ALL ATOMS : 10147

REMARK 3

REMARK 3 B VALUES.

REMARK 3 FROM WILSON PLOT (A**2) : NULL

REMARK 3 MEAN B VALUE (OVERALL, A**2) : 60.902

REMARK 3 OVERALL ANISOTROPIC B VALUE.

REMARK 3 B11 (A**2) : 0.12

REMARK 3 B22 (A**2) : 0.12

REMARK 3 B33 (A**2) : -0.23

REMARK 3 B12 (A**2) : -0.00

REMARK 3 B13 (A**2) : -0.00

REMARK 3 B23 (A**2) : -0.00

REMARK 3

REMARK 3 ESTIMATED OVERALL COORDINATE ERROR.

REMARK 3 ESU BASED ON R VALUE (A): 0.347

REMARK 3 ESU BASED ON FREE R VALUE (A): 0.271

REMARK 3 ESU BASED ON MAXIMUM LIKELIHOOD (A): 0.204

REMARK 3 ESU FOR B VALUES BASED ON MAXIMUM LIKELIHOOD (A**2): 8.858

REMARK 3

REMARK 3 CORRELATION COEFFICIENTS.

REMARK 3 CORRELATION COEFFICIENT FO-FC : 0.932

REMARK 3 CORRELATION COEFFICIENT FO-FC FREE : 0.900

REMARK 3

REMARK 3 RMS DEVIATIONS FROM IDEAL VALUES COUNT RMS WEIGHT

REMARK 3 BOND LENGTHS REFINED ATOMS (A): 10253 ; 0.015 ; 0.019

REMARK 3 BOND LENGTHS OTHERS (A): 9277 ; 0.002 ; 0.020

REMARK 3 BOND ANGLES REFINED ATOMS (DEGREES): 13962 ; 1.845 ; 1.952

REMARK 3 BOND ANGLES OTHERS (DEGREES): 21577 ; 1.079 ; 3.001

REMARK 3 TORSION ANGLES, PERIOD 1 (DEGREES): 1319 ; 9.198 ; 5.027

REMARK 3 TORSION ANGLES, PERIOD 2 (DEGREES): 416 ;36.566 ;23.702

REMARK 3 TORSION ANGLES, PERIOD 3 (DEGREES): 1620 ;19.613 ;15.000

REMARK 3 TORSION ANGLES, PERIOD 4 (DEGREES): 64 ;21.147 ;15.000

REMARK 3 CHIRAL-CENTER RESTRAINTS (A**3): 1577 ; 0.115 ; 0.200

REMARK 3 GENERAL PLANES REFINED ATOMS (A): 11470 ; 0.008 ; 0.021
REMARK 3 GENERAL PLANES OTHERS (A): 2046 ; 0.002 ; 0.020
REMARK 3
REMARK 3 ISOTROPIC THERMAL FACTOR RESTRAINTS. COUNT RMS WEIGHT
REMARK 3 MAIN-CHAIN BOND REFINED ATOMS (A**2): 5280 ; 4.882 ; 6.037
REMARK 3 MAIN-CHAIN BOND OTHER ATOMS (A**2): 5279 ; 4.882 ; 6.037
REMARK 3 MAIN-CHAIN ANGLE REFINED ATOMS (A**2): 6593 ; 7.241 ; 9.035
REMARK 3 MAIN-CHAIN ANGLE OTHER ATOMS (A**2) : 6594 ; 7.240 ; 9.035
REMARK 3 SIDE-CHAIN BOND REFINED ATOMS (A**2): 4972 ; 4.883 ; 6.365
REMARK 3 SIDE-CHAIN BOND OTHER ATOMS (A**2) : 4972 ; 4.882 ; 6.365
REMARK 3 SIDE-CHAIN ANGLE OTHER ATOMS (A**2) : 7369 ; 7.261 ; 9.374
REMARK 3 LONG RANGE B REFINED ATOMS (A**2) : 10364 ;10.038 ;68.140
REMARK 3 LONG RANGE B OTHER ATOMS (A**2) : 10351 ;10.040 ;68.153
REMARK 3
REMARK 3 NCS RESTRAINTS STATISTICS
REMARK 3 NUMBER OF NCS GROUPS : NULL
REMARK 3
REMARK 3 TWIN DETAILS
REMARK 3 NUMBER OF TWIN DOMAINS : NULL
REMARK 3
REMARK 3
REMARK 3 TLS DETAILS
REMARK 3 NUMBER OF TLS GROUPS : NULL
REMARK 3
REMARK 3
REMARK 3 BULK SOLVENT MODELLING.
REMARK 3 METHOD USED : MASK
REMARK 3 PARAMETERS FOR MASK CALCULATION
REMARK 3 VDW PROBE RADIUS : 1.20
REMARK 3 ION PROBE RADIUS : 0.80
REMARK 3 SHRINKAGE RADIUS : 0.80
REMARK 3
REMARK 3 OTHER REFINEMENT REMARKS:
REMARK 3 HYDROGENS HAVE BEEN ADDED IN THE RIDING POSITIONS
REMARK 3 U VALUES : REFINED INDIVIDUALLY
REMARK 3
SSBOND 1 CYS L 139 CYS L 199

```
SSBOND   2 CYS H  144    CYS H  200
SSBOND   3 CYS A   26    CYS A   42
SSBOND   4 CYS A  123    CYS A  189
SSBOND   5 CYS A  154    CYS A  170
SSBOND   6 CYS A  179    CYS A  204
SSBOND   7 CYS M  139    CYS M  199
SSBOND   8 CYS N  143    CYS N  199
SSBOND   9 CYS O   26    CYS O   42
SSBOND  10 CYS O  123    CYS O  189
SSBOND  11 CYS O  154    CYS O  170
SSBOND  12 CYS O  179    CYS O  204
LINKR        SG ACYS L  23          SG  CYS L  93          SS
LINKR        SG BCYS L  23          SG  CYS L  93          SS
LINKR        SG  CYS H  22          SG ACYS H  96          SS
LINKR        SG  CYS H  22          SG BCYS H  96          SS
LINKR        SG ACYS M  23          SG  CYS M  93          SS
LINKR        SG BCYS M  23          SG  CYS M  93          SS
LINKR        SG  CYS N  22          SG ACYS N  96          SS
LINKR        SG  CYS N  22          SG BCYS N  96          SS
LINKR         PRO H 101             SER H 103              gap
LINKR         THR N 134             LEU N 141              gap
LINKR         TRP A  35             LEU A  37              gap
LINKR         TRP O  35             LEU O  37              gap
CISPEP   1 PHE H  150    PRO H  151          0.00
CISPEP   2 GLU H  152    PRO H  153          0.00
CISPEP   3 SER L    7    PRO L    8          0.00
CISPEP   4 VAL L   99    PRO L  100          0.00
CISPEP   5 TYR L  145    PRO L  146          0.00
CISPEP   6 SER M    7    PRO M    8          0.00
CISPEP   7 VAL M   99    PRO M  100          0.00
CISPEP   8 TYR M  145    PRO M  146          0.00
CISPEP   9 PHE N  149    PRO N  150          0.00
CISPEP  10 GLU N  151    PRO N  152          0.00
CRYST1  130.570  130.570  205.221  90.00  90.00  90.00 P 41 2 2
SCALE1      0.007659  0.000000  0.000000        0.00000
SCALE2     -0.000000  0.007659  0.000000        0.00000
SCALE3      0.000000 -0.000000  0.004873        0.00000
```

```
ATOM    1  N   ILE A   1    -114.047   8.230  17.986  1.00 74.29           N
ATOM    2  CA  ILE A   1    -113.927   8.231  19.489  1.00 69.11           C
ATOM    3  CB  ILE A   1    -114.209   9.634  20.078  1.00 65.17           C
ATOM    4  CG1 ILE A   1    -113.250  10.680  19.493  1.00 65.93           C
ATOM    5  CD1 ILE A   1    -111.793  10.480  19.839  1.00 65.83           C
ATOM    6  CG2 ILE A   1    -114.136   9.628  21.595  1.00 63.57           C
ATOM    7  C   ILE A   1    -114.912   7.231  20.121  1.00 72.89           C
ATOM    8  O   ILE A   1    -116.123   7.344  19.892  1.00 59.80           O
ATOM    9  N   LEU A   2    -114.367   6.283  20.901  1.00 75.65           N
ATOM   10  CA  LEU A   2    -115.114   5.311  21.711  1.00 77.93           C
ATOM   11  CB  LEU A   2    -114.332   3.990  21.835  1.00 79.88           C
ATOM   12  CG  LEU A   2    -114.985   2.800  22.575  1.00 81.47           C
ATOM   13  CD1 LEU A   2    -116.000   2.084  21.683  1.00 78.68           C
ATOM   14  CD2 LEU A   2    -113.941   1.810  23.094  1.00 81.97           C
ATOM   15  C   LEU A   2    -115.353   5.857  23.113  1.00 79.61           C
ATOM   16  O   LEU A   2    -114.491   6.534  23.669  1.00 86.67           O
ATOM   17  N   GLY A   3    -116.517   5.529  23.679  1.00 82.13           N
ATOM   18  CA  GLY A   3    -116.918   5.963  25.023  1.00 77.30           C
ATOM   19  C   GLY A   3    -116.966   7.470  25.268  1.00 77.17           C
ATOM   20  O   GLY A   3    -116.743   7.928  26.389  1.00 62.86           O
ATOM   21  N   GLY A   4    -117.243   8.243  24.223  1.00 78.89           N
ATOM   22  CA  GLY A   4    -117.262   9.693  24.325  1.00 82.17           C
ATOM   23  C   GLY A   4    -118.671  10.217  24.425  1.00 90.15           C
ATOM   24  O   GLY A   4    -119.626   9.451  24.602  1.00 85.08           O
ATOM   25  N   ARG A   5    -118.772  11.540  24.336  1.00 95.17           N
ATOM   26  CA  ARG A   5    -120.039  12.258  24.221  1.00101.07           C
ATOM   27  CB  ARG A   5    -120.406  12.963  25.547  1.00109.94           C
ATOM   28  CG  ARG A   5    -119.292  13.786  26.211  1.00119.85           C
ATOM   29  CD  ARG A   5    -119.755  14.582  27.436  1.00125.97           C
ATOM   30  NE  ARG A   5    -120.470  13.758  28.422  1.00137.27           N
ATOM   31  CZ  ARG A   5    -121.802  13.589  28.512  1.00140.75           C
ATOM   32  NH1 ARG A   5    -122.661  14.185  27.676  1.00136.78           N
ATOM   33  NH2 ARG A   5    -122.293  12.794  29.464  1.00136.90           N
ATOM   34  C   ARG A   5    -119.876  13.258  23.082  1.00 97.43           C
ATOM   35  O   ARG A   5    -118.759  13.471  22.599  1.00100.58           O
ATOM   36  N   GLU A   6    -120.979  13.856  22.643  1.00 89.72           N
ATOM   37  CA  GLU A   6    -120.918  14.911  21.635  1.00 83.58           C
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ATOM 38 CB GLU A 6 -122.331 15.241 21.125 1.00 85.60 C
ATOM 39 CG GLU A 6 -122.368 16.294 20.026 1.00 86.09 C
ATOM 40 CD GLU A 6 -123.736 16.434 19.382 1.00 85.71 C
ATOM 41 OE1 GLU A 6 -124.294 17.540 19.448 1.00 83.21 O
ATOM 42 OE2 GLU A 6 -124.249 15.452 18.805 1.00 87.18 O
ATOM 43 C GLU A 6 -120.210 16.154 22.210 1.00 72.67 C
ATOM 44 O GLU A 6 -120.386 16.484 23.364 1.00 67.35 O
ATOM 45 N ALA A 7 -119.381 16.808 21.404 1.00 80.16 N
ATOM 46 CA ALA A 7 -118.687 18.040 21.811 1.00 83.10 C
ATOM 47 CB ALA A 7 -117.521 18.326 20.876 1.00 85.64 C
ATOM 48 C ALA A 7 -119.623 19.242 21.825 1.00 82.46 C
ATOM 49 O ALA A 7 -120.687 19.220 21.213 1.00 88.13 O
ATOM 50 N GLU A 8 -119.204 20.293 22.518 1.00 88.17 N
ATOM 51 CA GLU A 8 -119.949 21.548 22.547 1.00 96.12 C
ATOM 52 CB GLU A 8 -119.576 22.375 23.800 1.00 99.59 C
ATOM 53 CG GLU A 8 -120.565 23.487 24.177 1.00101.58 C
ATOM 54 CD GLU A 8 -119.928 24.609 25.007 1.00103.73 C
ATOM 55 OE1 GLU A 8 -119.601 24.390 26.204 1.00 93.90 O
ATOM 56 OE2 GLU A 8 -119.758 25.722 24.454 1.00 93.02 O
ATOM 57 C GLU A 8 -119.675 22.317 21.231 1.00 97.87 C
ATOM 58 O GLU A 8 -118.515 22.678 20.929 1.00 87.63 O
ATOM 59 N ALA A 9 -120.752 22.509 20.455 1.00 95.05 N
ATOM 60 CA ALA A 9 -120.799 23.291 19.197 1.00 89.27 C
ATOM 61 CB ALA A 9 -121.616 24.567 19.409 1.00 96.99 C
ATOM 62 C ALA A 9 -119.463 23.604 18.538 1.00 85.64 C
ATOM 63 O ALA A 9 -118.980 22.820 17.722 1.00 97.29 O
ATOM 64 N HIS A 10 -118.863 24.734 18.905 1.00 79.13 N
ATOM 65 CA HIS A 10 -117.627 25.208 18.284 1.00 80.00 C
ATOM 66 CB HIS A 10 -117.929 26.425 17.402 1.00 89.88 C
ATOM 67 CG HIS A 10 -118.934 26.141 16.321 1.00 93.93 C
ATOM 68 ND1 HIS A 10 -120.293 26.128 16.554 1.00 96.63 N
ATOM 69 CE1 HIS A 10 -120.931 25.822 15.439 1.00 96.49 C
ATOM 70 NE2 HIS A 10 -120.033 25.623 14.489 1.00102.20 N
ATOM 71 CD2 HIS A 10 -118.775 25.812 15.015 1.00 96.68 C
ATOM 72 C HIS A 10 -116.609 25.523 19.376 1.00 77.53 C
ATOM 73 O HIS A 10 -115.796 26.457 19.263 1.00 66.87 O
ATOM 74 N ALA A 11 -116.650 24.699 20.428 1.00 75.66 N

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ATOM    75  CA  ALA A  11    -115.822  24.908  21.608  1.00 80.59      C
ATOM    76  CB  ALA A  11    -116.363  24.124  22.793  1.00 77.68      C
ATOM    77  C   ALA A  11    -114.357  24.541  21.355  1.00 82.46      C
ATOM    78  O   ALA A  11    -113.488  24.960  22.122  1.00 74.84      O
ATOM    79  N   ARG A  12    -114.091  23.763  20.300  1.00 81.83      N
ATOM    80  CA  ARG A  12    -112.732  23.480  19.872  1.00 79.99      C
ATOM    81  CB  ARG A  12    -112.503  21.974  19.856  1.00 77.73      C
ATOM    82  CG  ARG A  12    -112.569  21.391  21.262  1.00 75.66      C
ATOM    83  CD  ARG A  12    -112.605  19.869  21.308  1.00 71.21      C
ATOM    84  NE  ARG A  12    -112.777  19.399  22.680  1.00 70.58      N
ATOM    85  CZ  ARG A  12    -113.924  19.406  23.361  1.00 72.69      C
ATOM    86  NH1 ARG A  12    -115.055  19.859  22.811  1.00 86.98      N
ATOM    87  NH2 ARG A  12    -113.956  18.956  24.607  1.00 67.84      N
ATOM    88  C   ARG A  12    -112.483  24.149  18.516  1.00 80.26      C
ATOM    89  O   ARG A  12    -112.528  23.506  17.473  1.00 71.08      O
ATOM    90  N   PRO A  13    -112.201  25.466  18.536  1.00 87.11      N
ATOM    91  CA  PRO A  13    -111.962  26.190  17.280  1.00 84.77      C
ATOM    92  CB  PRO A  13    -111.980  27.659  17.724  1.00 84.46      C
ATOM    93  CG  PRO A  13    -111.430  27.614  19.113  1.00 86.62      C
ATOM    94  CD  PRO A  13    -112.007  26.353  19.707  1.00 87.54      C
ATOM    95  C   PRO A  13    -110.630  25.873  16.609  1.00 76.09      C
ATOM    96  O   PRO A  13    -110.365  26.428  15.564  1.00 75.76      O
ATOM    97  N   TYR A  14    -109.785  25.055  17.241  1.00 75.30      N
ATOM    98  CA  TYR A  14    -108.554  24.480  16.623  1.00 66.95      C
ATOM    99  CB  TYR A  14    -107.462  24.253  17.707  1.00 61.80      C
ATOM   100  CG  TYR A  14    -107.946  23.428  18.891  1.00 58.90      C
ATOM   101  CD1 TYR A  14    -108.110  22.060  18.771  1.00 57.76      C
ATOM   102  CE1 TYR A  14    -108.600  21.295  19.814  1.00 60.01      C
ATOM   103  CZ  TYR A  14    -108.934  21.884  21.007  1.00 61.70      C
ATOM   104  OH  TYR A  14    -109.397  21.050  22.007  1.00 64.11      O
ATOM   105  CE2 TYR A  14    -108.792  23.259  21.161  1.00 62.99      C
ATOM   106  CD2 TYR A  14    -108.310  24.022  20.099  1.00 58.54      C
ATOM   107  C   TYR A  14    -108.804  23.178  15.801  1.00 62.03      C
ATOM   108  O   TYR A  14    -107.912  22.697  15.109  1.00 69.28      O
ATOM   109  N   MET A  15    -110.022  22.644  15.839  1.00 64.51      N
ATOM   110  CA  MET A  15    -110.291  21.282  15.393  1.00 59.25      C
ATOM   111  CB  MET A  15    -111.527  20.753  16.121  1.00 61.63      C
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ATOM 112 CG MET A 15 -111.782 19.276 15.975 1.00 69.83 C
ATOM 113 SD MET A 15 -110.361 18.230 16.423 1.00 76.94 S
ATOM 114 CE MET A 15 -110.849 16.768 15.506 1.00 69.08 C
ATOM 115 C MET A 15 -110.541 21.222 13.912 1.00 61.32 C
ATOM 116 O MET A 15 -111.430 21.896 13.410 1.00 65.45 O
ATOM 117 N ALA A 16 -109.796 20.360 13.226 1.00 64.06 N
ATOM 118 CA ALA A 16 -109.841 20.267 11.774 1.00 59.66 C
ATOM 119 CB ALA A 16 -108.474 20.637 11.189 1.00 55.92 C
ATOM 120 C ALA A 16 -110.220 18.875 11.344 1.00 62.38 C
ATOM 121 O ALA A 16 -109.669 17.900 11.874 1.00 65.38 O
ATOM 122 N SER A 17 -111.142 18.787 10.380 1.00 57.43 N
ATOM 123 CA SER A 17 -111.325 17.578 9.574 1.00 62.30 C
ATOM 124 CB SER A 17 -112.792 17.403 9.134 1.00 63.07 C
ATOM 125 OG SER A 17 -112.969 16.311 8.237 1.00 56.84 O
ATOM 126 C SER A 17 -110.417 17.661 8.347 1.00 63.16 C
ATOM 127 O SER A 17 -110.389 18.682 7.672 1.00 70.86 O
ATOM 128 N VAL A 18 -109.675 16.586 8.077 1.00 65.72 N
ATOM 129 CA VAL A 18 -108.809 16.479 6.905 1.00 62.49 C
ATOM 130 CB VAL A 18 -107.444 15.864 7.255 1.00 63.18 C
ATOM 131 CG1 VAL A 18 -106.535 15.768 6.028 1.00 63.89 C
ATOM 132 CG2 VAL A 18 -106.777 16.659 8.368 1.00 70.56 C
ATOM 133 C VAL A 18 -109.537 15.543 5.957 1.00 64.08 C
ATOM 134 O VAL A 18 -109.797 14.391 6.306 1.00 71.35 O
ATOM 135 N GLN A 19 -109.847 16.043 4.761 1.00 63.48 N
ATOM 136 CA GLN A 19 -110.728 15.362 3.814 1.00 65.00 C
ATOM 137 CB GLN A 19 -111.912 16.275 3.493 1.00 68.82 C
ATOM 138 CG GLN A 19 -112.534 16.943 4.720 1.00 73.16 C
ATOM 139 CD GLN A 19 -114.046 16.905 4.699 1.00 76.27 C
ATOM 140 OE1 GLN A 19 -114.679 16.373 5.612 1.00 87.01 O
ATOM 141 NE2 GLN A 19 -114.633 17.443 3.640 1.00 77.71 N
ATOM 142 C GLN A 19 -110.046 14.852 2.505 1.00 60.26 C
ATOM 143 O GLN A 19 -109.050 15.407 2.034 1.00 56.62 O
ATOM 144 N LEU A 20 -110.611 13.783 1.950 1.00 57.93 N
ATOM 145 CA LEU A 20 -110.148 13.157 0.715 1.00 64.76 C
ATOM 146 CB LEU A 20 -109.445 11.828 1.028 1.00 65.57 C
ATOM 147 CG LEU A 20 -108.836 11.177 -0.206 1.00 64.64 C
ATOM 148 CD1 LEU A 20 -107.624 12.008 -0.650 1.00 61.80 C

ATOM 149 CD2 LEU A 20 -108.521 9.705 0.044 1.00 63.47 C
ATOM 150 C LEU A 20 -111.355 12.861 -0.156 1.00 65.52 C
ATOM 151 O LEU A 20 -112.230 12.087 0.254 1.00 59.59 O
ATOM 152 N ASN A 21 -111.393 13.448 -1.355 1.00 75.76 N
ATOM 153 CA ASN A 21 -112.597 13.388 -2.219 1.00 78.85 C
ATOM 154 CB ASN A 21 -112.694 12.028 -2.944 1.00 73.96 C
ATOM 155 CG ASN A 21 -111.512 11.763 -3.895 1.00 76.93 C
ATOM 156 OD1 ASN A 21 -111.138 10.606 -4.115 1.00 78.42 O
ATOM 157 ND2 ASN A 21 -110.937 12.821 -4.471 1.00 62.55 N
ATOM 158 C ASN A 21 -113.895 13.713 -1.431 1.00 79.00 C
ATOM 159 O ASN A 21 -114.862 12.923 -1.432 1.00 72.67 O
ATOM 160 N GLY A 22 -113.865 14.866 -0.742 1.00 81.01 N
ATOM 161 CA GLY A 22 -115.024 15.441 -0.037 1.00 81.29 C
ATOM 162 C GLY A 22 -115.606 14.621 1.115 1.00 88.04 C
ATOM 163 O GLY A 22 -116.774 14.817 1.479 1.00 77.61 O
ATOM 164 N ALA A 23 -114.810 13.707 1.687 1.00 86.83 N
ATOM 165 CA ALA A 23 -115.253 12.849 2.804 1.00 84.51 C
ATOM 166 CB ALA A 23 -115.466 11.414 2.344 1.00 83.52 C
ATOM 167 C ALA A 23 -114.236 12.891 3.933 1.00 80.13 C
ATOM 168 O ALA A 23 -113.035 13.047 3.699 1.00 76.27 O
ATOM 169 N HIS A 24 -114.726 12.748 5.161 1.00 77.25 N
ATOM 170 CA HIS A 24 -113.871 12.835 6.334 1.00 77.13 C
ATOM 171 CB HIS A 24 -114.688 12.794 7.640 1.00 78.23 C
ATOM 172 CG HIS A 24 -113.839 12.684 8.871 1.00 80.47 C
ATOM 173 ND1 HIS A 24 -113.043 13.718 9.325 1.00 79.76 N
ATOM 174 CE1 HIS A 24 -112.393 13.327 10.408 1.00 75.95 C
ATOM 175 NE2 HIS A 24 -112.730 12.074 10.667 1.00 78.21 N
ATOM 176 CD2 HIS A 24 -113.631 11.648 9.719 1.00 77.75 C
ATOM 177 C HIS A 24 -112.868 11.686 6.301 1.00 70.92 C
ATOM 178 O HIS A 24 -113.261 10.527 6.193 1.00 60.47 O
ATOM 179 N LEU A 25 -111.581 12.013 6.360 1.00 65.55 N
ATOM 180 CA LEU A 25 -110.546 10.986 6.384 1.00 66.01 C
ATOM 181 CB LEU A 25 -109.462 11.314 5.352 1.00 74.42 C
ATOM 182 CG LEU A 25 -108.299 10.336 5.164 1.00 77.60 C
ATOM 183 CD1 LEU A 25 -108.775 8.931 4.833 1.00 80.51 C
ATOM 184 CD2 LEU A 25 -107.380 10.855 4.076 1.00 79.43 C
ATOM 185 C LEU A 25 -109.960 10.873 7.781 1.00 60.95 C

ATOM 186 O LEU A 25 -110.106 9.848 8.439 1.00 59.38 O
ATOM 187 N CYS A 26 -109.338 11.955 8.230 1.00 58.87 N
ATOM 188 CA CYS A 26 -108.582 12.001 9.475 1.00 60.41 C
ATOM 189 CB CYS A 26 -107.061 12.015 9.169 1.00 65.72 C
ATOM 190 SG CYS A 26 -106.334 10.364 8.863 1.00 80.08 S
ATOM 191 C CYS A 26 -108.938 13.282 10.216 1.00 59.68 C
ATOM 192 O CYS A 26 -109.569 14.187 9.643 1.00 59.52 O
ATOM 193 N GLY A 27 -108.492 13.354 11.472 1.00 49.53 N
ATOM 194 CA GLY A 27 -108.462 14.585 12.229 1.00 49.62 C
ATOM 195 C GLY A 27 -107.245 15.429 11.956 1.00 49.92 C
ATOM 196 O GLY A 27 -106.302 15.002 11.295 1.00 56.41 O
ATOM 197 N GLY A 28 -107.306 16.667 12.433 1.00 51.23 N
ATOM 198 CA GLY A 28 -106.197 17.615 12.331 1.00 47.83 C
ATOM 199 C GLY A 28 -106.391 18.721 13.332 1.00 50.03 C
ATOM 200 O GLY A 28 -107.454 18.810 13.959 1.00 50.28 O
ATOM 201 N VAL A 29 -105.369 19.562 13.480 1.00 53.47 N
ATOM 202 CA VAL A 29 -105.368 20.628 14.476 1.00 54.21 C
ATOM 203 CB VAL A 29 -104.655 20.201 15.792 1.00 56.05 C
ATOM 204 CG1 VAL A 29 -103.180 19.940 15.615 1.00 54.05 C
ATOM 205 CG2 VAL A 29 -104.795 21.277 16.861 1.00 65.51 C
ATOM 206 C VAL A 29 -104.741 21.888 13.869 1.00 58.91 C
ATOM 207 O VAL A 29 -103.615 21.840 13.340 1.00 52.03 O
ATOM 208 N LEU A 30 -105.473 23.010 13.920 1.00 61.54 N
ATOM 209 CA LEU A 30 -104.988 24.254 13.319 1.00 62.18 C
ATOM 210 CB LEU A 30 -106.094 25.300 13.172 1.00 66.37 C
ATOM 211 CG LEU A 30 -105.660 26.574 12.442 1.00 72.17 C
ATOM 212 CD1 LEU A 30 -105.263 26.317 10.997 1.00 74.12 C
ATOM 213 CD2 LEU A 30 -106.787 27.574 12.489 1.00 79.30 C
ATOM 214 C LEU A 30 -103.892 24.775 14.202 1.00 56.07 C
ATOM 215 O LEU A 30 -104.087 24.965 15.383 1.00 58.32 O
ATOM 216 N VAL A 31 -102.733 25.005 13.624 1.00 59.92 N
ATOM 217 CA VAL A 31 -101.495 25.176 14.405 1.00 65.99 C
ATOM 218 CB VAL A 31 -100.617 23.934 14.104 1.00 63.99 C
ATOM 219 CG1 VAL A 31 -99.248 24.284 13.540 1.00 68.60 C
ATOM 220 CG2 VAL A 31 -100.548 23.030 15.326 1.00 61.66 C
ATOM 221 C VAL A 31 -100.768 26.526 14.199 1.00 66.57 C
ATOM 222 O VAL A 31 -99.988 26.973 15.055 1.00 64.45 O

ATOM 223 N ALA A 32 -100.950 27.084 13.006 1.00 71.23 N
ATOM 224 CA ALA A 32 -100.792 28.506 12.703 1.00 70.77 C
ATOM 225 CB ALA A 32 -99.463 28.771 12.011 1.00 66.91 C
ATOM 226 C ALA A 32 -101.971 28.907 11.799 1.00 72.20 C
ATOM 227 O ALA A 32 -102.867 28.083 11.499 1.00 63.54 O
ATOM 228 N GLU A 33 -101.977 30.162 11.358 1.00 82.58 N
ATOM 229 CA GLU A 33 -103.130 30.696 10.600 1.00 84.73 C
ATOM 230 CB GLU A 33 -102.953 32.198 10.347 1.00 94.35 C
ATOM 231 CG GLU A 33 -102.854 33.033 11.630 1.00 99.89 C
ATOM 232 CD GLU A 33 -103.288 34.490 11.484 1.00100.31 C
ATOM 233 OE1 GLU A 33 -103.494 34.978 10.343 1.00 96.94 O
ATOM 234 OE2 GLU A 33 -103.414 35.154 12.540 1.00101.50 O
ATOM 235 C GLU A 33 -103.364 29.935 9.290 1.00 76.61 C
ATOM 236 O GLU A 33 -104.517 29.660 8.921 1.00 65.91 O
ATOM 237 N GLN A 34 -102.258 29.551 8.639 1.00 71.75 N
ATOM 238 CA GLN A 34 -102.283 28.829 7.349 1.00 77.38 C
ATOM 239 CB GLN A 34 -101.423 29.630 6.358 1.00 76.82 C
ATOM 240 CG GLN A 34 -101.876 29.527 4.913 1.00 70.08 C
ATOM 241 CD GLN A 34 -101.025 30.340 3.966 1.00 67.24 C
ATOM 242 OE1 GLN A 34 -100.251 31.221 4.371 1.00 73.84 O
ATOM 243 NE2 GLN A 34 -101.151 30.037 2.702 1.00 60.34 N
ATOM 244 C GLN A 34 -101.802 27.337 7.348 1.00 69.23 C
ATOM 245 O GLN A 34 -101.712 26.712 6.280 1.00 58.95 O
ATOM 246 N TRP A 35 -101.483 26.783 8.520 1.00 66.14 N
ATOM 247 CA TRP A 35 -101.003 25.390 8.624 1.00 64.33 C
ATOM 248 CB TRP A 35 -99.582 25.372 9.108 1.00 65.02 C
ATOM 249 CG TRP A 35 -98.619 25.969 8.198 1.00 66.29 C
ATOM 250 CD1 TRP A 35 -98.180 27.246 8.215 1.00 69.22 C
ATOM 251 NE1 TRP A 35 -97.246 27.433 7.253 1.00 64.77 N
ATOM 252 CE2 TRP A 35 -97.065 26.258 6.579 1.00 64.68 C
ATOM 253 CD2 TRP A 35 -97.918 25.312 7.161 1.00 60.11 C
ATOM 254 CE3 TRP A 35 -97.934 24.015 6.658 1.00 60.44 C
ATOM 255 CZ3 TRP A 35 -97.084 23.703 5.605 1.00 69.37 C
ATOM 256 CH2 TRP A 35 -96.237 24.679 5.032 1.00 66.54 C
ATOM 257 CZ2 TRP A 35 -96.213 25.953 5.510 1.00 68.37 C
ATOM 258 C TRP A 35 -101.810 24.491 9.569 1.00 58.91 C
ATOM 259 O TRP A 35 -102.043 24.860 10.713 1.00 64.13 O

ATOM 260 N VAL A 36 -102.172 23.302 9.086 1.00 57.64 N
ATOM 261 CA VAL A 36 -102.852 22.270 9.866 1.00 62.08 C
ATOM 262 CB VAL A 36 -104.142 21.838 9.143 1.00 66.22 C
ATOM 263 CG1 VAL A 36 -104.898 20.769 9.926 1.00 60.17 C
ATOM 264 CG2 VAL A 36 -105.014 23.077 8.934 1.00 74.44 C
ATOM 265 C VAL A 36 -101.895 21.083 10.135 1.00 62.41 C
ATOM 266 O VAL A 36 -101.134 20.655 9.234 1.00 59.88 O
ATOM 267 N LEU A 37 -101.905 20.591 11.384 1.00 58.90 N
ATOM 268 CA LEU A 37 -101.085 19.439 11.794 1.00 56.12 C
ATOM 269 CB LEU A 37 -100.427 19.681 13.150 1.00 58.56 C
ATOM 270 CG LEU A 37 -98.971 19.279 13.458 1.00 62.98 C
ATOM 271 CD1 LEU A 37 -98.863 18.734 14.880 1.00 59.29 C
ATOM 272 CD2 LEU A 37 -98.393 18.274 12.490 1.00 63.95 C
ATOM 273 C LEU A 37 -102.006 18.221 11.879 1.00 57.23 C
ATOM 274 O LEU A 37 -103.086 18.293 12.486 1.00 50.27 O
ATOM 275 N SER A 38 -101.583 17.117 11.254 1.00 52.10 N
ATOM 276 CA SER A 38 -102.301 15.843 11.318 1.00 47.78 C
ATOM 277 CB SER A 38 -103.359 15.790 10.203 1.00 47.30 C
ATOM 278 OG SER A 38 -104.057 14.551 10.104 1.00 47.03 O
ATOM 279 C SER A 38 -101.247 14.693 11.296 1.00 47.48 C
ATOM 280 O SER A 38 -100.107 14.920 11.752 1.00 43.79 O
ATOM 281 N ALA A 39 -101.608 13.488 10.819 1.00 45.27 N
ATOM 282 CA ALA A 39 -100.660 12.334 10.782 1.00 50.28 C
ATOM 283 CB ALA A 39 -101.171 11.150 11.617 1.00 42.67 C
ATOM 284 C ALA A 39 -100.370 11.861 9.364 1.00 47.40 C
ATOM 285 O ALA A 39 -101.253 11.862 8.536 1.00 48.50 O
ATOM 286 N ALA A 40 -99.149 11.384 9.133 1.00 45.42 N
ATOM 287 CA ALA A 40 -98.746 10.910 7.818 1.00 45.44 C
ATOM 288 CB ALA A 40 -97.235 10.757 7.725 1.00 43.83 C
ATOM 289 C ALA A 40 -99.420 9.642 7.333 1.00 45.97 C
ATOM 290 O ALA A 40 -99.545 9.484 6.126 1.00 50.25 O
ATOM 291 N HIS A 41 -99.840 8.726 8.212 1.00 46.85 N
ATOM 292 CA HIS A 41 -100.471 7.490 7.709 1.00 48.62 C
ATOM 293 CB HIS A 41 -100.765 6.481 8.825 1.00 50.15 C
ATOM 294 CG HIS A 41 -99.553 5.863 9.447 1.00 49.54 C
ATOM 295 ND1 HIS A 41 -98.536 5.315 8.704 1.00 47.59 N
ATOM 296 CE1 HIS A 41 -97.617 4.822 9.519 1.00 49.59 C

ATOM 297 NE2 HIS A 41 -97.999 5.031 10.770 1.00 44.16 N
ATOM 298 CD2 HIS A 41 -99.220 5.661 10.752 1.00 45.71 C
ATOM 299 C HIS A 41 -101.788 7.783 6.948 1.00 46.34 C
ATOM 300 O HIS A 41 -102.289 6.954 6.182 1.00 47.80 O
ATOM 301 N CYS A 42 -102.368 8.944 7.210 1.00 47.62 N
ATOM 302 CA CYS A 42 -103.590 9.385 6.551 1.00 49.01 C
ATOM 303 CB CYS A 42 -103.992 10.755 7.097 1.00 56.95 C
ATOM 304 SG CYS A 42 -104.342 10.699 8.846 1.00 63.78 S
ATOM 305 C CYS A 42 -103.448 9.513 5.064 1.00 48.91 C
ATOM 306 O CYS A 42 -104.329 9.102 4.349 1.00 54.59 O
ATOM 307 N LEU A 43 -102.340 10.086 4.602 1.00 52.26 N
ATOM 308 CA LEU A 43 -102.136 10.323 3.163 1.00 56.92 C
ATOM 309 CB LEU A 43 -101.637 11.766 2.954 1.00 56.43 C
ATOM 310 CG LEU A 43 -102.744 12.800 2.726 1.00 59.45 C
ATOM 311 CD1 LEU A 43 -103.938 12.652 3.664 1.00 62.16 C
ATOM 312 CD2 LEU A 43 -102.136 14.194 2.816 1.00 66.24 C
ATOM 313 C LEU A 43 -101.185 9.310 2.480 1.00 59.72 C
ATOM 314 O LEU A 43 -100.933 9.402 1.280 1.00 52.96 O
ATOM 315 N GLU A 44 -100.648 8.344 3.216 1.00 58.69 N
ATOM 316 CA GLU A 44 -99.728 7.374 2.586 1.00 57.22 C
ATOM 317 CB GLU A 44 -99.118 6.433 3.646 1.00 54.35 C
ATOM 318 CG GLU A 44 -100.094 5.416 4.290 1.00 57.01 C
ATOM 319 CD GLU A 44 -99.508 4.648 5.483 1.00 59.47 C
ATOM 320 OE1 GLU A 44 -100.065 3.583 5.849 1.00 60.74 O
ATOM 321 OE2 GLU A 44 -98.481 5.092 6.044 1.00 58.61 O
ATOM 322 C GLU A 44 -100.393 6.557 1.428 1.00 53.51 C
ATOM 323 O GLU A 44 -99.721 6.163 0.478 1.00 49.95 O
ATOM 324 N ASP A 45 -101.685 6.283 1.539 1.00 50.36 N
ATOM 325 CA ASP A 45 -102.389 5.428 0.582 1.00 59.62 C
ATOM 326 CB ASP A 45 -102.955 4.147 1.258 1.00 66.88 C
ATOM 327 CG ASP A 45 -103.468 4.390 2.678 1.00 83.20 C
ATOM 328 OD1 ASP A 45 -103.875 5.543 2.994 1.00 88.93 O
ATOM 329 OD2 ASP A 45 -103.427 3.429 3.491 1.00 91.86 O
ATOM 330 C ASP A 45 -103.477 6.197 -0.165 1.00 56.96 C
ATOM 331 O ASP A 45 -104.266 5.606 -0.881 1.00 58.66 O
ATOM 332 N ALA A 46 -103.544 7.508 0.032 1.00 55.54 N
ATOM 333 CA ALA A 46 -104.286 8.373 -0.843 1.00 63.63 C

ATOM 334 CB ALA A 46 -104.397 9.769 -0.267 1.00 69.35 C
ATOM 335 C ALA A 46 -103.400 8.379 -2.037 1.00 72.57 C
ATOM 336 O ALA A 46 -102.220 7.988 -1.959 1.00 88.46 O
ATOM 337 N ALA A 47 -103.934 8.789 -3.153 1.00 63.92 N
ATOM 338 CA ALA A 47 -103.171 8.635 -4.362 1.00 66.21 C
ATOM 339 CB ALA A 47 -103.811 7.554 -5.224 1.00 66.94 C
ATOM 340 C ALA A 47 -103.138 10.020 -5.004 1.00 70.69 C
ATOM 341 O ALA A 47 -102.528 10.941 -4.411 1.00 55.25 O
ATOM 342 N ASP A 48 -103.771 10.162 -6.178 1.00 70.26 N
ATOM 343 CA ASP A 48 -104.107 11.459 -6.768 1.00 70.70 C
ATOM 344 CB ASP A 48 -104.569 11.365 -8.268 1.00 71.49 C
ATOM 345 CG ASP A 48 -105.536 10.177 -8.571 1.00 71.07 C
ATOM 346 OD1 ASP A 48 -105.868 9.387 -7.674 1.00 63.05 O
ATOM 347 OD2 ASP A 48 -105.967 10.034 -9.738 1.00 76.45 O
ATOM 348 C ASP A 48 -105.129 12.201 -5.930 1.00 65.89 C
ATOM 349 O ASP A 48 -105.185 13.423 -6.015 1.00 67.38 O
ATOM 350 N GLY A 49 -105.925 11.480 -5.138 1.00 64.81 N
ATOM 351 CA GLY A 49 -106.927 12.075 -4.217 1.00 65.09 C
ATOM 352 C GLY A 49 -106.812 13.554 -3.826 1.00 69.62 C
ATOM 353 O GLY A 49 -105.720 14.074 -3.508 1.00 63.70 O
ATOM 354 N LYS A 50 -107.961 14.227 -3.834 1.00 78.73 N
ATOM 355 CA LYS A 50 -108.056 15.657 -3.584 1.00 77.16 C
ATOM 356 CB LYS A 50 -109.356 16.219 -4.200 1.00 88.22 C
ATOM 357 CG LYS A 50 -109.522 17.745 -4.162 1.00 98.21 C
ATOM 358 CD LYS A 50 -110.942 18.202 -4.539 1.00103.97 C
ATOM 359 CE LYS A 50 -111.095 18.544 -6.022 1.00104.03 C
ATOM 360 NZ LYS A 50 -110.744 19.961 -6.328 1.00101.55 N
ATOM 361 C LYS A 50 -108.030 15.875 -2.083 1.00 68.34 C
ATOM 362 O LYS A 50 -108.951 15.502 -1.368 1.00 68.05 O
ATOM 363 N VAL A 51 -106.976 16.516 -1.610 1.00 72.84 N
ATOM 364 CA VAL A 51 -106.817 16.748 -0.185 1.00 70.50 C
ATOM 365 CB VAL A 51 -105.338 16.622 0.233 1.00 67.92 C
ATOM 366 CG1 VAL A 51 -105.198 16.737 1.756 1.00 66.37 C
ATOM 367 CG2 VAL A 51 -104.762 15.321 -0.305 1.00 66.08 C
ATOM 368 C VAL A 51 -107.326 18.140 0.199 1.00 71.21 C
ATOM 369 O VAL A 51 -106.794 19.153 -0.277 1.00 67.75 O
ATOM 370 N GLN A 52 -108.319 18.172 1.092 1.00 68.29 N

ATOM 371 CA GLN A 52 -108.879 19.414 1.630 1.00 74.73 C
ATOM 372 CB GLN A 52 -110.222 19.700 0.945 1.00 76.26 C
ATOM 373 CG GLN A 52 -110.117 19.901 -0.564 1.00 75.31 C
ATOM 374 CD GLN A 52 -111.446 20.278 -1.198 1.00 78.00 C
ATOM 375 OE1 GLN A 52 -112.464 19.571 -1.034 1.00 65.46 O
ATOM 376 NE2 GLN A 52 -111.451 21.400 -1.926 1.00 63.33 N
ATOM 377 C GLN A 52 -109.079 19.356 3.163 1.00 75.26 C
ATOM 378 O GLN A 52 -109.563 18.364 3.695 1.00 71.17 O
ATOM 379 N VAL A 53 -108.710 20.437 3.845 1.00 71.06 N
ATOM 380 CA VAL A 53 -109.049 20.655 5.246 1.00 73.21 C
ATOM 381 CB VAL A 53 -107.976 21.523 5.959 1.00 75.38 C
ATOM 382 CG1 VAL A 53 -108.330 21.700 7.435 1.00 78.44 C
ATOM 383 CG2 VAL A 53 -106.584 20.911 5.807 1.00 74.73 C
ATOM 384 C VAL A 53 -110.396 21.386 5.405 1.00 74.31 C
ATOM 385 O VAL A 53 -110.604 22.448 4.822 1.00 77.88 O
ATOM 386 N LEU A 54 -111.276 20.848 6.239 1.00 63.38 N
ATOM 387 CA LEU A 54 -112.476 21.542 6.646 1.00 62.22 C
ATOM 388 CB LEU A 54 -113.640 20.559 6.697 1.00 61.56 C
ATOM 389 CG LEU A 54 -114.970 21.088 7.220 1.00 61.52 C
ATOM 390 CD1 LEU A 54 -115.493 22.178 6.284 1.00 56.69 C
ATOM 391 CD2 LEU A 54 -115.962 19.943 7.348 1.00 65.98 C
ATOM 392 C LEU A 54 -112.283 22.171 8.034 1.00 69.84 C
ATOM 393 O LEU A 54 -112.004 21.463 8.996 1.00 71.29 O
ATOM 394 N LEU A 55 -112.489 23.485 8.147 1.00 69.29 N
ATOM 395 CA LEU A 55 -112.340 24.185 9.414 1.00 65.08 C
ATOM 396 CB LEU A 55 -111.433 25.392 9.247 1.00 66.39 C
ATOM 397 CG LEU A 55 -109.945 25.158 9.028 1.00 61.05 C
ATOM 398 CD1 LEU A 55 -109.263 26.503 9.140 1.00 56.41 C
ATOM 399 CD2 LEU A 55 -109.366 24.161 10.051 1.00 62.68 C
ATOM 400 C LEU A 55 -113.669 24.654 9.919 1.00 70.01 C
ATOM 401 O LEU A 55 -114.662 24.562 9.209 1.00 73.46 O
ATOM 402 N GLY A 56 -113.677 25.132 11.168 1.00 70.58 N
ATOM 403 CA GLY A 56 -114.854 25.765 11.795 1.00 68.94 C
ATOM 404 C GLY A 56 -116.115 24.919 11.845 1.00 69.46 C
ATOM 405 O GLY A 56 -117.231 25.447 11.878 1.00 74.75 O
ATOM 406 N ALA A 57 -115.927 23.605 11.896 1.00 66.68 N
ATOM 407 CA ALA A 57 -116.988 22.655 11.658 1.00 62.29 C

ATOM 408 CB ALA A 57 -116.521 21.596 10.659 1.00 60.38 C
ATOM 409 C ALA A 57 -117.366 22.006 12.961 1.00 62.59 C
ATOM 410 O ALA A 57 -116.564 21.946 13.877 1.00 58.40 O
ATOM 411 N HIS A 58 -118.609 21.540 13.018 1.00 67.64 N
ATOM 412 CA HIS A 58 -119.074 20.646 14.057 1.00 69.33 C
ATOM 413 CB HIS A 58 -120.017 21.348 15.010 1.00 73.14 C
ATOM 414 CG HIS A 58 -120.495 20.479 16.134 1.00 70.99 C
ATOM 415 ND1 HIS A 58 -119.704 20.175 17.221 1.00 65.45 N
ATOM 416 CE1 HIS A 58 -120.391 19.414 18.059 1.00 69.30 C
ATOM 417 NE2 HIS A 58 -121.598 19.214 17.556 1.00 70.92 N
ATOM 418 CD2 HIS A 58 -121.689 19.870 16.350 1.00 74.95 C
ATOM 419 C HIS A 58 -119.802 19.500 13.428 1.00 76.11 C
ATOM 420 O HIS A 58 -119.517 18.351 13.731 1.00 88.02 O
ATOM 421 N SER A 59 -120.787 19.809 12.596 1.00 78.64 N
ATOM 422 CA SER A 59 -121.434 18.797 11.797 1.00 78.83 C
ATOM 423 CB SER A 59 -122.900 19.145 11.534 1.00 78.01 C
ATOM 424 OG SER A 59 -123.509 18.209 10.665 1.00 63.14 O
ATOM 425 C SER A 59 -120.651 18.715 10.501 1.00 80.64 C
ATOM 426 O SER A 59 -120.192 19.735 9.972 1.00 91.17 O
ATOM 427 N LEU A 60 -120.505 17.492 10.004 1.00 77.45 N
ATOM 428 CA LEU A 60 -119.838 17.237 8.736 1.00 81.02 C
ATOM 429 CB LEU A 60 -119.378 15.769 8.669 1.00 81.61 C
ATOM 430 CG LEU A 60 -118.336 15.334 9.721 1.00 78.39 C
ATOM 431 CD1 LEU A 60 -118.235 13.819 9.822 1.00 77.27 C
ATOM 432 CD2 LEU A 60 -116.978 15.938 9.423 1.00 76.76 C
ATOM 433 C LEU A 60 -120.756 17.593 7.562 1.00 79.33 C
ATOM 434 O LEU A 60 -120.361 18.344 6.665 1.00 71.00 O
ATOM 435 N SER A 61 -121.980 17.064 7.592 1.00 82.61 N
ATOM 436 CA SER A 61 -122.984 17.300 6.535 1.00 87.15 C
ATOM 437 CB SER A 61 -123.905 16.074 6.423 1.00 82.97 C
ATOM 438 OG SER A 61 -124.548 15.826 7.660 1.00 71.44 O
ATOM 439 C SER A 61 -123.840 18.589 6.715 1.00 88.46 C
ATOM 440 O SER A 61 -123.942 19.405 5.794 1.00 76.52 O
ATOM 441 N GLN A 62 -124.448 18.765 7.890 1.00 94.81 N
ATOM 442 CA GLN A 62 -125.416 19.850 8.099 1.00 98.89 C
ATOM 443 CB GLN A 62 -126.241 19.639 9.387 1.00 94.80 C
ATOM 444 CG GLN A 62 -126.995 18.305 9.495 1.00 92.85 C

ATOM 445 CD GLN A 62 -127.904 17.985 8.305 1.00 98.20 C
ATOM 446 OE1 GLN A 62 -128.258 18.864 7.515 1.00104.36 O
ATOM 447 NE2 GLN A 62 -128.293 16.713 8.182 1.00 90.97 N
ATOM 448 C GLN A 62 -124.715 21.222 8.105 1.00111.08 C
ATOM 449 O GLN A 62 -123.670 21.372 8.744 1.00122.08 O
ATOM 450 N PRO A 63 -125.284 22.223 7.386 1.00118.56 N
ATOM 451 CA PRO A 63 -124.529 23.445 7.065 1.00111.69 C
ATOM 452 CB PRO A 63 -125.287 24.007 5.861 1.00118.80 C
ATOM 453 CG PRO A 63 -126.707 23.577 6.086 1.00124.28 C
ATOM 454 CD PRO A 63 -126.696 22.344 6.962 1.00120.82 C
ATOM 455 C PRO A 63 -124.507 24.459 8.199 1.00100.34 C
ATOM 456 O PRO A 63 -125.411 24.464 9.044 1.00 95.91 O
ATOM 457 N GLU A 64 -123.482 25.309 8.200 1.00 86.59 N
ATOM 458 CA GLU A 64 -123.210 26.221 9.316 1.00 90.70 C
ATOM 459 CB GLU A 64 -122.433 25.501 10.437 1.00104.07 C
ATOM 460 CG GLU A 64 -123.197 24.420 11.214 1.00111.48 C
ATOM 461 CD GLU A 64 -122.429 23.847 12.411 1.00119.21 C
ATOM 462 OE1 GLU A 64 -121.438 23.087 12.200 1.00100.85 O
ATOM 463 OE2 GLU A 64 -122.841 24.138 13.567 1.00117.76 O
ATOM 464 C GLU A 64 -122.396 27.429 8.824 1.00 88.19 C
ATOM 465 O GLU A 64 -121.537 27.278 7.946 1.00 84.30 O
ATOM 466 N PRO A 65 -122.663 28.632 9.379 1.00 90.63 N
ATOM 467 CA PRO A 65 -121.933 29.842 8.950 1.00 89.70 C
ATOM 468 CB PRO A 65 -122.668 30.984 9.665 1.00 88.32 C
ATOM 469 CG PRO A 65 -123.382 30.351 10.812 1.00 88.07 C
ATOM 470 CD PRO A 65 -123.663 28.929 10.428 1.00 90.77 C
ATOM 471 C PRO A 65 -120.455 29.856 9.326 1.00 91.27 C
ATOM 472 O PRO A 65 -119.683 30.600 8.728 1.00 93.95 O
ATOM 473 N SER A 66 -120.074 29.051 10.315 1.00 98.69 N
ATOM 474 CA SER A 66 -118.687 28.963 10.786 1.00 94.76 C
ATOM 475 CB SER A 66 -118.684 28.288 12.164 1.00101.97 C
ATOM 476 OG SER A 66 -119.575 28.973 13.048 1.00108.83 O
ATOM 477 C SER A 66 -117.754 28.228 9.802 1.00 89.22 C
ATOM 478 O SER A 66 -116.578 28.612 9.614 1.00 89.02 O
ATOM 479 N LYS A 67 -118.302 27.201 9.153 1.00 79.13 N
ATOM 480 CA LYS A 67 -117.558 26.357 8.217 1.00 79.33 C
ATOM 481 CB LYS A 67 -118.470 25.226 7.687 1.00 82.28 C

ATOM 482 CG LYS A 67 -118.817 24.180 8.751 1.00 80.95 C
ATOM 483 CD LYS A 67 -119.957 23.238 8.367 1.00 75.56 C
ATOM 484 CE LYS A 67 -119.685 22.447 7.106 1.00 74.15 C
ATOM 485 NZ LYS A 67 -120.646 21.319 6.957 1.00 77.63 N
ATOM 486 C LYS A 67 -116.936 27.121 7.042 1.00 79.59 C
ATOM 487 O LYS A 67 -117.459 28.150 6.593 1.00 89.00 O
ATOM 488 N ARG A 68 -115.796 26.615 6.583 1.00 71.87 N
ATOM 489 CA ARG A 68 -115.164 27.044 5.347 1.00 71.64 C
ATOM 490 CB ARG A 68 -114.503 28.428 5.489 1.00 76.31 C
ATOM 491 CG ARG A 68 -113.896 28.968 4.186 1.00 80.67 C
ATOM 492 CD ARG A 68 -113.805 30.507 4.104 1.00 81.09 C
ATOM 493 NE ARG A 68 -112.550 31.082 3.550 1.00 76.74 N
ATOM 494 CZ ARG A 68 -111.861 30.659 2.471 1.00 77.34 C
ATOM 495 NH1 ARG A 68 -112.244 29.615 1.730 1.00 81.09 N
ATOM 496 NH2 ARG A 68 -110.753 31.307 2.096 1.00 73.47 N
ATOM 497 C ARG A 68 -114.172 25.944 4.916 1.00 75.88 C
ATOM 498 O ARG A 68 -113.298 25.544 5.693 1.00 75.98 O
ATOM 499 N LEU A 69 -114.358 25.440 3.693 1.00 79.36 N
ATOM 500 CA LEU A 69 -113.652 24.263 3.168 1.00 76.06 C
ATOM 501 CB LEU A 69 -114.636 23.383 2.386 1.00 71.49 C
ATOM 502 CG LEU A 69 -114.153 22.073 1.767 1.00 81.51 C
ATOM 503 CD1 LEU A 69 -113.520 21.170 2.819 1.00 81.78 C
ATOM 504 CD2 LEU A 69 -115.315 21.351 1.077 1.00 87.42 C
ATOM 505 C LEU A 69 -112.447 24.685 2.302 1.00 74.52 C
ATOM 506 O LEU A 69 -112.601 25.083 1.143 1.00 68.25 O
ATOM 507 N TYR A 70 -111.256 24.575 2.894 1.00 73.26 N
ATOM 508 CA TYR A 70 -109.997 25.050 2.310 1.00 73.06 C
ATOM 509 CB TYR A 70 -109.025 25.543 3.408 1.00 73.54 C
ATOM 510 CG TYR A 70 -109.490 26.770 4.199 1.00 75.92 C
ATOM 511 CD1 TYR A 70 -110.577 26.697 5.064 1.00 71.86 C
ATOM 512 CE1 TYR A 70 -111.012 27.807 5.787 1.00 79.39 C
ATOM 513 CZ TYR A 70 -110.359 29.033 5.659 1.00 80.13 C
ATOM 514 OH TYR A 70 -110.804 30.130 6.385 1.00 70.65 O
ATOM 515 CE2 TYR A 70 -109.264 29.134 4.803 1.00 83.23 C
ATOM 516 CD2 TYR A 70 -108.833 28.009 4.083 1.00 82.39 C
ATOM 517 C TYR A 70 -109.314 23.954 1.476 1.00 74.18 C
ATOM 518 O TYR A 70 -109.465 22.753 1.716 1.00 72.33 O

ATOM 519 N ASP A 71 -108.577 24.402 0.474 1.00 76.63 N
ATOM 520 CA ASP A 71 -107.784 23.542 -0.383 1.00 72.95 C
ATOM 521 CB ASP A 71 -107.866 24.027 -1.839 1.00 76.07 C
ATOM 522 CG ASP A 71 -109.220 23.777 -2.471 1.00 80.57 C
ATOM 523 OD1 ASP A 71 -110.144 23.318 -1.765 1.00 91.65 O
ATOM 524 OD2 ASP A 71 -109.358 24.047 -3.688 1.00 79.05 O
ATOM 525 C ASP A 71 -106.358 23.640 0.104 1.00 69.21 C
ATOM 526 O ASP A 71 -106.023 24.525 0.909 1.00 66.13 O
ATOM 527 N VAL A 72 -105.512 22.768 -0.431 1.00 67.86 N
ATOM 528 CA VAL A 72 -104.161 22.597 0.067 1.00 74.15 C
ATOM 529 CB VAL A 72 -104.042 21.180 0.690 1.00 78.54 C
ATOM 530 CG1 VAL A 72 -102.614 20.630 0.663 1.00 82.35 C
ATOM 531 CG2 VAL A 72 -104.591 21.215 2.113 1.00 75.25 C
ATOM 532 C VAL A 72 -103.074 22.880 -0.991 1.00 71.26 C
ATOM 533 O VAL A 72 -102.987 22.210 -2.019 1.00 70.49 O
ATOM 534 N LEU A 73 -102.222 23.854 -0.687 1.00 65.12 N
ATOM 535 CA LEU A 73 -101.077 24.160 -1.519 1.00 67.32 C
ATOM 536 CB LEU A 73 -100.502 25.549 -1.166 1.00 78.75 C
ATOM 537 CG LEU A 73 -101.097 26.719 -1.969 1.00 81.70 C
ATOM 538 CD1 LEU A 73 -100.873 28.029 -1.234 1.00 88.24 C
ATOM 539 CD2 LEU A 73 -100.501 26.771 -3.380 1.00 87.30 C
ATOM 540 C LEU A 73 -99.987 23.099 -1.443 1.00 69.32 C
ATOM 541 O LEU A 73 -99.546 22.631 -2.476 1.00 64.14 O
ATOM 542 N ARG A 74 -99.553 22.759 -0.221 1.00 68.83 N
ATOM 543 CA ARG A 74 -98.425 21.860 0.059 1.00 64.49 C
ATOM 544 CB ARG A 74 -97.238 22.617 0.738 1.00 66.78 C
ATOM 545 CG ARG A 74 -96.169 23.331 -0.100 1.00 77.48 C
ATOM 546 CD ARG A 74 -94.846 23.593 0.687 1.00 80.67 C
ATOM 547 NE ARG A 74 -94.738 24.885 1.427 1.00 85.86 N
ATOM 548 CZ ARG A 74 -93.666 25.316 2.132 1.00 77.70 C
ATOM 549 NH1 ARG A 74 -92.560 24.587 2.222 1.00 74.30 N
ATOM 550 NH2 ARG A 74 -93.686 26.501 2.755 1.00 77.08 N
ATOM 551 C ARG A 74 -98.963 20.827 1.091 1.00 67.39 C
ATOM 552 O ARG A 74 -99.653 21.213 2.039 1.00 63.20 O
ATOM 553 N ALA A 75 -98.628 19.542 0.931 1.00 64.08 N
ATOM 554 CA ALA A 75 -98.731 18.540 2.019 1.00 58.81 C
ATOM 555 CB ALA A 75 -99.608 17.392 1.591 1.00 56.63 C

ATOM 556 C ALA A 75 -97.336 18.041 2.416 1.00 53.31 C
ATOM 557 O ALA A 75 -96.601 17.550 1.567 1.00 57.93 O
ATOM 558 N VAL A 76 -96.972 18.168 3.694 1.00 49.78 N
ATOM 559 CA VAL A 76 -95.606 17.880 4.145 1.00 54.81 C
ATOM 560 CB VAL A 76 -94.864 19.143 4.655 1.00 55.40 C
ATOM 561 CG1 VAL A 76 -93.414 18.813 5.051 1.00 52.85 C
ATOM 562 CG2 VAL A 76 -94.861 20.243 3.593 1.00 60.41 C
ATOM 563 C VAL A 76 -95.574 16.761 5.211 1.00 58.62 C
ATOM 564 O VAL A 76 -95.628 17.032 6.426 1.00 51.58 O
ATOM 565 N PRO A 77 -95.482 15.502 4.748 1.00 56.07 N
ATOM 566 CA PRO A 77 -95.204 14.412 5.661 1.00 57.59 C
ATOM 567 CB PRO A 77 -95.327 13.135 4.779 1.00 58.68 C
ATOM 568 CG PRO A 77 -96.241 13.532 3.666 1.00 62.63 C
ATOM 569 CD PRO A 77 -95.945 15.013 3.434 1.00 60.50 C
ATOM 570 C PRO A 77 -93.819 14.533 6.243 1.00 54.26 C
ATOM 571 O PRO A 77 -92.874 14.892 5.553 1.00 58.52 O
ATOM 572 N HIS A 78 -93.694 14.214 7.519 1.00 54.31 N
ATOM 573 CA HIS A 78 -92.390 14.158 8.099 1.00 50.67 C
ATOM 574 CB HIS A 78 -92.452 13.594 9.499 1.00 46.97 C
ATOM 575 CG HIS A 78 -91.178 13.745 10.241 1.00 44.46 C
ATOM 576 ND1 HIS A 78 -90.093 12.948 9.988 1.00 44.79 N
ATOM 577 CE1 HIS A 78 -89.086 13.319 10.768 1.00 53.11 C
ATOM 578 NE2 HIS A 78 -89.484 14.340 11.506 1.00 47.95 N
ATOM 579 CD2 HIS A 78 -90.790 14.629 11.190 1.00 46.11 C
ATOM 580 C HIS A 78 -91.548 13.246 7.209 1.00 53.14 C
ATOM 581 O HIS A 78 -92.017 12.170 6.818 1.00 49.19 O
ATOM 582 N PRO A 79 -90.310 13.662 6.894 1.00 56.64 N
ATOM 583 CA PRO A 79 -89.460 12.854 5.996 1.00 58.75 C
ATOM 584 CB PRO A 79 -88.160 13.708 5.858 1.00 55.60 C
ATOM 585 CG PRO A 79 -88.161 14.610 7.041 1.00 53.45 C
ATOM 586 CD PRO A 79 -89.616 14.892 7.344 1.00 53.81 C
ATOM 587 C PRO A 79 -89.077 11.449 6.466 1.00 57.00 C
ATOM 588 O PRO A 79 -88.572 10.703 5.655 1.00 51.22 O
ATOM 589 N ASP A 80 -89.250 11.111 7.748 1.00 54.45 N
ATOM 590 CA ASP A 80 -88.936 9.772 8.240 1.00 51.98 C
ATOM 591 CB ASP A 80 -87.987 9.836 9.445 1.00 54.02 C
ATOM 592 CG ASP A 80 -86.615 10.401 9.087 1.00 56.72 C

ATOM 593 OD1 ASP A 80 -86.082 10.004 8.037 1.00 56.21 O
ATOM 594 OD2 ASP A 80 -86.056 11.215 9.860 1.00 52.71 O
ATOM 595 C ASP A 80 -90.189 8.954 8.559 1.00 52.05 C
ATOM 596 O ASP A 80 -90.103 7.852 9.139 1.00 50.76 O
ATOM 597 N SER A 81 -91.347 9.439 8.125 1.00 50.16 N
ATOM 598 CA SER A 81 -92.587 8.692 8.309 1.00 46.90 C
ATOM 599 CB SER A 81 -93.802 9.602 8.171 1.00 46.68 C
ATOM 600 OG SER A 81 -94.001 10.025 6.838 1.00 49.17 O
ATOM 601 C SER A 81 -92.629 7.659 7.237 1.00 48.48 C
ATOM 602 O SER A 81 -92.109 7.898 6.142 1.00 48.08 O
ATOM 603 N GLN A 82 -93.240 6.521 7.545 1.00 49.15 N
ATOM 604 CA GLN A 82 -93.378 5.435 6.606 1.00 46.39 C
ATOM 605 CB GLN A 82 -92.056 4.697 6.395 1.00 52.58 C
ATOM 606 CG GLN A 82 -91.350 4.203 7.616 1.00 55.17 C
ATOM 607 CD GLN A 82 -89.928 3.750 7.322 1.00 60.17 C
ATOM 608 OE1 GLN A 82 -89.052 3.902 8.159 1.00 65.03 O
ATOM 609 NE2 GLN A 82 -89.696 3.185 6.139 1.00 65.54 N
ATOM 610 C GLN A 82 -94.463 4.475 6.992 1.00 46.17 C
ATOM 611 O GLN A 82 -94.823 4.422 8.146 1.00 47.23 O
ATOM 612 N PRO A 83 -95.019 3.744 6.000 1.00 47.58 N
ATOM 613 CA PRO A 83 -96.134 2.843 6.259 1.00 49.37 C
ATOM 614 CB PRO A 83 -96.409 2.215 4.863 1.00 50.90 C
ATOM 615 CG PRO A 83 -95.949 3.222 3.872 1.00 44.32 C
ATOM 616 CD PRO A 83 -94.794 3.935 4.533 1.00 45.39 C
ATOM 617 C PRO A 83 -95.882 1.760 7.315 1.00 55.59 C
ATOM 618 O PRO A 83 -96.770 1.486 8.156 1.00 51.70 O
ATOM 619 N ASP A 84 -94.688 1.162 7.295 1.00 62.93 N
ATOM 620 CA ASP A 84 -94.440 -0.021 8.132 1.00 71.16 C
ATOM 621 CB ASP A 84 -93.357 -0.950 7.502 1.00 77.76 C
ATOM 622 CG ASP A 84 -93.877 -1.741 6.227 1.00 86.88 C
ATOM 623 OD1 ASP A 84 -95.118 -1.903 6.043 1.00 77.29 O
ATOM 624 OD2 ASP A 84 -93.033 -2.203 5.407 1.00 81.78 O
ATOM 625 C ASP A 84 -94.182 0.312 9.628 1.00 65.69 C
ATOM 626 O ASP A 84 -94.162 -0.582 10.436 1.00 62.14 O
ATOM 627 N THR A 85 -94.047 1.585 10.002 1.00 65.03 N
ATOM 628 CA THR A 85 -93.824 1.958 11.405 1.00 61.80 C
ATOM 629 CB THR A 85 -92.378 2.461 11.700 1.00 59.68 C

ATOM 630 OG1 THR A 85 -92.350 3.901 11.683 1.00 52.79 O
ATOM 631 CG2 THR A 85 -91.328 1.837 10.780 1.00 55.91 C
ATOM 632 C THR A 85 -94.765 3.033 11.949 1.00 58.31 C
ATOM 633 O THR A 85 -95.562 3.642 11.253 1.00 68.30 O
ATOM 634 N ILE A 86 -94.581 3.286 13.225 1.00 57.18 N
ATOM 635 CA ILE A 86 -95.452 4.088 14.033 1.00 53.33 C
ATOM 636 CB ILE A 86 -95.833 3.193 15.271 1.00 52.50 C
ATOM 637 CG1 ILE A 86 -97.320 3.186 15.518 1.00 60.80 C
ATOM 638 CD1 ILE A 86 -97.797 1.813 15.937 1.00 67.29 C
ATOM 639 CG2 ILE A 86 -95.014 3.436 16.557 1.00 49.87 C
ATOM 640 C ILE A 86 -94.747 5.398 14.378 1.00 45.82 C
ATOM 641 O ILE A 86 -95.329 6.244 15.006 1.00 47.68 O
ATOM 642 N ASP A 87 -93.498 5.581 13.964 1.00 47.15 N
ATOM 643 CA ASP A 87 -92.670 6.523 14.684 1.00 55.48 C
ATOM 644 CB ASP A 87 -91.158 6.169 14.608 1.00 54.86 C
ATOM 645 CG ASP A 87 -90.793 4.863 15.448 1.00 56.41 C
ATOM 646 OD1 ASP A 87 -91.269 4.674 16.587 1.00 52.19 O
ATOM 647 OD2 ASP A 87 -90.026 4.010 14.960 1.00 63.66 O
ATOM 648 C ASP A 87 -93.026 7.989 14.371 1.00 68.19 C
ATOM 649 O ASP A 87 -93.811 8.644 15.152 1.00 88.24 O
ATOM 650 N HIS A 88 -92.529 8.510 13.262 1.00 54.06 N
ATOM 651 CA HIS A 88 -92.476 9.972 13.142 1.00 49.01 C
ATOM 652 CB HIS A 88 -91.177 10.380 12.452 1.00 44.15 C
ATOM 653 CG HIS A 88 -89.950 9.722 13.006 1.00 46.44 C
ATOM 654 ND1 HIS A 88 -89.284 8.712 12.334 1.00 47.20 N
ATOM 655 CE1 HIS A 88 -88.220 8.345 13.034 1.00 50.05 C
ATOM 656 NE2 HIS A 88 -88.196 9.043 14.156 1.00 48.32 N
ATOM 657 CD2 HIS A 88 -89.262 9.916 14.161 1.00 49.69 C
ATOM 658 C HIS A 88 -93.716 10.383 12.339 1.00 52.73 C
ATOM 659 O HIS A 88 -93.637 10.856 11.182 1.00 51.57 O
ATOM 660 N ASP A 89 -94.873 10.147 12.937 1.00 46.44 N
ATOM 661 CA ASP A 89 -96.124 10.086 12.182 1.00 49.55 C
ATOM 662 CB ASP A 89 -97.051 8.957 12.729 1.00 44.61 C
ATOM 663 CG ASP A 89 -98.360 8.795 11.913 1.00 46.57 C
ATOM 664 OD1 ASP A 89 -98.402 9.123 10.690 1.00 47.99 O
ATOM 665 OD2 ASP A 89 -99.379 8.355 12.506 1.00 49.23 O
ATOM 666 C ASP A 89 -96.813 11.466 12.169 1.00 46.20 C

ATOM 667 O ASP A 89 -97.945 11.607 12.580 1.00 40.98 O
ATOM 668 N LEU A 90 -96.106 12.472 11.668 1.00 53.44 N
ATOM 669 CA LEU A 90 -96.604 13.848 11.633 1.00 55.20 C
ATOM 670 CB LEU A 90 -95.709 14.780 12.448 1.00 52.16 C
ATOM 671 CG LEU A 90 -95.832 14.711 13.980 1.00 53.64 C
ATOM 672 CD1 LEU A 90 -94.985 15.774 14.645 1.00 50.45 C
ATOM 673 CD2 LEU A 90 -97.272 14.904 14.437 1.00 56.10 C
ATOM 674 C LEU A 90 -96.697 14.290 10.188 1.00 58.19 C
ATOM 675 O LEU A 90 -95.879 13.895 9.338 1.00 55.16 O
ATOM 676 N LEU A 91 -97.707 15.110 9.925 1.00 60.83 N
ATOM 677 CA LEU A 91 -97.994 15.611 8.589 1.00 54.65 C
ATOM 678 CB LEU A 91 -99.130 14.789 7.998 1.00 62.47 C
ATOM 679 CG LEU A 91 -99.841 15.364 6.750 1.00 62.40 C
ATOM 680 CD1 LEU A 91 -98.874 15.373 5.578 1.00 54.96 C
ATOM 681 CD2 LEU A 91 -101.120 14.594 6.448 1.00 64.82 C
ATOM 682 C LEU A 91 -98.457 17.063 8.671 1.00 51.29 C
ATOM 683 O LEU A 91 -99.505 17.315 9.281 1.00 46.58 O
ATOM 684 N LEU A 92 -97.745 17.984 8.000 1.00 49.79 N
ATOM 685 CA LEU A 92 -98.175 19.429 7.913 1.00 54.41 C
ATOM 686 CB LEU A 92 -97.000 20.392 8.103 1.00 46.21 C
ATOM 687 CG LEU A 92 -96.593 20.503 9.558 1.00 45.92 C
ATOM 688 CD1 LEU A 92 -95.163 21.030 9.701 1.00 45.80 C
ATOM 689 CD2 LEU A 92 -97.599 21.347 10.324 1.00 50.54 C
ATOM 690 C LEU A 92 -98.887 19.802 6.620 1.00 56.87 C
ATOM 691 O LEU A 92 -98.430 19.469 5.528 1.00 57.89 O
ATOM 692 N LEU A 93 -99.999 20.509 6.771 1.00 56.95 N
ATOM 693 CA LEU A 93 -100.838 20.944 5.663 1.00 59.89 C
ATOM 694 CB LEU A 93 -102.264 20.415 5.901 1.00 57.46 C
ATOM 695 CG LEU A 93 -102.719 19.128 5.222 1.00 58.50 C
ATOM 696 CD1 LEU A 93 -101.549 18.248 4.847 1.00 65.94 C
ATOM 697 CD2 LEU A 93 -103.726 18.373 6.082 1.00 55.89 C
ATOM 698 C LEU A 93 -100.825 22.505 5.520 1.00 62.55 C
ATOM 699 O LEU A 93 -101.327 23.206 6.389 1.00 59.38 O
ATOM 700 N GLN A 94 -100.238 23.032 4.439 1.00 65.06 N
ATOM 701 CA GLN A 94 -100.366 24.453 4.085 1.00 62.75 C
ATOM 702 CB GLN A 94 -99.233 24.914 3.203 1.00 63.92 C
ATOM 703 CG GLN A 94 -99.053 26.426 3.187 1.00 66.00 C

ATOM 704 CD GLN A 94 -97.908 26.831 2.278 1.00 67.99 C
ATOM 705 OE1 GLN A 94 -97.796 26.347 1.142 1.00 67.63 O
ATOM 706 NE2 GLN A 94 -97.030 27.695 2.780 1.00 70.16 N
ATOM 707 C GLN A 94 -101.668 24.674 3.345 1.00 60.85 C
ATOM 708 O GLN A 94 -101.921 24.046 2.317 1.00 57.09 O
ATOM 709 N LEU A 95 -102.499 25.569 3.861 1.00 67.34 N
ATOM 710 CA LEU A 95 -103.777 25.882 3.200 1.00 73.41 C
ATOM 711 CB LEU A 95 -104.751 26.542 4.172 1.00 69.29 C
ATOM 712 CG LEU A 95 -104.970 25.767 5.472 1.00 67.58 C
ATOM 713 CD1 LEU A 95 -105.759 26.596 6.460 1.00 69.84 C
ATOM 714 CD2 LEU A 95 -105.665 24.454 5.183 1.00 66.85 C
ATOM 715 C LEU A 95 -103.478 26.815 2.029 1.00 72.99 C
ATOM 716 O LEU A 95 -102.424 27.460 2.028 1.00 77.73 O
ATOM 717 N SER A 96 -104.373 26.831 1.034 1.00 73.95 N
ATOM 718 CA SER A 96 -104.364 27.798 -0.104 1.00 76.26 C
ATOM 719 CB SER A 96 -105.711 27.767 -0.847 1.00 71.90 C
ATOM 720 OG SER A 96 -106.782 28.137 0.030 1.00 71.68 O
ATOM 721 C SER A 96 -104.088 29.240 0.345 1.00 81.28 C
ATOM 722 O SER A 96 -103.174 29.902 -0.167 1.00 82.49 O
ATOM 723 N GLU A 97 -104.876 29.700 1.315 1.00 89.30 N
ATOM 724 CA GLU A 97 -104.669 31.010 1.960 1.00102.42 C
ATOM 725 CB GLU A 97 -105.639 32.065 1.380 1.00110.20 C
ATOM 726 CG GLU A 97 -107.125 31.719 1.510 1.00114.09 C
ATOM 727 CD GLU A 97 -108.036 32.917 1.294 1.00125.94 C
ATOM 728 OE1 GLU A 97 -108.986 32.811 0.479 1.00121.47 O
ATOM 729 OE2 GLU A 97 -107.806 33.964 1.946 1.00129.88 O
ATOM 730 C GLU A 97 -104.855 30.916 3.474 1.00 89.22 C
ATOM 731 O GLU A 97 -105.325 29.900 3.993 1.00 86.14 O
ATOM 732 N LYS A 98 -104.519 31.998 4.168 1.00 85.61 N
ATOM 733 CA LYS A 98 -104.758 32.107 5.609 1.00 90.62 C
ATOM 734 CB LYS A 98 -104.365 33.492 6.126 1.00 96.61 C
ATOM 735 CG LYS A 98 -102.874 33.807 6.094 1.00 99.66 C
ATOM 736 CD LYS A 98 -102.423 34.406 7.426 1.00106.61 C
ATOM 737 CE LYS A 98 -100.993 34.927 7.410 1.00108.30 C
ATOM 738 NZ LYS A 98 -100.988 36.391 7.174 1.00111.59 N
ATOM 739 C LYS A 98 -106.220 31.843 5.962 1.00 85.23 C
ATOM 740 O LYS A 98 -107.123 32.115 5.172 1.00 95.43 O

ATOM 741 N ALA A 99 -106.445 31.319 7.157 1.00 84.44 N
ATOM 742 CA ALA A 99 -107.800 30.996 7.600 1.00 91.80 C
ATOM 743 CB ALA A 99 -107.769 30.039 8.780 1.00 94.69 C
ATOM 744 C ALA A 99 -108.578 32.251 7.968 1.00 92.34 C
ATOM 745 O ALA A 99 -107.992 33.302 8.229 1.00 78.28 O
ATOM 746 N THR A 100 -109.902 32.133 7.970 1.00 95.35 N
ATOM 747 CA THR A 100 -110.756 33.195 8.478 1.00 96.42 C
ATOM 748 CB THR A 100 -112.026 33.388 7.614 1.00 94.92 C
ATOM 749 OG1 THR A 100 -111.641 33.814 6.300 1.00 84.51 O
ATOM 750 CG2 THR A 100 -112.960 34.450 8.224 1.00 90.59 C
ATOM 751 C THR A 100 -111.039 32.897 9.970 1.00 96.38 C
ATOM 752 O THR A 100 -111.912 32.091 10.337 1.00 85.07 O
ATOM 753 N LEU A 101 -110.265 33.576 10.814 1.00 97.77 N
ATOM 754 CA LEU A 101 -110.368 33.455 12.263 1.00 95.74 C
ATOM 755 CB LEU A 101 -109.278 34.288 12.960 1.00 90.82 C
ATOM 756 CG LEU A 101 -107.803 34.040 12.621 1.00 92.35 C
ATOM 757 CD1 LEU A 101 -106.911 34.734 13.646 1.00 98.80 C
ATOM 758 CD2 LEU A 101 -107.467 32.558 12.543 1.00 90.34 C
ATOM 759 C LEU A 101 -111.738 33.902 12.751 1.00 91.10 C
ATOM 760 O LEU A 101 -112.430 34.649 12.070 1.00101.27 O
ATOM 761 N GLY A 102 -112.117 33.433 13.934 1.00 89.72 N
ATOM 762 CA GLY A 102 -113.414 33.747 14.529 1.00 88.58 C
ATOM 763 C GLY A 102 -113.503 33.191 15.931 1.00 90.70 C
ATOM 764 O GLY A 102 -112.514 32.698 16.462 1.00 84.28 O
ATOM 765 N PRO A 103 -114.681 33.293 16.557 1.00 98.14 N
ATOM 766 CA PRO A 103 -114.904 32.520 17.783 1.00 95.47 C
ATOM 767 CB PRO A 103 -116.270 33.025 18.264 1.00 98.56 C
ATOM 768 CG PRO A 103 -116.338 34.431 17.750 1.00 98.21 C
ATOM 769 CD PRO A 103 -115.675 34.370 16.400 1.00 96.91 C
ATOM 770 C PRO A 103 -114.914 30.992 17.568 1.00 93.00 C
ATOM 771 O PRO A 103 -114.695 30.250 18.544 1.00 79.49 O
ATOM 772 N ALA A 104 -115.149 30.536 16.322 1.00 80.67 N
ATOM 773 CA ALA A 104 -115.195 29.095 15.993 1.00 74.68 C
ATOM 774 CB ALA A 104 -116.538 28.754 15.349 1.00 69.24 C
ATOM 775 C ALA A 104 -114.008 28.547 15.137 1.00 71.17 C
ATOM 776 O ALA A 104 -113.952 27.340 14.837 1.00 64.70 O
ATOM 777 N VAL A 105 -113.070 29.421 14.766 1.00 71.01 N

ATOM 778 CA VAL A 105 -111.855 29.025 14.053 1.00 71.66 C
ATOM 779 CB VAL A 105 -111.944 29.407 12.565 1.00 72.20 C
ATOM 780 CG1 VAL A 105 -110.686 28.982 11.811 1.00 73.91 C
ATOM 781 CG2 VAL A 105 -113.189 28.796 11.949 1.00 71.95 C
ATOM 782 C VAL A 105 -110.670 29.753 14.672 1.00 79.99 C
ATOM 783 O VAL A 105 -110.620 30.974 14.605 1.00103.73 O
ATOM 784 N ARG A 106 -109.717 29.028 15.262 1.00 79.86 N
ATOM 785 CA ARG A 106 -108.529 29.652 15.874 1.00 77.76 C
ATOM 786 CB ARG A 106 -108.899 30.289 17.226 1.00 78.45 C
ATOM 787 CG ARG A 106 -107.982 31.433 17.667 1.00 89.88 C
ATOM 788 CD ARG A 106 -107.976 31.642 19.184 1.00105.40 C
ATOM 789 NE ARG A 106 -109.324 31.585 19.790 1.00123.89 N
ATOM 790 CZ ARG A 106 -109.596 31.551 21.106 1.00124.69 C
ATOM 791 NH1 ARG A 106 -108.628 31.584 22.027 1.00127.81 N
ATOM 792 NH2 ARG A 106 -110.864 31.490 21.512 1.00124.54 N
ATOM 793 C ARG A 106 -107.373 28.639 16.057 1.00 72.41 C
ATOM 794 O ARG A 106 -107.603 27.513 16.507 1.00 61.45 O
ATOM 795 N PRO A 107 -106.126 29.032 15.720 1.00 71.40 N
ATOM 796 CA PRO A 107 -105.023 28.111 16.006 1.00 74.45 C
ATOM 797 CB PRO A 107 -103.792 28.823 15.405 1.00 75.72 C
ATOM 798 CG PRO A 107 -104.194 30.247 15.261 1.00 72.49 C
ATOM 799 CD PRO A 107 -105.657 30.189 14.943 1.00 72.88 C
ATOM 800 C PRO A 107 -104.824 27.841 17.501 1.00 74.51 C
ATOM 801 O PRO A 107 -105.078 28.719 18.319 1.00 72.04 O
ATOM 802 N LEU A 108 -104.403 26.619 17.830 1.00 77.81 N
ATOM 803 CA LEU A 108 -104.025 26.251 19.186 1.00 71.58 C
ATOM 804 CB LEU A 108 -104.412 24.809 19.478 1.00 69.61 C
ATOM 805 CG LEU A 108 -104.465 24.353 20.938 1.00 73.59 C
ATOM 806 CD1 LEU A 108 -105.548 25.069 21.745 1.00 71.48 C
ATOM 807 CD2 LEU A 108 -104.693 22.837 20.988 1.00 71.87 C
ATOM 808 C LEU A 108 -102.515 26.438 19.363 1.00 72.30 C
ATOM 809 O LEU A 108 -101.723 26.147 18.444 1.00 76.52 O
ATOM 810 N PRO A 109 -102.105 26.961 20.530 1.00 68.79 N
ATOM 811 CA PRO A 109 -100.679 26.911 20.851 1.00 71.40 C
ATOM 812 CB PRO A 109 -100.540 27.804 22.101 1.00 76.84 C
ATOM 813 CG PRO A 109 -101.921 28.098 22.592 1.00 80.41 C
ATOM 814 CD PRO A 109 -102.909 27.676 21.548 1.00 78.75 C

ATOM 815 C PRO A 109 -100.220 25.469 21.129 1.00 66.47 C
ATOM 816 O PRO A 109 -100.943 24.668 21.742 1.00 54.10 O
ATOM 817 N TRP A 110 -99.024 25.149 20.661 1.00 60.14 N
ATOM 818 CA TRP A 110 -98.512 23.817 20.815 1.00 57.57 C
ATOM 819 CB TRP A 110 -98.316 23.121 19.460 1.00 58.72 C
ATOM 820 CG TRP A 110 -97.508 23.843 18.500 1.00 55.42 C
ATOM 821 CD1 TRP A 110 -97.944 24.760 17.635 1.00 57.19 C
ATOM 822 NE1 TRP A 110 -96.905 25.238 16.886 1.00 63.80 N
ATOM 823 CE2 TRP A 110 -95.755 24.608 17.260 1.00 55.40 C
ATOM 824 CD2 TRP A 110 -96.101 23.704 18.278 1.00 56.35 C
ATOM 825 CE3 TRP A 110 -95.104 22.926 18.856 1.00 57.41 C
ATOM 826 CZ3 TRP A 110 -93.791 23.067 18.384 1.00 66.98 C
ATOM 827 CH2 TRP A 110 -93.485 23.975 17.339 1.00 63.33 C
ATOM 828 CZ2 TRP A 110 -94.460 24.747 16.774 1.00 58.66 C
ATOM 829 C TRP A 110 -97.253 23.831 21.642 1.00 55.10 C
ATOM 830 O TRP A 110 -96.523 24.822 21.702 1.00 50.12 O
ATOM 831 N GLN A 111 -97.026 22.694 22.289 1.00 57.25 N
ATOM 832 CA GLN A 111 -96.030 22.574 23.329 1.00 57.47 C
ATOM 833 CB GLN A 111 -96.271 21.286 24.134 1.00 59.53 C
ATOM 834 CG GLN A 111 -95.200 21.012 25.188 1.00 63.00 C
ATOM 835 CD GLN A 111 -95.090 22.153 26.163 1.00 58.66 C
ATOM 836 OE1 GLN A 111 -94.109 22.936 26.143 1.00 60.61 O
ATOM 837 NE2 GLN A 111 -96.111 22.284 26.998 1.00 45.26 N
ATOM 838 C GLN A 111 -94.615 22.590 22.747 1.00 59.91 C
ATOM 839 O GLN A 111 -94.223 21.677 22.015 1.00 62.33 O
ATOM 840 N ARG A 112 -93.847 23.600 23.129 1.00 60.74 N
ATOM 841 CA ARG A 112 -92.477 23.780 22.647 1.00 67.39 C
ATOM 842 CB ARG A 112 -92.199 25.274 22.493 1.00 74.08 C
ATOM 843 CG ARG A 112 -93.313 26.031 21.754 1.00 79.27 C
ATOM 844 CD ARG A 112 -92.827 27.330 21.134 1.00 75.27 C
ATOM 845 NE ARG A 112 -91.553 27.121 20.450 1.00 72.04 N
ATOM 846 CZ ARG A 112 -91.378 26.918 19.136 1.00 72.73 C
ATOM 847 NH1 ARG A 112 -90.136 26.723 18.697 1.00 62.20 N
ATOM 848 NH2 ARG A 112 -92.394 26.934 18.247 1.00 72.26 N
ATOM 849 C ARG A 112 -91.425 23.163 23.584 1.00 69.77 C
ATOM 850 O ARG A 112 -90.291 22.913 23.163 1.00 55.97 O
ATOM 851 N VAL A 113 -91.791 22.943 24.851 1.00 63.53 N

ATOM 852 CA VAL A 113 -90.835 22.491 25.848 1.00 67.18 C
ATOM 853 CB VAL A 113 -91.135 23.053 27.261 1.00 69.75 C
ATOM 854 CG1 VAL A 113 -89.973 22.767 28.208 1.00 64.93 C
ATOM 855 CG2 VAL A 113 -91.375 24.558 27.189 1.00 74.93 C
ATOM 856 C VAL A 113 -90.858 20.974 25.880 1.00 63.65 C
ATOM 857 O VAL A 113 -91.905 20.377 26.150 1.00 58.81 O
ATOM 858 N ASP A 114 -89.701 20.363 25.616 1.00 58.90 N
ATOM 859 CA ASP A 114 -89.621 18.932 25.478 1.00 56.77 C
ATOM 860 CB ASP A 114 -88.544 18.485 24.490 1.00 56.93 C
ATOM 861 CG ASP A 114 -88.750 17.031 24.038 1.00 61.72 C
ATOM 862 OD1 ASP A 114 -89.787 16.430 24.443 1.00 57.51 O
ATOM 863 OD2 ASP A 114 -87.892 16.486 23.288 1.00 57.09 O
ATOM 864 C ASP A 114 -89.434 18.263 26.826 1.00 57.37 C
ATOM 865 O ASP A 114 -88.328 17.849 27.195 1.00 49.04 O
ATOM 866 N ARG A 115 -90.558 18.159 27.532 1.00 56.30 N
ATOM 867 CA ARG A 115 -90.661 17.431 28.772 1.00 61.08 C
ATOM 868 CB ARG A 115 -90.426 18.387 29.965 1.00 75.52 C
ATOM 869 CG ARG A 115 -91.322 18.177 31.191 1.00 92.64 C
ATOM 870 CD ARG A 115 -90.715 18.760 32.467 1.00109.71 C
ATOM 871 NE ARG A 115 -89.597 17.943 32.954 1.00122.48 N
ATOM 872 CZ ARG A 115 -88.986 18.081 34.133 1.00125.34 C
ATOM 873 NH1 ARG A 115 -89.359 19.020 35.004 1.00127.70 N
ATOM 874 NH2 ARG A 115 -87.984 17.264 34.443 1.00127.43 N
ATOM 875 C ARG A 115 -92.036 16.720 28.783 1.00 53.65 C
ATOM 876 O ARG A 115 -93.050 17.266 28.337 1.00 49.98 O
ATOM 877 N ASP A 116 -92.041 15.485 29.277 1.00 51.47 N
ATOM 878 CA ASP A 116 -93.236 14.655 29.309 1.00 48.89 C
ATOM 879 CB ASP A 116 -92.961 13.289 29.990 1.00 47.46 C
ATOM 880 CG ASP A 116 -92.148 12.355 29.122 1.00 47.82 C
ATOM 881 OD1 ASP A 116 -92.055 12.591 27.900 1.00 49.02 O
ATOM 882 OD2 ASP A 116 -91.595 11.375 29.656 1.00 43.80 O
ATOM 883 C ASP A 116 -94.346 15.301 30.079 1.00 49.22 C
ATOM 884 O ASP A 116 -94.129 15.900 31.117 1.00 55.11 O
ATOM 885 N VAL A 117 -95.551 15.075 29.593 1.00 47.28 N
ATOM 886 CA VAL A 117 -96.743 15.344 30.334 1.00 48.50 C
ATOM 887 CB VAL A 117 -97.980 15.185 29.441 1.00 45.03 C
ATOM 888 CG1 VAL A 117 -99.259 15.303 30.244 1.00 45.83 C

ATOM 889 CG2 VAL A 117 -97.948 16.220 28.317 1.00 47.00 C
ATOM 890 C VAL A 117 -96.731 14.370 31.519 1.00 54.36 C
ATOM 891 O VAL A 117 -96.188 13.276 31.407 1.00 54.93 O
ATOM 892 N ALA A 118 -97.305 14.797 32.642 1.00 52.76 N
ATOM 893 CA ALA A 118 -97.290 14.032 33.873 1.00 55.28 C
ATOM 894 CB ALA A 118 -97.595 14.923 35.110 1.00 54.75 C
ATOM 895 C ALA A 118 -98.258 12.847 33.796 1.00 51.88 C
ATOM 896 O ALA A 118 -99.373 12.973 33.291 1.00 54.39 O
ATOM 897 N PRO A 119 -97.820 11.674 34.278 1.00 48.41 N
ATOM 898 CA PRO A 119 -98.763 10.564 34.421 1.00 48.25 C
ATOM 899 CB PRO A 119 -97.969 9.512 35.206 1.00 48.68 C
ATOM 900 CG PRO A 119 -96.540 9.870 35.031 1.00 49.69 C
ATOM 901 CD PRO A 119 -96.478 11.351 34.794 1.00 49.77 C
ATOM 902 C PRO A 119 -99.960 11.000 35.239 1.00 49.06 C
ATOM 903 O PRO A 119 -99.789 11.619 36.285 1.00 48.12 O
ATOM 904 N GLY A 120 -101.149 10.664 34.775 1.00 53.65 N
ATOM 905 CA GLY A 120 -102.380 11.019 35.466 1.00 54.79 C
ATOM 906 C GLY A 120 -103.043 12.292 34.939 1.00 57.47 C
ATOM 907 O GLY A 120 -104.231 12.510 35.209 1.00 49.47 O
ATOM 908 N THR A 121 -102.296 13.125 34.195 1.00 50.98 N
ATOM 909 CA THR A 121 -102.807 14.402 33.723 1.00 48.20 C
ATOM 910 CB THR A 121 -101.681 15.264 33.085 1.00 52.76 C
ATOM 911 OG1 THR A 121 -100.479 15.166 33.876 1.00 54.01 O
ATOM 912 CG2 THR A 121 -102.049 16.750 33.033 1.00 56.83 C
ATOM 913 C THR A 121 -103.977 14.086 32.774 1.00 51.06 C
ATOM 914 O THR A 121 -103.843 13.225 31.909 1.00 47.06 O
ATOM 915 N LEU A 122 -105.156 14.683 33.025 1.00 56.67 N
ATOM 916 CA LEU A 122 -106.344 14.457 32.189 1.00 63.25 C
ATOM 917 CB LEU A 122 -107.678 14.804 32.873 1.00 72.28 C
ATOM 918 CG LEU A 122 -108.187 14.117 34.158 1.00 78.67 C
ATOM 919 CD1 LEU A 122 -107.747 12.656 34.237 1.00 81.31 C
ATOM 920 CD2 LEU A 122 -107.762 14.882 35.417 1.00 82.25 C
ATOM 921 C LEU A 122 -106.183 15.312 30.945 1.00 60.44 C
ATOM 922 O LEU A 122 -105.871 16.492 31.016 1.00 61.45 O
ATOM 923 N CYS A 123 -106.354 14.684 29.799 1.00 59.61 N
ATOM 924 CA CYS A 123 -106.147 15.343 28.530 1.00 62.55 C
ATOM 925 CB CYS A 123 -104.927 14.781 27.817 1.00 60.55 C

ATOM 926 SG CYS A 123 -103.470 15.125 28.780 1.00 67.80 S
ATOM 927 C CYS A 123 -107.375 15.090 27.735 1.00 55.73 C
ATOM 928 O CYS A 123 -108.117 14.136 28.025 1.00 47.84 O
ATOM 929 N ASP A 124 -107.563 15.937 26.735 1.00 50.06 N
ATOM 930 CA ASP A 124 -108.756 15.904 25.907 1.00 54.82 C
ATOM 931 CB ASP A 124 -109.435 17.299 25.902 1.00 61.47 C
ATOM 932 CG ASP A 124 -110.782 17.295 25.171 1.00 68.54 C
ATOM 933 OD1 ASP A 124 -111.786 16.777 25.758 1.00 78.93 O
ATOM 934 OD2 ASP A 124 -110.819 17.754 24.000 1.00 59.83 O
ATOM 935 C ASP A 124 -108.402 15.486 24.490 1.00 48.87 C
ATOM 936 O ASP A 124 -107.414 16.002 23.906 1.00 43.24 O
ATOM 937 N VAL A 125 -109.224 14.579 23.943 1.00 49.40 N
ATOM 938 CA VAL A 125 -109.081 14.115 22.578 1.00 54.61 C
ATOM 939 CB VAL A 125 -108.771 12.605 22.418 1.00 57.50 C
ATOM 940 CG1 VAL A 125 -107.797 12.417 21.267 1.00 56.12 C
ATOM 941 CG2 VAL A 125 -108.266 11.971 23.688 1.00 61.91 C
ATOM 942 C VAL A 125 -110.406 14.227 21.929 1.00 56.04 C
ATOM 943 O VAL A 125 -111.391 13.723 22.460 1.00 53.02 O
ATOM 944 N ALA A 126 -110.396 14.767 20.722 1.00 56.20 N
ATOM 945 CA ALA A 126 -111.616 14.907 19.933 1.00 60.99 C
ATOM 946 CB ALA A 126 -112.040 16.376 19.921 1.00 58.07 C
ATOM 947 C ALA A 126 -111.469 14.367 18.501 1.00 51.48 C
ATOM 948 O ALA A 126 -110.371 14.351 17.946 1.00 57.80 O
ATOM 949 N GLY A 127 -112.582 13.931 17.907 1.00 54.24 N
ATOM 950 CA GLY A 127 -112.610 13.617 16.474 1.00 53.91 C
ATOM 951 C GLY A 127 -113.916 13.045 15.954 1.00 60.11 C
ATOM 952 O GLY A 127 -114.844 12.736 16.734 1.00 65.33 O
ATOM 953 N TRP A 128 -113.976 12.883 14.629 1.00 60.84 N
ATOM 954 CA TRP A 128 -115.183 12.370 13.938 1.00 66.93 C
ATOM 955 CB TRP A 128 -115.447 13.167 12.649 1.00 61.92 C
ATOM 956 CG TRP A 128 -115.882 14.586 12.864 1.00 62.08 C
ATOM 957 CD1 TRP A 128 -117.152 15.020 13.090 1.00 60.33 C
ATOM 958 NE1 TRP A 128 -117.165 16.384 13.210 1.00 59.29 N
ATOM 959 CE2 TRP A 128 -115.892 16.863 13.056 1.00 60.13 C
ATOM 960 CD2 TRP A 128 -115.056 15.760 12.835 1.00 61.48 C
ATOM 961 CE3 TRP A 128 -113.688 15.987 12.620 1.00 64.27 C
ATOM 962 CZ3 TRP A 128 -113.198 17.305 12.653 1.00 61.34 C

ATOM 963 CH2 TRP A 128 -114.056 18.378 12.898 1.00 62.53 C
ATOM 964 CZ2 TRP A 128 -115.405 18.182 13.090 1.00 65.75 C
ATOM 965 C TRP A 128 -115.052 10.887 13.608 1.00 71.78 C
ATOM 966 O TRP A 128 -115.747 10.368 12.720 1.00 74.24 O
ATOM 967 N GLY A 129 -114.177 10.201 14.346 1.00 81.10 N
ATOM 968 CA GLY A 129 -113.799 8.837 14.038 1.00 79.81 C
ATOM 969 C GLY A 129 -114.891 7.873 14.419 1.00 79.41 C
ATOM 970 O GLY A 129 -115.956 8.283 14.868 1.00 79.00 O
ATOM 971 N ILE A 130 -114.609 6.590 14.230 1.00 77.41 N
ATOM 972 CA ILE A 130 -115.602 5.545 14.392 1.00 81.99 C
ATOM 973 CB ILE A 130 -115.132 4.215 13.744 1.00 87.25 C
ATOM 974 CG1 ILE A 130 -115.283 4.323 12.210 1.00 95.15 C
ATOM 975 CD1 ILE A 130 -114.571 3.259 11.387 1.00 96.59 C
ATOM 976 CG2 ILE A 130 -115.910 3.021 14.287 1.00 88.17 C
ATOM 977 C ILE A 130 -115.908 5.445 15.885 1.00 89.15 C
ATOM 978 O ILE A 130 -114.999 5.571 16.714 1.00 90.65 O
ATOM 979 N VAL A 131 -117.193 5.247 16.202 1.00 91.73 N
ATOM 980 CA VAL A 131 -117.731 5.416 17.560 1.00 92.62 C
ATOM 981 CB VAL A 131 -118.985 6.334 17.512 1.00 94.80 C
ATOM 982 CG1 VAL A 131 -119.848 6.250 18.767 1.00101.46 C
ATOM 983 CG2 VAL A 131 -118.539 7.774 17.302 1.00 87.82 C
ATOM 984 C VAL A 131 -117.976 4.110 18.324 1.00 92.39 C
ATOM 985 O VAL A 131 -118.072 4.144 19.546 1.00 90.83 O
ATOM 986 N ASN A 132 -118.036 2.974 17.622 1.00 98.50 N
ATOM 987 CA ASN A 132 -118.186 1.649 18.255 1.00 99.66 C
ATOM 988 CB ASN A 132 -119.637 1.473 18.704 1.00101.34 C
ATOM 989 CG ASN A 132 -120.619 1.771 17.592 1.00101.50 C
ATOM 990 OD1 ASN A 132 -121.056 2.908 17.435 1.00 98.83 O
ATOM 991 ND2 ASN A 132 -120.936 0.762 16.790 1.00100.49 N
ATOM 992 C ASN A 132 -117.747 0.542 17.272 1.00105.76 C
ATOM 993 O ASN A 132 -117.179 0.858 16.209 1.00 91.06 O
ATOM 994 N HIS A 133 -117.990 -0.730 17.626 1.00109.38 N
ATOM 995 CA HIS A 133 -117.575 -1.889 16.800 1.00114.44 C
ATOM 996 CB HIS A 133 -117.759 -3.221 17.563 1.00121.07 C
ATOM 997 CG HIS A 133 -117.091 -4.401 16.913 1.00127.04 C
ATOM 998 ND1 HIS A 133 -115.830 -4.835 17.269 1.00129.37 N
ATOM 999 CE1 HIS A 133 -115.504 -5.889 16.540 1.00127.51 C

ATOM 1000 NE2 HIS A 133 -116.506 -6.155 15.722 1.00128.97 N
ATOM 1001 CD2 HIS A 133 -117.514 -5.243 15.938 1.00129.88 C
ATOM 1002 C HIS A 133 -118.316 -1.955 15.460 1.00108.21 C
ATOM 1003 O HIS A 133 -117.682 -2.149 14.413 1.00 96.16 O
ATOM 1004 N ALA A 134 -119.644 -1.799 15.500 1.00 99.61 N
ATOM 1005 CA ALA A 134 -120.481 -1.779 14.275 1.00104.89 C
ATOM 1006 CB ALA A 134 -121.930 -1.381 14.585 1.00 98.57 C
ATOM 1007 C ALA A 134 -119.893 -0.872 13.176 1.00106.12 C
ATOM 1008 O ALA A 134 -119.879 -1.248 12.002 1.00108.68 O
ATOM 1009 N GLY A 135 -119.381 0.291 13.582 1.00 99.79 N
ATOM 1010 CA GLY A 135 -118.715 1.229 12.682 1.00 95.42 C
ATOM 1011 C GLY A 135 -119.447 2.545 12.479 1.00 90.48 C
ATOM 1012 O GLY A 135 -119.318 3.149 11.401 1.00 82.60 O
ATOM 1013 N ARG A 136 -120.183 3.010 13.502 1.00 86.53 N
ATOM 1014 CA ARG A 136 -121.030 4.196 13.361 1.00 90.56 C
ATOM 1015 CB ARG A 136 -121.988 4.398 14.552 1.00 97.55 C
ATOM 1016 CG ARG A 136 -123.199 5.290 14.224 1.00107.72 C
ATOM 1017 CD ARG A 136 -123.643 6.229 15.352 1.00107.10 C
ATOM 1018 NE ARG A 136 -123.905 5.530 16.616 1.00110.97 N
ATOM 1019 CZ ARG A 136 -124.169 6.118 17.791 1.00113.27 C
ATOM 1020 NH1 ARG A 136 -124.236 7.449 17.905 1.00109.18 N
ATOM 1021 NH2 ARG A 136 -124.371 5.365 18.875 1.00109.93 N
ATOM 1022 C ARG A 136 -120.148 5.429 13.186 1.00 93.22 C
ATOM 1023 O ARG A 136 -119.353 5.770 14.070 1.00 92.65 O
ATOM 1024 N ARG A 137 -120.279 6.062 12.022 1.00 87.64 N
ATOM 1025 CA ARG A 137 -119.597 7.310 11.721 1.00 91.46 C
ATOM 1026 CB ARG A 137 -119.295 7.386 10.220 1.00 99.03 C
ATOM 1027 CG ARG A 137 -118.384 6.263 9.694 1.00102.75 C
ATOM 1028 CD ARG A 137 -117.969 6.446 8.229 1.00104.18 C
ATOM 1029 NE ARG A 137 -117.452 7.804 7.965 1.00109.21 N
ATOM 1030 CZ ARG A 137 -118.127 8.831 7.413 1.00107.97 C
ATOM 1031 NH1 ARG A 137 -119.401 8.707 7.002 1.00 96.57 N
ATOM 1032 NH2 ARG A 137 -117.512 10.017 7.269 1.00 96.72 N
ATOM 1033 C ARG A 137 -120.471 8.506 12.187 1.00 89.34 C
ATOM 1034 O ARG A 137 -121.546 8.752 11.638 1.00 85.07 O
ATOM 1035 N PRO A 138 -120.016 9.246 13.213 1.00 87.17 N
ATOM 1036 CA PRO A 138 -120.817 10.337 13.763 1.00 84.11 C

ATOM 1037 CB PRO A 138 -120.129 10.639 15.095 1.00 84.42 C
ATOM 1038 CG PRO A 138 -118.689 10.324 14.830 1.00 91.46 C
ATOM 1039 CD PRO A 138 -118.677 9.191 13.829 1.00 88.50 C
ATOM 1040 C PRO A 138 -120.778 11.582 12.888 1.00 85.03 C
ATOM 1041 O PRO A 138 -119.704 11.979 12.411 1.00 76.42 O
ATOM 1042 N ASP A 139 -121.938 12.208 12.704 1.00 83.14 N
ATOM 1043 CA ASP A 139 -121.994 13.462 11.983 1.00 74.67 C
ATOM 1044 CB ASP A 139 -123.444 13.883 11.716 1.00 76.89 C
ATOM 1045 CG ASP A 139 -123.526 15.186 10.949 1.00 79.26 C
ATOM 1046 OD1 ASP A 139 -122.910 15.281 9.847 1.00 79.59 O
ATOM 1047 OD2 ASP A 139 -124.163 16.127 11.479 1.00 76.70 O
ATOM 1048 C ASP A 139 -121.237 14.572 12.716 1.00 68.77 C
ATOM 1049 O ASP A 139 -120.606 15.419 12.070 1.00 66.36 O
ATOM 1050 N SER A 140 -121.286 14.554 14.051 1.00 70.22 N
ATOM 1051 CA SER A 140 -120.829 15.679 14.871 1.00 75.01 C
ATOM 1052 CB SER A 140 -122.021 16.211 15.689 1.00 80.31 C
ATOM 1053 OG SER A 140 -122.996 16.815 14.829 1.00 78.98 O
ATOM 1054 C SER A 140 -119.622 15.350 15.785 1.00 70.97 C
ATOM 1055 O SER A 140 -119.506 14.243 16.327 1.00 70.92 O
ATOM 1056 N LEU A 141 -118.747 16.340 15.954 1.00 66.76 N
ATOM 1057 CA LEU A 141 -117.522 16.215 16.734 1.00 66.39 C
ATOM 1058 CB LEU A 141 -116.860 17.588 16.938 1.00 66.77 C
ATOM 1059 CG LEU A 141 -115.446 17.605 17.558 1.00 74.79 C
ATOM 1060 CD1 LEU A 141 -114.417 17.089 16.551 1.00 70.92 C
ATOM 1061 CD2 LEU A 141 -115.022 18.987 18.065 1.00 70.02 C
ATOM 1062 C LEU A 141 -117.789 15.546 18.085 1.00 73.42 C
ATOM 1063 O LEU A 141 -118.616 16.020 18.875 1.00 74.80 O
ATOM 1064 N GLN A 142 -117.115 14.419 18.317 1.00 77.50 N
ATOM 1065 CA GLN A 142 -117.167 13.703 19.593 1.00 72.64 C
ATOM 1066 CB GLN A 142 -117.327 12.219 19.325 1.00 76.22 C
ATOM 1067 CG GLN A 142 -118.692 11.874 18.744 1.00 82.09 C
ATOM 1068 CD GLN A 142 -119.702 11.450 19.789 1.00 86.94 C
ATOM 1069 OE1 GLN A 142 -120.844 11.896 19.767 1.00101.57 O
ATOM 1070 NE2 GLN A 142 -119.294 10.565 20.698 1.00 89.47 N
ATOM 1071 C GLN A 142 -115.902 14.005 20.400 1.00 69.58 C
ATOM 1072 O GLN A 142 -114.928 14.540 19.853 1.00 63.75 O
ATOM 1073 N HIS A 143 -115.919 13.715 21.703 1.00 70.67 N

ATOM 1074 CA HIS A 143 -114.714 13.924 22.529 1.00 67.44 C
ATOM 1075 CB HIS A 143 -114.528 15.407 22.906 1.00 67.71 C
ATOM 1076 CG HIS A 143 -115.317 15.854 24.104 1.00 80.02 C
ATOM 1077 ND1 HIS A 143 -114.717 16.243 25.288 1.00 83.40 N
ATOM 1078 CE1 HIS A 143 -115.647 16.585 26.161 1.00 80.85 C
ATOM 1079 NE2 HIS A 143 -116.829 16.432 25.589 1.00 87.28 N
ATOM 1080 CD2 HIS A 143 -116.652 15.986 24.299 1.00 78.26 C
ATOM 1081 C HIS A 143 -114.658 13.014 23.748 1.00 62.74 C
ATOM 1082 O HIS A 143 -115.665 12.436 24.133 1.00 66.69 O
ATOM 1083 N VAL A 144 -113.451 12.855 24.301 1.00 63.60 N
ATOM 1084 CA VAL A 144 -113.229 12.139 25.562 1.00 64.62 C
ATOM 1085 CB VAL A 144 -112.839 10.653 25.408 1.00 69.41 C
ATOM 1086 CG1 VAL A 144 -114.066 9.790 25.269 1.00 79.39 C
ATOM 1087 CG2 VAL A 144 -111.861 10.442 24.259 1.00 66.98 C
ATOM 1088 C VAL A 144 -112.086 12.744 26.328 1.00 65.91 C
ATOM 1089 O VAL A 144 -111.189 13.373 25.748 1.00 65.20 O
ATOM 1090 N LEU A 145 -112.121 12.462 27.630 1.00 62.76 N
ATOM 1091 CA LEU A 145 -111.129 12.880 28.590 1.00 64.50 C
ATOM 1092 CB LEU A 145 -111.827 13.624 29.724 1.00 66.40 C
ATOM 1093 CG LEU A 145 -111.050 14.797 30.284 1.00 71.48 C
ATOM 1094 CD1 LEU A 145 -110.839 15.860 29.209 1.00 71.96 C
ATOM 1095 CD2 LEU A 145 -111.797 15.349 31.493 1.00 77.28 C
ATOM 1096 C LEU A 145 -110.375 11.651 29.129 1.00 61.09 C
ATOM 1097 O LEU A 145 -110.980 10.739 29.690 1.00 66.12 O
ATOM 1098 N LEU A 146 -109.053 11.638 28.945 1.00 58.90 N
ATOM 1099 CA LEU A 146 -108.250 10.436 29.157 1.00 56.35 C
ATOM 1100 CB LEU A 146 -107.679 9.923 27.834 1.00 60.42 C
ATOM 1101 CG LEU A 146 -108.573 9.349 26.742 1.00 68.24 C
ATOM 1102 CD1 LEU A 146 -107.698 8.764 25.621 1.00 68.20 C
ATOM 1103 CD2 LEU A 146 -109.543 8.312 27.284 1.00 72.26 C
ATOM 1104 C LEU A 146 -107.086 10.761 30.071 1.00 51.19 C
ATOM 1105 O LEU A 146 -106.462 11.811 29.921 1.00 55.46 O
ATOM 1106 N PRO A 147 -106.785 9.872 31.021 1.00 44.56 N
ATOM 1107 CA PRO A 147 -105.550 10.056 31.806 1.00 45.87 C
ATOM 1108 CB PRO A 147 -105.788 9.207 33.079 1.00 45.24 C
ATOM 1109 CG PRO A 147 -106.960 8.316 32.807 1.00 44.04 C
ATOM 1110 CD PRO A 147 -107.614 8.744 31.505 1.00 47.79 C

ATOM 1111 C PRO A 147 -104.325 9.556 31.028 1.00 46.79 C
ATOM 1112 O PRO A 147 -104.380 8.517 30.403 1.00 55.91 O
ATOM 1113 N VAL A 148 -103.248 10.318 31.060 1.00 46.08 N
ATOM 1114 CA VAL A 148 -101.979 9.936 30.475 1.00 46.62 C
ATOM 1115 CB VAL A 148 -101.000 11.144 30.458 1.00 49.57 C
ATOM 1116 CG1 VAL A 148 -99.552 10.745 30.197 1.00 47.56 C
ATOM 1117 CG2 VAL A 148 -101.475 12.168 29.440 1.00 55.30 C
ATOM 1118 C VAL A 148 -101.402 8.763 31.286 1.00 49.55 C
ATOM 1119 O VAL A 148 -101.558 8.684 32.490 1.00 50.50 O
ATOM 1120 N LEU A 149 -100.741 7.856 30.586 1.00 47.73 N
ATOM 1121 CA LEU A 149 -100.193 6.667 31.156 1.00 46.20 C
ATOM 1122 CB LEU A 149 -100.676 5.486 30.346 1.00 47.42 C
ATOM 1123 CG LEU A 149 -100.668 4.082 30.927 1.00 50.29 C
ATOM 1124 CD1 LEU A 149 -99.449 3.367 30.394 1.00 51.90 C
ATOM 1125 CD2 LEU A 149 -100.767 3.982 32.454 1.00 46.97 C
ATOM 1126 C LEU A 149 -98.695 6.819 31.061 1.00 49.71 C
ATOM 1127 O LEU A 149 -98.185 7.285 30.029 1.00 53.31 O
ATOM 1128 N ASP A 150 -97.996 6.441 32.131 1.00 40.14 N
ATOM 1129 CA ASP A 150 -96.592 6.662 32.208 1.00 38.54 C
ATOM 1130 CB ASP A 150 -96.086 6.417 33.640 1.00 37.39 C
ATOM 1131 CG ASP A 150 -96.024 4.939 34.013 1.00 41.00 C
ATOM 1132 OD1 ASP A 150 -97.011 4.333 34.525 1.00 37.74 O
ATOM 1133 OD2 ASP A 150 -94.934 4.374 33.809 1.00 45.62 O
ATOM 1134 C ASP A 150 -95.914 5.749 31.184 1.00 37.99 C
ATOM 1135 O ASP A 150 -96.360 4.618 30.948 1.00 42.32 O
ATOM 1136 N ARG A 151 -94.824 6.230 30.614 1.00 34.66 N
ATOM 1137 CA ARG A 151 -94.132 5.516 29.571 1.00 36.76 C
ATOM 1138 CB ARG A 151 -92.979 6.349 28.995 1.00 33.35 C
ATOM 1139 CG ARG A 151 -92.505 5.716 27.703 1.00 37.25 C
ATOM 1140 CD ARG A 151 -91.498 6.527 26.892 1.00 39.40 C
ATOM 1141 NE ARG A 151 -92.081 7.761 26.385 1.00 40.30 N
ATOM 1142 CZ ARG A 151 -92.033 8.948 26.989 1.00 37.48 C
ATOM 1143 NH1 ARG A 151 -91.447 9.122 28.179 1.00 36.27 N
ATOM 1144 NH2 ARG A 151 -92.594 9.978 26.389 1.00 38.98 N
ATOM 1145 C ARG A 151 -93.630 4.105 29.975 1.00 36.10 C
ATOM 1146 O ARG A 151 -93.698 3.172 29.184 1.00 38.15 O
ATOM 1147 N ALA A 152 -93.120 3.959 31.180 1.00 33.21 N

ATOM 1148 CA ALA A 152 -92.684 2.662 31.667 1.00 32.89 C
ATOM 1149 CB ALA A 152 -92.070 2.801 33.039 1.00 34.96 C
ATOM 1150 C ALA A 152 -93.806 1.613 31.657 1.00 33.41 C
ATOM 1151 O ALA A 152 -93.645 0.508 31.106 1.00 32.91 O
ATOM 1152 N THR A 153 -94.953 1.969 32.211 1.00 34.37 N
ATOM 1153 CA THR A 153 -96.129 1.094 32.119 1.00 35.51 C
ATOM 1154 CB THR A 153 -97.290 1.672 32.916 1.00 34.55 C
ATOM 1155 OG1 THR A 153 -96.854 1.855 34.273 1.00 33.00 O
ATOM 1156 CG2 THR A 153 -98.466 0.753 32.881 1.00 34.32 C
ATOM 1157 C THR A 153 -96.538 0.833 30.679 1.00 35.02 C
ATOM 1158 O THR A 153 -96.790 -0.311 30.317 1.00 37.14 O
ATOM 1159 N CYS A 154 -96.551 1.875 29.847 1.00 35.31 N
ATOM 1160 CA CYS A 154 -96.901 1.704 28.426 1.00 39.47 C
ATOM 1161 CB CYS A 154 -97.012 3.072 27.706 1.00 41.76 C
ATOM 1162 SG CYS A 154 -98.179 3.012 26.309 1.00 47.61 S
ATOM 1163 C CYS A 154 -95.933 0.758 27.646 1.00 38.12 C
ATOM 1164 O CYS A 154 -96.307 0.166 26.601 1.00 40.40 O
ATOM 1165 N ASN A 155 -94.718 0.622 28.166 1.00 35.25 N
ATOM 1166 CA ASN A 155 -93.687 -0.262 27.619 1.00 36.44 C
ATOM 1167 CB ASN A 155 -92.305 0.403 27.747 1.00 34.61 C
ATOM 1168 CG ASN A 155 -91.936 1.318 26.554 1.00 37.37 C
ATOM 1169 OD1 ASN A 155 -91.179 2.347 26.711 1.00 33.80 O
ATOM 1170 ND2 ASN A 155 -92.346 0.909 25.371 1.00 30.22 N
ATOM 1171 C ASN A 155 -93.644 -1.684 28.224 1.00 34.42 C
ATOM 1172 O ASN A 155 -92.855 -2.501 27.810 1.00 34.12 O
ATOM 1173 N ARG A 156 -94.509 -1.997 29.163 1.00 36.86 N
ATOM 1174 CA ARG A 156 -94.572 -3.360 29.680 1.00 39.18 C
ATOM 1175 CB ARG A 156 -95.626 -3.491 30.797 1.00 40.08 C
ATOM 1176 CG ARG A 156 -95.263 -2.807 32.110 1.00 43.55 C
ATOM 1177 CD ARG A 156 -95.986 -3.374 33.334 1.00 37.13 C
ATOM 1178 NE ARG A 156 -95.212 -4.512 33.747 1.00 39.98 N
ATOM 1179 CZ ARG A 156 -95.087 -4.992 34.980 1.00 41.29 C
ATOM 1180 NH1 ARG A 156 -94.247 -6.010 35.176 1.00 34.79 N
ATOM 1181 NH2 ARG A 156 -95.763 -4.481 36.012 1.00 40.06 N
ATOM 1182 C ARG A 156 -94.904 -4.361 28.567 1.00 37.40 C
ATOM 1183 O ARG A 156 -95.549 -4.030 27.593 1.00 39.57 O
ATOM 1184 N ARG A 157 -94.463 -5.586 28.765 1.00 40.16 N

ATOM 1185 CA ARG A 157 -94.753 -6.765 27.928 1.00 38.15 C
ATOM 1186 CB ARG A 157 -94.417 -8.014 28.749 1.00 37.95 C
ATOM 1187 CG ARG A 157 -94.761 -9.322 28.099 1.00 40.92 C
ATOM 1188 CD ARG A 157 -94.425 -10.471 29.026 1.00 38.56 C
ATOM 1189 NE ARG A 157 -93.003 -10.758 28.945 1.00 36.92 N
ATOM 1190 CZ ARG A 157 -92.097 -10.522 29.884 1.00 37.87 C
ATOM 1191 NH1 ARG A 157 -92.444 -9.952 31.029 1.00 35.28 N
ATOM 1192 NH2 ARG A 157 -90.810 -10.876 29.657 1.00 37.77 N
ATOM 1193 C ARG A 157 -96.180 -6.866 27.426 1.00 38.70 C
ATOM 1194 O ARG A 157 -96.424 -7.155 26.250 1.00 39.41 O
ATOM 1195 N THR A 158 -97.111 -6.600 28.330 1.00 37.49 N
ATOM 1196 CA THR A 158 -98.522 -6.772 28.106 1.00 36.28 C
ATOM 1197 CB THR A 158 -99.214 -6.962 29.451 1.00 40.36 C
ATOM 1198 OG1 THR A 158 -98.955 -5.806 30.230 1.00 44.31 O
ATOM 1199 CG2 THR A 158 -98.684 -8.216 30.232 1.00 43.19 C
ATOM 1200 C THR A 158 -99.189 -5.568 27.500 1.00 35.49 C
ATOM 1201 O THR A 158 -100.408 -5.561 27.341 1.00 37.92 O
ATOM 1202 N HIS A 159 -98.435 -4.502 27.272 1.00 38.98 N
ATOM 1203 CA HIS A 159 -98.984 -3.245 26.741 1.00 39.07 C
ATOM 1204 CB HIS A 159 -98.772 -2.100 27.706 1.00 40.93 C
ATOM 1205 CG HIS A 159 -99.581 -2.178 28.966 1.00 43.98 C
ATOM 1206 ND1 HIS A 159 -99.312 -3.088 29.969 1.00 44.79 N
ATOM 1207 CE1 HIS A 159 -100.149 -2.887 30.973 1.00 43.90 C
ATOM 1208 NE2 HIS A 159 -100.909 -1.849 30.681 1.00 44.92 N
ATOM 1209 CD2 HIS A 159 -100.576 -1.388 29.434 1.00 42.54 C
ATOM 1210 C HIS A 159 -98.318 -2.988 25.389 1.00 37.73 C
ATOM 1211 O HIS A 159 -98.655 -3.687 24.474 1.00 44.26 O
ATOM 1212 N HIS A 160 -97.380 -2.049 25.238 1.00 39.19 N
ATOM 1213 CA HIS A 160 -96.701 -1.868 23.931 1.00 41.30 C
ATOM 1214 CB HIS A 160 -96.864 -0.453 23.388 1.00 36.92 C
ATOM 1215 CG HIS A 160 -98.281 -0.125 23.074 1.00 38.96 C
ATOM 1216 ND1 HIS A 160 -98.985 -0.792 22.096 1.00 38.63 N
ATOM 1217 CE1 HIS A 160 -100.220 -0.306 22.051 1.00 40.86 C
ATOM 1218 NE2 HIS A 160 -100.353 0.614 22.996 1.00 37.77 N
ATOM 1219 CD2 HIS A 160 -99.151 0.755 23.642 1.00 39.22 C
ATOM 1220 C HIS A 160 -95.261 -2.358 23.875 1.00 43.82 C
ATOM 1221 O HIS A 160 -94.605 -2.243 22.825 1.00 42.86 O

ATOM 1222 N ASP A 161 -94.789 -2.935 24.981 1.00 41.48 N
ATOM 1223 CA ASP A 161 -93.677 -3.878 24.922 1.00 39.68 C
ATOM 1224 CB ASP A 161 -94.144 -5.146 24.214 1.00 38.18 C
ATOM 1225 CG ASP A 161 -93.170 -6.337 24.346 1.00 41.97 C
ATOM 1226 OD1 ASP A 161 -92.367 -6.413 25.321 1.00 35.73 O
ATOM 1227 OD2 ASP A 161 -93.240 -7.194 23.430 1.00 47.44 O
ATOM 1228 C ASP A 161 -92.422 -3.323 24.259 1.00 36.64 C
ATOM 1229 O ASP A 161 -91.838 -3.962 23.435 1.00 38.39 O
ATOM 1230 N GLY A 162 -91.983 -2.157 24.692 1.00 37.22 N
ATOM 1231 CA GLY A 162 -90.664 -1.614 24.320 1.00 37.54 C
ATOM 1232 C GLY A 162 -90.679 -0.651 23.135 1.00 38.55 C
ATOM 1233 O GLY A 162 -89.634 -0.130 22.760 1.00 39.32 O
ATOM 1234 N ALA A 163 -91.849 -0.439 22.547 1.00 36.55 N
ATOM 1235 CA ALA A 163 -92.019 0.329 21.299 1.00 40.85 C
ATOM 1236 CB ALA A 163 -93.073 -0.367 20.399 1.00 41.30 C
ATOM 1237 C ALA A 163 -92.412 1.806 21.491 1.00 37.51 C
ATOM 1238 O ALA A 163 -92.507 2.520 20.537 1.00 39.82 O
ATOM 1239 N ILE A 164 -92.691 2.227 22.709 1.00 37.97 N
ATOM 1240 CA ILE A 164 -92.940 3.621 23.039 1.00 36.02 C
ATOM 1241 CB ILE A 164 -93.846 3.723 24.269 1.00 37.47 C
ATOM 1242 CG1 ILE A 164 -95.085 2.823 24.089 1.00 37.99 C
ATOM 1243 CD1 ILE A 164 -95.948 3.154 22.882 1.00 38.94 C
ATOM 1244 CG2 ILE A 164 -94.285 5.173 24.533 1.00 36.28 C
ATOM 1245 C ILE A 164 -91.619 4.325 23.345 1.00 37.89 C
ATOM 1246 O ILE A 164 -91.072 4.172 24.433 1.00 38.06 O
ATOM 1247 N THR A 165 -91.110 5.068 22.358 1.00 36.92 N
ATOM 1248 CA THR A 165 -89.931 5.934 22.474 1.00 35.49 C
ATOM 1249 CB THR A 165 -89.470 6.453 21.072 1.00 37.08 C
ATOM 1250 OG1 THR A 165 -90.471 7.357 20.540 1.00 39.08 O
ATOM 1251 CG2 THR A 165 -89.174 5.264 20.058 1.00 32.31 C
ATOM 1252 C THR A 165 -90.233 7.190 23.260 1.00 36.54 C
ATOM 1253 O THR A 165 -91.382 7.479 23.610 1.00 39.42 O
ATOM 1254 N GLU A 166 -89.198 7.982 23.461 1.00 41.57 N
ATOM 1255 CA GLU A 166 -89.307 9.316 24.087 1.00 42.31 C
ATOM 1256 CB GLU A 166 -87.914 9.872 24.389 1.00 42.51 C
ATOM 1257 CG GLU A 166 -87.121 10.284 23.136 1.00 48.49 C
ATOM 1258 CD GLU A 166 -85.736 10.809 23.436 1.00 52.57 C

ATOM 1259 OE1 GLU A 166 -85.025 11.111 22.471 1.00 68.31 O
ATOM 1260 OE2 GLU A 166 -85.347 10.911 24.614 1.00 60.08 O
ATOM 1261 C GLU A 166 -90.099 10.321 23.230 1.00 40.20 C
ATOM 1262 O GLU A 166 -90.447 11.406 23.691 1.00 41.74 O
ATOM 1263 N ARG A 167 -90.418 9.957 22.004 1.00 42.18 N
ATOM 1264 CA ARG A 167 -91.214 10.824 21.123 1.00 42.29 C
ATOM 1265 CB ARG A 167 -90.636 10.788 19.732 1.00 44.52 C
ATOM 1266 CG ARG A 167 -89.166 11.168 19.718 1.00 51.08 C
ATOM 1267 CD ARG A 167 -88.525 10.722 18.435 1.00 60.00 C
ATOM 1268 NE ARG A 167 -87.110 11.040 18.451 1.00 66.76 N
ATOM 1269 CZ ARG A 167 -86.551 12.067 17.826 1.00 83.18 C
ATOM 1270 NH1 ARG A 167 -87.280 12.925 17.086 1.00 85.65 N
ATOM 1271 NH2 ARG A 167 -85.233 12.231 17.945 1.00 85.89 N
ATOM 1272 C ARG A 167 -92.649 10.452 21.049 1.00 40.44 C
ATOM 1273 O ARG A 167 -93.378 11.062 20.284 1.00 44.80 O
ATOM 1274 N LEU A 168 -93.070 9.448 21.816 1.00 38.87 N
ATOM 1275 CA LEU A 168 -94.488 9.082 21.890 1.00 39.68 C
ATOM 1276 CB LEU A 168 -94.696 7.650 21.381 1.00 38.73 C
ATOM 1277 CG LEU A 168 -94.091 7.367 19.998 1.00 37.78 C
ATOM 1278 CD1 LEU A 168 -94.190 5.892 19.623 1.00 38.01 C
ATOM 1279 CD2 LEU A 168 -94.800 8.227 18.964 1.00 40.33 C
ATOM 1280 C LEU A 168 -94.931 9.150 23.305 1.00 40.26 C
ATOM 1281 O LEU A 168 -94.121 9.098 24.213 1.00 47.19 O
ATOM 1282 N MET A 169 -96.227 9.213 23.507 1.00 42.33 N
ATOM 1283 CA MET A 169 -96.805 9.190 24.854 1.00 43.68 C
ATOM 1284 CB MET A 169 -97.133 10.608 25.340 1.00 44.85 C
ATOM 1285 CG MET A 169 -98.267 11.274 24.568 1.00 43.87 C
ATOM 1286 SD MET A 169 -98.468 12.987 25.046 1.00 51.13 S
ATOM 1287 CE MET A 169 -99.468 12.729 26.512 1.00 46.53 C
ATOM 1288 C MET A 169 -98.070 8.373 24.764 1.00 41.51 C
ATOM 1289 O MET A 169 -98.524 8.043 23.630 1.00 39.03 O
ATOM 1290 N CYS A 170 -98.661 8.091 25.929 1.00 40.53 N
ATOM 1291 CA CYS A 170 -99.794 7.137 26.020 1.00 41.84 C
ATOM 1292 CB CYS A 170 -99.274 5.822 26.565 1.00 43.86 C
ATOM 1293 SG CYS A 170 -98.116 4.906 25.497 1.00 45.27 S
ATOM 1294 C CYS A 170 -100.911 7.615 26.914 1.00 41.81 C
ATOM 1295 O CYS A 170 -100.674 8.371 27.866 1.00 40.25 O

ATOM 1296 N ALA A 171 -102.124 7.155 26.631 1.00 48.35 N
ATOM 1297 CA ALA A 171 -103.266 7.358 27.522 1.00 54.95 C
ATOM 1298 CB ALA A 171 -104.150 8.463 26.991 1.00 60.87 C
ATOM 1299 C ALA A 171 -104.099 6.092 27.734 1.00 63.71 C
ATOM 1300 O ALA A 171 -104.254 5.324 26.802 1.00 59.78 O
ATOM 1301 N GLU A 172 -104.671 5.956 28.948 1.00 74.49 N
ATOM 1302 CA GLU A 172 -105.343 4.746 29.463 1.00 81.92 C
ATOM 1303 CB GLU A 172 -105.546 4.817 30.995 1.00 91.12 C
ATOM 1304 CG GLU A 172 -104.403 4.264 31.841 1.00 99.10 C
ATOM 1305 CD GLU A 172 -104.885 3.438 33.031 1.00 99.78 C
ATOM 1306 OE1 GLU A 172 -104.375 2.305 33.225 1.00 90.66 O
ATOM 1307 OE2 GLU A 172 -105.780 3.922 33.764 1.00103.12 O
ATOM 1308 C GLU A 172 -106.713 4.531 28.891 1.00 95.49 C
ATOM 1309 O GLU A 172 -107.631 5.294 29.192 1.00 90.29 O
ATOM 1310 N SER A 173 -106.875 3.433 28.156 1.00119.09 N
ATOM 1311 CA SER A 173 -108.157 3.102 27.518 1.00129.08 C
ATOM 1312 CB SER A 173 -108.000 1.865 26.593 1.00124.01 C
ATOM 1313 OG SER A 173 -109.032 1.789 25.625 1.00115.70 O
ATOM 1314 C SER A 173 -109.323 2.963 28.552 1.00134.15 C
ATOM 1315 O SER A 173 -109.997 3.955 28.845 1.00132.34 O
ATOM 1316 N ASN A 174 -109.498 1.776 29.146 1.00132.79 N
ATOM 1317 CA ASN A 174 -110.713 1.393 29.910 1.00117.25 C
ATOM 1318 CB ASN A 174 -110.533 1.618 31.435 1.00112.07 C
ATOM 1319 CG ASN A 174 -110.492 0.298 32.222 1.00109.72 C
ATOM 1320 OD1 ASN A 174 -109.587 -0.517 32.052 1.00 98.68 O
ATOM 1321 ND2 ASN A 174 -111.485 0.084 33.077 1.00102.48 N
ATOM 1322 C ASN A 174 -112.035 1.977 29.360 1.00 99.57 C
ATOM 1323 O ASN A 174 -112.569 2.960 29.875 1.00 92.56 O
ATOM 1324 N ARG A 175 -112.519 1.360 28.278 1.00 91.08 N
ATOM 1325 CA ARG A 175 -113.811 1.682 27.640 1.00 94.26 C
ATOM 1326 CB ARG A 175 -114.997 1.457 28.621 1.00 97.53 C
ATOM 1327 CG ARG A 175 -115.592 0.065 28.487 1.00104.27 C
ATOM 1328 CD ARG A 175 -116.519 -0.354 29.619 1.00107.67 C
ATOM 1329 NE ARG A 175 -116.616 -1.823 29.653 1.00118.64 N
ATOM 1330 CZ ARG A 175 -117.619 -2.538 30.177 1.00119.28 C
ATOM 1331 NH1 ARG A 175 -118.674 -1.948 30.755 1.00123.57 N
ATOM 1332 NH2 ARG A 175 -117.563 -3.872 30.120 1.00101.51 N

ATOM 1333 C ARG A 175 -113.919 3.051 26.935 1.00 90.85 C
ATOM 1334 O ARG A 175 -114.996 3.383 26.430 1.00 85.86 O
ATOM 1335 N ARG A 176 -112.817 3.809 26.880 1.00 88.19 N
ATOM 1336 CA ARG A 176 -112.731 5.100 26.178 1.00 93.40 C
ATOM 1337 CB ARG A 176 -112.716 6.261 27.183 1.00100.04 C
ATOM 1338 CG ARG A 176 -114.073 6.647 27.784 1.00105.24 C
ATOM 1339 CD ARG A 176 -114.326 6.112 29.197 1.00110.12 C
ATOM 1340 NE ARG A 176 -114.976 7.114 30.054 1.00110.09 N
ATOM 1341 CZ ARG A 176 -114.367 8.163 30.624 1.00105.51 C
ATOM 1342 NH1 ARG A 176 -113.058 8.394 30.461 1.00 97.21 N
ATOM 1343 NH2 ARG A 176 -115.080 9.006 31.366 1.00103.82 N
ATOM 1344 C ARG A 176 -111.440 5.147 25.334 1.00 96.61 C
ATOM 1345 O ARG A 176 -110.348 4.945 25.874 1.00101.36 O
ATOM 1346 N ASP A 177 -111.549 5.411 24.028 1.00 86.50 N
ATOM 1347 CA ASP A 177 -110.350 5.503 23.181 1.00 88.58 C
ATOM 1348 CB ASP A 177 -109.802 4.097 22.877 1.00 90.07 C
ATOM 1349 CG ASP A 177 -108.303 4.096 22.551 1.00 89.59 C
ATOM 1350 OD1 ASP A 177 -107.518 4.885 23.151 1.00 86.89 O
ATOM 1351 OD2 ASP A 177 -107.913 3.295 21.678 1.00 97.80 O
ATOM 1352 C ASP A 177 -110.562 6.259 21.868 1.00 80.33 C
ATOM 1353 O ASP A 177 -111.682 6.545 21.489 1.00 80.98 O
ATOM 1354 N SER A 178 -109.454 6.623 21.230 1.00 75.41 N
ATOM 1355 CA SER A 178 -109.399 6.930 19.798 1.00 76.49 C
ATOM 1356 CB SER A 178 -108.038 7.536 19.434 1.00 81.46 C
ATOM 1357 OG SER A 178 -106.959 6.822 20.043 1.00 84.14 O
ATOM 1358 C SER A 178 -109.639 5.663 18.975 1.00 76.72 C
ATOM 1359 O SER A 178 -109.441 4.551 19.461 1.00 86.05 O
ATOM 1360 N CYS A 179 -110.076 5.851 17.734 1.00 73.91 N
ATOM 1361 CA CYS A 179 -110.516 4.770 16.844 1.00 79.42 C
ATOM 1362 CB CYS A 179 -112.018 4.512 17.069 1.00 83.09 C
ATOM 1363 SG CYS A 179 -112.355 3.571 18.593 1.00 91.96 S
ATOM 1364 C CYS A 179 -110.159 5.127 15.378 1.00 78.67 C
ATOM 1365 O CYS A 179 -109.355 6.029 15.156 1.00 74.00 O
ATOM 1366 N LYS A 180 -110.698 4.420 14.385 1.00 78.48 N
ATOM 1367 CA LYS A 180 -110.357 4.705 12.985 1.00 84.31 C
ATOM 1368 CB LYS A 180 -110.747 3.548 12.053 1.00 92.62 C
ATOM 1369 CG LYS A 180 -109.953 3.557 10.750 1.00105.30 C

ATOM 1370 CD LYS A 180 -110.715 2.992 9.558 1.00110.20 C
ATOM 1371 CE LYS A 180 -110.042 3.385 8.245 1.00112.77 C
ATOM 1372 NZ LYS A 180 -110.851 3.000 7.055 1.00113.83 N
ATOM 1373 C LYS A 180 -111.030 6.002 12.532 1.00 78.31 C
ATOM 1374 O LYS A 180 -112.220 6.184 12.741 1.00 77.00 O
ATOM 1375 N GLY A 181 -110.261 6.900 11.920 1.00 69.25 N
ATOM 1376 CA GLY A 181 -110.761 8.232 11.573 1.00 74.06 C
ATOM 1377 C GLY A 181 -110.444 9.341 12.579 1.00 70.59 C
ATOM 1378 O GLY A 181 -110.598 10.524 12.262 1.00 65.88 O
ATOM 1379 N ASP A 182 -110.002 8.969 13.784 1.00 67.06 N
ATOM 1380 CA ASP A 182 -109.425 9.936 14.742 1.00 65.77 C
ATOM 1381 CB ASP A 182 -109.615 9.435 16.173 1.00 63.44 C
ATOM 1382 CG ASP A 182 -111.076 9.333 16.550 1.00 73.62 C
ATOM 1383 OD1 ASP A 182 -111.846 10.280 16.257 1.00 74.54 O
ATOM 1384 OD2 ASP A 182 -111.474 8.299 17.122 1.00 73.61 O
ATOM 1385 C ASP A 182 -107.947 10.257 14.537 1.00 57.55 C
ATOM 1386 O ASP A 182 -107.429 11.151 15.214 1.00 66.04 O
ATOM 1387 N SER A 183 -107.271 9.538 13.636 1.00 53.99 N
ATOM 1388 CA SER A 183 -105.817 9.682 13.447 1.00 59.08 C
ATOM 1389 CB SER A 183 -105.250 8.701 12.402 1.00 59.10 C
ATOM 1390 OG SER A 183 -105.023 7.449 13.012 1.00 65.90 O
ATOM 1391 C SER A 183 -105.510 11.092 13.027 1.00 57.08 C
ATOM 1392 O SER A 183 -106.274 11.703 12.290 1.00 64.01 O
ATOM 1393 N GLY A 184 -104.411 11.629 13.527 1.00 55.62 N
ATOM 1394 CA GLY A 184 -104.071 13.005 13.248 1.00 57.39 C
ATOM 1395 C GLY A 184 -104.839 14.028 14.067 1.00 56.25 C
ATOM 1396 O GLY A 184 -104.472 15.194 14.056 1.00 57.97 O
ATOM 1397 N GLY A 185 -105.883 13.621 14.787 1.00 53.87 N
ATOM 1398 CA GLY A 185 -106.547 14.529 15.716 1.00 61.70 C
ATOM 1399 C GLY A 185 -105.716 14.813 16.956 1.00 58.62 C
ATOM 1400 O GLY A 185 -104.794 14.073 17.258 1.00 54.24 O
ATOM 1401 N PRO A 186 -106.065 15.872 17.710 1.00 60.63 N
ATOM 1402 CA PRO A 186 -105.196 16.326 18.772 1.00 59.75 C
ATOM 1403 CB PRO A 186 -105.442 17.821 18.753 1.00 57.45 C
ATOM 1404 CG PRO A 186 -106.906 17.919 18.404 1.00 59.09 C
ATOM 1405 CD PRO A 186 -107.305 16.659 17.703 1.00 61.25 C
ATOM 1406 C PRO A 186 -105.514 15.785 20.176 1.00 55.55 C

ATOM 1407 O PRO A 186 -106.643 15.412 20.479 1.00 46.10 O
ATOM 1408 N LEU A 187 -104.473 15.804 20.999 1.00 55.53 N
ATOM 1409 CA LEU A 187 -104.495 15.451 22.414 1.00 52.26 C
ATOM 1410 CB LEU A 187 -103.546 14.257 22.668 1.00 52.37 C
ATOM 1411 CG LEU A 187 -103.428 13.428 23.973 1.00 51.09 C
ATOM 1412 CD1 LEU A 187 -102.409 14.011 24.935 1.00 54.34 C
ATOM 1413 CD2 LEU A 187 -104.764 13.222 24.653 1.00 52.31 C
ATOM 1414 C LEU A 187 -104.037 16.740 23.124 1.00 51.67 C
ATOM 1415 O LEU A 187 -102.892 17.253 22.893 1.00 43.32 O
ATOM 1416 N VAL A 188 -104.944 17.275 23.952 1.00 49.80 N
ATOM 1417 CA VAL A 188 -104.776 18.594 24.551 1.00 48.96 C
ATOM 1418 CB VAL A 188 -105.859 19.549 24.003 1.00 52.01 C
ATOM 1419 CG1 VAL A 188 -105.817 20.927 24.684 1.00 48.39 C
ATOM 1420 CG2 VAL A 188 -105.676 19.700 22.495 1.00 50.05 C
ATOM 1421 C VAL A 188 -104.818 18.481 26.086 1.00 52.94 C
ATOM 1422 O VAL A 188 -105.781 17.946 26.675 1.00 49.59 O
ATOM 1423 N CYS A 189 -103.745 18.955 26.708 1.00 52.76 N
ATOM 1424 CA CYS A 189 -103.518 18.834 28.136 1.00 61.96 C
ATOM 1425 CB CYS A 189 -102.289 17.952 28.442 1.00 62.60 C
ATOM 1426 SG CYS A 189 -102.290 16.332 27.611 1.00 70.91 S
ATOM 1427 C CYS A 189 -103.287 20.249 28.610 1.00 66.32 C
ATOM 1428 O CYS A 189 -102.296 20.890 28.210 1.00 66.29 O
ATOM 1429 N GLY A 190 -104.224 20.729 29.431 1.00 73.44 N
ATOM 1430 CA GLY A 190 -104.207 22.084 29.969 1.00 72.97 C
ATOM 1431 C GLY A 190 -104.252 23.170 28.903 1.00 73.78 C
ATOM 1432 O GLY A 190 -103.481 24.118 28.977 1.00 64.64 O
ATOM 1433 N GLY A 191 -105.112 23.017 27.891 1.00 68.62 N
ATOM 1434 CA GLY A 191 -105.215 24.021 26.822 1.00 63.41 C
ATOM 1435 C GLY A 191 -104.015 24.171 25.885 1.00 60.31 C
ATOM 1436 O GLY A 191 -103.943 25.150 25.123 1.00 61.18 O
ATOM 1437 N VAL A 192 -103.091 23.205 25.915 1.00 59.37 N
ATOM 1438 CA VAL A 192 -101.945 23.184 24.997 1.00 59.55 C
ATOM 1439 CB VAL A 192 -100.590 23.301 25.753 1.00 57.72 C
ATOM 1440 CG1 VAL A 192 -99.458 23.476 24.771 1.00 53.28 C
ATOM 1441 CG2 VAL A 192 -100.587 24.489 26.721 1.00 63.81 C
ATOM 1442 C VAL A 192 -101.963 21.860 24.241 1.00 60.08 C
ATOM 1443 O VAL A 192 -102.202 20.821 24.847 1.00 62.26 O

ATOM 1444 N LEU A 193 -101.663 21.903 22.939 1.00 57.24 N
ATOM 1445 CA LEU A 193 -101.462 20.703 22.129 1.00 51.67 C
ATOM 1446 CB LEU A 193 -101.248 21.045 20.658 1.00 57.34 C
ATOM 1447 CG LEU A 193 -101.702 20.103 19.512 1.00 64.88 C
ATOM 1448 CD1 LEU A 193 -100.680 20.099 18.381 1.00 64.07 C
ATOM 1449 CD2 LEU A 193 -101.992 18.675 19.912 1.00 66.36 C
ATOM 1450 C LEU A 193 -100.215 19.988 22.626 1.00 56.85 C
ATOM 1451 O LEU A 193 -99.107 20.565 22.601 1.00 51.59 O
ATOM 1452 N GLU A 194 -100.400 18.750 23.094 1.00 54.13 N
ATOM 1453 CA GLU A 194 -99.277 17.882 23.505 1.00 54.63 C
ATOM 1454 CB GLU A 194 -99.530 17.341 24.932 1.00 55.29 C
ATOM 1455 CG GLU A 194 -99.384 18.386 26.035 1.00 56.29 C
ATOM 1456 CD GLU A 194 -97.969 18.923 26.200 1.00 56.61 C
ATOM 1457 OE1 GLU A 194 -97.018 18.352 25.607 1.00 59.37 O
ATOM 1458 OE2 GLU A 194 -97.803 19.903 26.966 1.00 60.76 O
ATOM 1459 C GLU A 194 -99.034 16.721 22.540 1.00 54.10 C
ATOM 1460 O GLU A 194 -97.890 16.302 22.366 1.00 53.44 O
ATOM 1461 N GLY A 195 -100.110 16.213 21.930 1.00 46.71 N
ATOM 1462 CA GLY A 195 -100.049 15.017 21.181 1.00 49.02 C
ATOM 1463 C GLY A 195 -100.977 14.944 19.999 1.00 51.42 C
ATOM 1464 O GLY A 195 -101.996 15.629 19.954 1.00 56.41 O
ATOM 1465 N VAL A 196 -100.630 14.062 19.066 1.00 44.40 N
ATOM 1466 CA VAL A 196 -101.439 13.792 17.891 1.00 47.27 C
ATOM 1467 CB VAL A 196 -100.670 14.215 16.627 1.00 49.66 C
ATOM 1468 CG1 VAL A 196 -101.474 13.880 15.371 1.00 50.37 C
ATOM 1469 CG2 VAL A 196 -100.318 15.689 16.706 1.00 48.31 C
ATOM 1470 C VAL A 196 -101.724 12.297 17.793 1.00 46.93 C
ATOM 1471 O VAL A 196 -100.790 11.486 17.872 1.00 45.75 O
ATOM 1472 N VAL A 197 -102.976 11.919 17.570 1.00 42.16 N
ATOM 1473 CA VAL A 197 -103.316 10.497 17.472 1.00 46.91 C
ATOM 1474 CB VAL A 197 -104.817 10.288 17.207 1.00 49.60 C
ATOM 1475 CG1 VAL A 197 -105.181 8.814 17.337 1.00 53.12 C
ATOM 1476 CG2 VAL A 197 -105.667 11.124 18.159 1.00 53.34 C
ATOM 1477 C VAL A 197 -102.494 9.783 16.349 1.00 50.07 C
ATOM 1478 O VAL A 197 -102.426 10.266 15.204 1.00 46.80 O
ATOM 1479 N THR A 198 -101.835 8.671 16.683 1.00 46.74 N
ATOM 1480 CA THR A 198 -101.220 7.834 15.650 1.00 56.08 C

ATOM 1481 CB THR A 198 -99.648 7.774 15.666 1.00 57.82 C
ATOM 1482 OG1 THR A 198 -99.141 6.765 14.747 1.00 59.78 O
ATOM 1483 CG2 THR A 198 -99.112 7.526 17.020 1.00 59.81 C
ATOM 1484 C THR A 198 -101.855 6.476 15.711 1.00 61.26 C
ATOM 1485 O THR A 198 -101.938 5.874 16.782 1.00 57.86 O
ATOM 1486 N SER A 199 -102.357 6.064 14.544 1.00 70.20 N
ATOM 1487 CA SER A 199 -102.702 4.691 14.228 1.00 78.90 C
ATOM 1488 CB SER A 199 -101.448 3.769 14.314 1.00 80.35 C
ATOM 1489 OG SER A 199 -100.240 4.399 13.861 1.00 74.44 O
ATOM 1490 C SER A 199 -103.828 4.220 15.149 1.00 82.46 C
ATOM 1491 O SER A 199 -103.746 3.130 15.722 1.00 79.45 O
ATOM 1492 N GLY A 200 -104.864 5.054 15.294 1.00 86.23 N
ATOM 1493 CA GLY A 200 -106.058 4.725 16.107 1.00 86.42 C
ATOM 1494 C GLY A 200 -106.733 3.448 15.625 1.00 92.70 C
ATOM 1495 O GLY A 200 -106.793 3.189 14.412 1.00 93.33 O
ATOM 1496 N SER A 201 -107.259 2.665 16.571 1.00 96.75 N
ATOM 1497 CA SER A 201 -107.388 1.201 16.389 1.00 99.49 C
ATOM 1498 CB SER A 201 -107.651 0.516 17.735 1.00 94.09 C
ATOM 1499 OG SER A 201 -108.793 1.056 18.355 1.00 83.92 O
ATOM 1500 C SER A 201 -108.402 0.730 15.334 1.00 99.91 C
ATOM 1501 O SER A 201 -109.495 1.292 15.204 1.00 95.49 O
ATOM 1502 N ARG A 202 -107.996 -0.295 14.576 1.00106.22 N
ATOM 1503 CA ARG A 202 -108.835 -0.897 13.540 1.00104.86 C
ATOM 1504 CB ARG A 202 -108.042 -1.906 12.666 1.00101.91 C
ATOM 1505 CG ARG A 202 -108.895 -3.000 12.017 1.00109.55 C
ATOM 1506 CD ARG A 202 -108.418 -3.493 10.653 1.00112.55 C
ATOM 1507 NE ARG A 202 -109.302 -4.585 10.189 1.00118.84 N
ATOM 1508 CZ ARG A 202 -109.779 -4.775 8.946 1.00110.97 C
ATOM 1509 NH1 ARG A 202 -109.496 -3.953 7.934 1.00105.21 N
ATOM 1510 NH2 ARG A 202 -110.581 -5.814 8.713 1.00105.97 N
ATOM 1511 C ARG A 202 -110.061 -1.521 14.227 1.00105.72 C
ATOM 1512 O ARG A 202 -111.191 -1.210 13.856 1.00 94.61 O
ATOM 1513 N VAL A 203 -109.834 -2.381 15.224 1.00111.38 N
ATOM 1514 CA VAL A 203 -110.920 -2.873 16.100 1.00117.64 C
ATOM 1515 CB VAL A 203 -110.596 -4.250 16.770 1.00128.24 C
ATOM 1516 CG1 VAL A 203 -110.296 -5.323 15.717 1.00124.61 C
ATOM 1517 CG2 VAL A 203 -109.460 -4.149 17.798 1.00127.44 C

ATOM 1518 C VAL A 203 -111.210 -1.787 17.150 1.00112.58 C
ATOM 1519 O VAL A 203 -110.279 -1.272 17.773 1.00115.95 O
ATOM 1520 N CYS A 204 -112.481 -1.418 17.323 1.00104.67 N
ATOM 1521 CA CYS A 204 -112.856 -0.292 18.211 1.00114.58 C
ATOM 1522 CB CYS A 204 -113.535 0.850 17.391 1.00110.97 C
ATOM 1523 SG CYS A 204 -114.029 2.426 18.199 1.00106.19 S
ATOM 1524 C CYS A 204 -113.712 -0.842 19.367 1.00107.45 C
ATOM 1525 O CYS A 204 -114.856 -0.444 19.563 1.00 98.25 O
ATOM 1526 N GLY A 205 -113.115 -1.768 20.120 1.00100.61 N
ATOM 1527 CA GLY A 205 -113.775 -2.466 21.228 1.00101.74 C
ATOM 1528 C GLY A 205 -112.956 -2.375 22.503 1.00110.00 C
ATOM 1529 O GLY A 205 -112.171 -1.431 22.679 1.00113.38 O
ATOM 1530 N ASN A 206 -113.135 -3.355 23.391 1.00112.42 N
ATOM 1531 CA ASN A 206 -112.375 -3.441 24.656 1.00119.11 C
ATOM 1532 CB ASN A 206 -113.295 -3.960 25.797 1.00117.31 C
ATOM 1533 CG ASN A 206 -112.862 -3.483 27.190 1.00115.66 C
ATOM 1534 OD1 ASN A 206 -112.569 -2.302 27.394 1.00111.90 O
ATOM 1535 ND2 ASN A 206 -112.848 -4.403 28.162 1.00102.95 N
ATOM 1536 C ASN A 206 -111.084 -4.304 24.479 1.00128.33 C
ATOM 1537 O ASN A 206 -110.918 -5.365 25.118 1.00112.39 O
ATOM 1538 N ARG A 207 -110.185 -3.843 23.593 1.00132.00 N
ATOM 1539 CA ARG A 207 -108.822 -4.391 23.488 1.00122.77 C
ATOM 1540 CB ARG A 207 -108.375 -4.646 22.018 1.00134.26 C
ATOM 1541 CG ARG A 207 -108.195 -6.135 21.614 1.00132.14 C
ATOM 1542 CD ARG A 207 -109.018 -7.105 22.480 1.00127.86 C
ATOM 1543 NE ARG A 207 -109.105 -8.501 22.043 1.00114.05 N
ATOM 1544 CZ ARG A 207 -109.674 -9.477 22.765 1.00 98.86 C
ATOM 1545 NH1 ARG A 207 -109.704 -10.724 22.301 1.00 83.46 N
ATOM 1546 NH2 ARG A 207 -110.206 -9.224 23.963 1.00 97.97 N
ATOM 1547 C ARG A 207 -107.886 -3.484 24.264 1.00105.26 C
ATOM 1548 O ARG A 207 -107.443 -2.438 23.777 1.00 84.96 O
ATOM 1549 N LYS A 208 -107.617 -3.923 25.497 1.00108.04 N
ATOM 1550 CA LYS A 208 -106.914 -3.144 26.522 1.00111.64 C
ATOM 1551 CB LYS A 208 -107.043 -3.806 27.935 1.00123.99 C
ATOM 1552 CG LYS A 208 -108.348 -3.542 28.697 1.00126.88 C
ATOM 1553 CD LYS A 208 -108.243 -2.383 29.696 1.00128.51 C
ATOM 1554 CE LYS A 208 -107.693 -2.800 31.066 1.00130.79 C

ATOM 1555 NZ LYS A 208 -106.213 -2.966 31.142 1.00129.60 N
ATOM 1556 C LYS A 208 -105.448 -2.978 26.165 1.00 92.61 C
ATOM 1557 O LYS A 208 -104.570 -3.550 26.851 1.00101.07 O
ATOM 1558 N LYS A 209 -105.174 -2.218 25.099 1.00 67.30 N
ATOM 1559 CA LYS A 209 -103.815 -1.700 24.911 1.00 60.19 C
ATOM 1560 CB LYS A 209 -103.148 -2.276 23.683 1.00 52.24 C
ATOM 1561 CG LYS A 209 -102.549 -3.685 23.827 1.00 53.70 C
ATOM 1562 CD LYS A 209 -101.632 -3.952 22.623 1.00 55.06 C
ATOM 1563 CE LYS A 209 -101.470 -5.392 22.188 1.00 53.37 C
ATOM 1564 NZ LYS A 209 -101.084 -6.264 23.301 1.00 51.82 N
ATOM 1565 C LYS A 209 -103.901 -0.180 24.860 1.00 52.73 C
ATOM 1566 O LYS A 209 -104.828 0.346 24.299 1.00 48.60 O
ATOM 1567 N PRO A 210 -102.955 0.534 25.480 1.00 47.64 N
ATOM 1568 CA PRO A 210 -103.107 1.972 25.483 1.00 48.83 C
ATOM 1569 CB PRO A 210 -101.935 2.452 26.337 1.00 50.13 C
ATOM 1570 CG PRO A 210 -101.673 1.328 27.256 1.00 49.98 C
ATOM 1571 CD PRO A 210 -101.898 0.107 26.416 1.00 50.96 C
ATOM 1572 C PRO A 210 -103.049 2.617 24.109 1.00 48.67 C
ATOM 1573 O PRO A 210 -102.543 2.030 23.161 1.00 54.90 O
ATOM 1574 N GLY A 211 -103.614 3.823 24.029 1.00 48.40 N
ATOM 1575 CA GLY A 211 -103.629 4.597 22.806 1.00 42.55 C
ATOM 1576 C GLY A 211 -102.306 5.307 22.737 1.00 40.07 C
ATOM 1577 O GLY A 211 -101.745 5.742 23.759 1.00 40.36 O
ATOM 1578 N ILE A 212 -101.797 5.414 21.528 1.00 39.29 N
ATOM 1579 CA ILE A 212 -100.502 6.021 21.298 1.00 44.41 C
ATOM 1580 CB ILE A 212 -99.630 5.102 20.425 1.00 43.23 C
ATOM 1581 CG1 ILE A 212 -99.506 3.727 21.111 1.00 45.55 C
ATOM 1582 CD1 ILE A 212 -98.809 2.670 20.297 1.00 46.39 C
ATOM 1583 CG2 ILE A 212 -98.296 5.754 20.196 1.00 42.03 C
ATOM 1584 C ILE A 212 -100.704 7.373 20.630 1.00 43.57 C
ATOM 1585 O ILE A 212 -101.553 7.484 19.769 1.00 40.13 O
ATOM 1586 N TYR A 213 -99.950 8.385 21.093 1.00 45.47 N
ATOM 1587 CA TYR A 213 -100.032 9.757 20.614 1.00 43.86 C
ATOM 1588 CB TYR A 213 -100.816 10.647 21.606 1.00 46.80 C
ATOM 1589 CG TYR A 213 -102.215 10.121 21.888 1.00 43.02 C
ATOM 1590 CD1 TYR A 213 -102.416 9.144 22.835 1.00 43.68 C
ATOM 1591 CE1 TYR A 213 -103.682 8.655 23.121 1.00 50.66 C

ATOM 1592 CZ TYR A 213 -104.776 9.127 22.438 1.00 53.36 C
ATOM 1593 OH TYR A 213 -105.997 8.567 22.720 1.00 62.39 O
ATOM 1594 CE2 TYR A 213 -104.609 10.105 21.476 1.00 50.06 C
ATOM 1595 CD2 TYR A 213 -103.322 10.585 21.197 1.00 46.98 C
ATOM 1596 C TYR A 213 -98.641 10.281 20.357 1.00 40.07 C
ATOM 1597 O TYR A 213 -97.707 9.996 21.114 1.00 41.44 O
ATOM 1598 N THR A 214 -98.467 10.997 19.243 1.00 41.18 N
ATOM 1599 CA THR A 214 -97.119 11.459 18.882 1.00 39.56 C
ATOM 1600 CB THR A 214 -96.766 11.293 17.388 1.00 38.93 C
ATOM 1601 OG1 THR A 214 -95.664 12.173 17.025 1.00 42.23 O
ATOM 1602 CG2 THR A 214 -97.919 11.436 16.468 1.00 43.03 C
ATOM 1603 C THR A 214 -96.894 12.825 19.561 1.00 40.19 C
ATOM 1604 O THR A 214 -97.800 13.636 19.640 1.00 42.75 O
ATOM 1605 N ARG A 215 -95.732 13.021 20.170 1.00 43.39 N
ATOM 1606 CA ARG A 215 -95.520 14.155 21.083 1.00 44.92 C
ATOM 1607 CB ARG A 215 -94.478 13.802 22.142 1.00 47.53 C
ATOM 1608 CG ARG A 215 -94.976 12.819 23.187 1.00 44.45 C
ATOM 1609 CD ARG A 215 -93.883 12.556 24.201 1.00 46.60 C
ATOM 1610 NE ARG A 215 -93.600 13.733 25.006 1.00 45.39 N
ATOM 1611 CZ ARG A 215 -92.454 14.414 25.015 1.00 45.57 C
ATOM 1612 NH1 ARG A 215 -91.413 14.069 24.274 1.00 46.79 N
ATOM 1613 NH2 ARG A 215 -92.354 15.474 25.780 1.00 46.41 N
ATOM 1614 C ARG A 215 -95.044 15.328 20.277 1.00 49.38 C
ATOM 1615 O ARG A 215 -93.963 15.234 19.690 1.00 44.75 O
ATOM 1616 N VAL A 216 -95.825 16.415 20.204 1.00 54.35 N
ATOM 1617 CA VAL A 216 -95.430 17.525 19.300 1.00 58.01 C
ATOM 1618 CB VAL A 216 -96.483 18.627 19.154 1.00 57.01 C
ATOM 1619 CG1 VAL A 216 -97.794 18.041 18.619 1.00 58.55 C
ATOM 1620 CG2 VAL A 216 -96.669 19.361 20.476 1.00 57.69 C
ATOM 1621 C VAL A 216 -94.105 18.151 19.695 1.00 54.87 C
ATOM 1622 O VAL A 216 -93.325 18.532 18.829 1.00 57.35 O
ATOM 1623 N ALA A 217 -93.823 18.204 20.989 1.00 52.74 N
ATOM 1624 CA ALA A 217 -92.627 18.906 21.463 1.00 54.15 C
ATOM 1625 CB ALA A 217 -92.643 19.034 22.988 1.00 56.66 C
ATOM 1626 C ALA A 217 -91.338 18.272 20.971 1.00 51.40 C
ATOM 1627 O ALA A 217 -90.343 18.983 20.732 1.00 57.52 O
ATOM 1628 N SER A 218 -91.358 16.952 20.760 1.00 55.69 N

ATOM 1629 CA SER A 218 -90.221 16.212 20.130 1.00 55.10 C
ATOM 1630 CB SER A 218 -90.501 14.708 20.107 1.00 56.20 C
ATOM 1631 OG SER A 218 -90.425 14.156 21.396 1.00 72.11 O
ATOM 1632 C SER A 218 -89.885 16.611 18.683 1.00 53.57 C
ATOM 1633 O SER A 218 -88.812 16.276 18.214 1.00 47.21 O
ATOM 1634 N TYR A 219 -90.825 17.243 17.972 1.00 54.65 N
ATOM 1635 CA TYR A 219 -90.630 17.678 16.607 1.00 56.70 C
ATOM 1636 CB TYR A 219 -91.621 16.934 15.724 1.00 58.48 C
ATOM 1637 CG TYR A 219 -91.484 15.439 15.784 1.00 54.62 C
ATOM 1638 CD1 TYR A 219 -92.082 14.721 16.800 1.00 55.51 C
ATOM 1639 CE1 TYR A 219 -91.961 13.342 16.867 1.00 53.42 C
ATOM 1640 CZ TYR A 219 -91.265 12.669 15.889 1.00 49.28 C
ATOM 1641 OH TYR A 219 -91.176 11.338 15.989 1.00 44.95 O
ATOM 1642 CE2 TYR A 219 -90.650 13.349 14.855 1.00 55.64 C
ATOM 1643 CD2 TYR A 219 -90.768 14.733 14.806 1.00 58.13 C
ATOM 1644 C TYR A 219 -90.839 19.187 16.470 1.00 61.56 C
ATOM 1645 O TYR A 219 -91.325 19.665 15.429 1.00 67.77 O
ATOM 1646 N ALA A 220 -90.464 19.940 17.503 1.00 56.24 N
ATOM 1647 CA ALA A 220 -90.562 21.408 17.472 1.00 56.47 C
ATOM 1648 CB ALA A 220 -90.050 21.988 18.788 1.00 55.08 C
ATOM 1649 C ALA A 220 -89.770 22.005 16.295 1.00 58.96 C
ATOM 1650 O ALA A 220 -90.290 22.780 15.500 1.00 60.22 O
ATOM 1651 N ALA A 221 -88.512 21.599 16.187 1.00 60.18 N
ATOM 1652 CA ALA A 221 -87.618 22.097 15.172 1.00 57.10 C
ATOM 1653 CB ALA A 221 -86.225 21.522 15.375 1.00 53.55 C
ATOM 1654 C ALA A 221 -88.134 21.810 13.746 1.00 64.32 C
ATOM 1655 O ALA A 221 -88.088 22.695 12.885 1.00 73.09 O
ATOM 1656 N TRP A 222 -88.634 20.598 13.505 1.00 62.20 N
ATOM 1657 CA TRP A 222 -89.170 20.245 12.187 1.00 56.39 C
ATOM 1658 CB TRP A 222 -89.469 18.750 12.085 1.00 51.49 C
ATOM 1659 CG TRP A 222 -90.241 18.446 10.860 1.00 47.37 C
ATOM 1660 CD1 TRP A 222 -89.747 18.391 9.591 1.00 45.70 C
ATOM 1661 NE1 TRP A 222 -90.771 18.114 8.713 1.00 52.68 N
ATOM 1662 CE2 TRP A 222 -91.948 17.974 9.410 1.00 43.17 C
ATOM 1663 CD2 TRP A 222 -91.654 18.157 10.767 1.00 39.96 C
ATOM 1664 CE3 TRP A 222 -92.690 18.045 11.704 1.00 44.50 C
ATOM 1665 CZ3 TRP A 222 -93.977 17.773 11.259 1.00 44.22 C

ATOM 1666 CH2 TRP A 222 -94.240 17.581 9.891 1.00 46.58 C
ATOM 1667 CZ2 TRP A 222 -93.236 17.673 8.953 1.00 46.21 C
ATOM 1668 C TRP A 222 -90.403 21.087 11.814 1.00 57.78 C
ATOM 1669 O TRP A 222 -90.467 21.607 10.712 1.00 64.64 O
ATOM 1670 N ILE A 223 -91.363 21.228 12.723 1.00 60.19 N
ATOM 1671 CA ILE A 223 -92.534 22.101 12.504 1.00 63.23 C
ATOM 1672 CB ILE A 223 -93.540 22.081 13.699 1.00 60.26 C
ATOM 1673 CG1 ILE A 223 -94.281 20.729 13.810 1.00 63.78 C
ATOM 1674 CD1 ILE A 223 -94.972 20.483 15.153 1.00 60.04 C
ATOM 1675 CG2 ILE A 223 -94.583 23.178 13.558 1.00 57.56 C
ATOM 1676 C ILE A 223 -92.125 23.565 12.269 1.00 71.19 C
ATOM 1677 O ILE A 223 -92.760 24.251 11.457 1.00 75.61 O
ATOM 1678 N ASP A 224 -91.110 24.048 12.999 1.00 67.23 N
ATOM 1679 CA ASP A 224 -90.691 25.464 12.901 1.00 66.47 C
ATOM 1680 CB ASP A 224 -89.642 25.833 13.956 1.00 62.65 C
ATOM 1681 CG ASP A 224 -90.236 26.187 15.311 1.00 63.24 C
ATOM 1682 OD1 ASP A 224 -91.470 26.388 15.479 1.00 55.51 O
ATOM 1683 OD2 ASP A 224 -89.400 26.253 16.232 1.00 59.08 O
ATOM 1684 C ASP A 224 -90.076 25.793 11.551 1.00 68.91 C
ATOM 1685 O ASP A 224 -90.190 26.927 11.085 1.00 69.94 O
ATOM 1686 N SER A 225 -89.407 24.806 10.961 1.00 66.22 N
ATOM 1687 CA SER A 225 -88.638 24.995 9.749 1.00 69.97 C
ATOM 1688 CB SER A 225 -87.482 23.995 9.702 1.00 67.35 C
ATOM 1689 OG SER A 225 -87.950 22.766 9.215 1.00 70.22 O
ATOM 1690 C SER A 225 -89.523 24.832 8.529 1.00 69.33 C
ATOM 1691 O SER A 225 -89.237 25.377 7.460 1.00 73.28 O
ATOM 1692 N VAL A 226 -90.596 24.073 8.691 1.00 68.10 N
ATOM 1693 CA VAL A 226 -91.549 23.890 7.615 1.00 66.35 C
ATOM 1694 CB VAL A 226 -92.492 22.700 7.887 1.00 62.96 C
ATOM 1695 CG1 VAL A 226 -93.614 22.626 6.855 1.00 59.03 C
ATOM 1696 CG2 VAL A 226 -91.690 21.394 7.905 1.00 63.63 C
ATOM 1697 C VAL A 226 -92.331 25.172 7.445 1.00 69.46 C
ATOM 1698 O VAL A 226 -92.539 25.631 6.318 1.00 66.17 O
ATOM 1699 N LEU A 227 -92.757 25.741 8.570 1.00 71.54 N
ATOM 1700 CA LEU A 227 -93.469 27.022 8.569 1.00 69.54 C
ATOM 1701 CB LEU A 227 -94.040 27.325 9.952 1.00 67.77 C
ATOM 1702 CG LEU A 227 -95.472 26.842 10.151 1.00 71.83 C

ATOM 1703 CD1 LEU A 227 -95.687 25.374 9.775 1.00 69.08 C
ATOM 1704 CD2 LEU A 227 -95.899 27.088 11.596 1.00 75.57 C
ATOM 1705 C LEU A 227 -92.634 28.196 8.022 1.00 67.48 C
ATOM 1706 O LEU A 227 -93.156 29.064 7.324 1.00 64.38 O
ATOM 1707 N ALA A 228 -91.339 28.184 8.290 1.00 72.34 N
ATOM 1708 CA ALA A 228 -90.438 29.199 7.756 1.00 79.15 C
ATOM 1709 CB ALA A 228 -89.113 29.157 8.529 1.00 75.38 C
ATOM 1710 C ALA A 228 -90.205 29.084 6.219 1.00 81.19 C
ATOM 1711 O ALA A 228 -90.947 28.491 5.412 1.00 85.74 O
ATOM 1712 OXT ALA A 228 -89.227 29.625 5.718 1.00 78.72 O
TER 1713 ALA A 228
ATOM 1714 N GLU H 1 -74.413 -1.579 23.835 1.00 50.83 N
ATOM 1715 CA GLU H 1 -74.930 -0.217 24.175 1.00 51.30 C
ATOM 1716 CB GLU H 1 -75.669 0.388 23.007 1.00 61.36 C
ATOM 1717 CG GLU H 1 -76.476 1.675 23.275 1.00 79.39 C
ATOM 1718 CD GLU H 1 -75.586 2.905 23.393 1.00103.95 C
ATOM 1719 OE1 GLU H 1 -75.716 3.821 22.541 1.00122.99 O
ATOM 1720 OE2 GLU H 1 -74.742 2.951 24.324 1.00116.32 O
ATOM 1721 C GLU H 1 -75.793 -0.264 25.471 1.00 44.96 C
ATOM 1722 O GLU H 1 -75.321 0.215 26.520 1.00 42.20 O
ATOM 1723 N VAL H 2 -77.013 -0.824 25.407 1.00 38.19 N
ATOM 1724 CA VAL H 2 -77.809 -1.072 26.617 1.00 38.84 C
ATOM 1725 CB VAL H 2 -79.137 -1.806 26.379 1.00 35.97 C
ATOM 1726 CG1 VAL H 2 -79.747 -2.271 27.710 1.00 32.28 C
ATOM 1727 CG2 VAL H 2 -80.120 -0.889 25.617 1.00 35.57 C
ATOM 1728 C VAL H 2 -76.983 -1.899 27.553 1.00 39.47 C
ATOM 1729 O VAL H 2 -76.570 -2.947 27.138 1.00 37.87 O
ATOM 1730 N GLN H 3 -76.663 -1.395 28.756 1.00 36.94 N
ATOM 1731 CA GLN H 3 -76.154 -2.289 29.788 1.00 43.15 C
ATOM 1732 CB GLN H 3 -74.625 -2.337 29.934 1.00 50.44 C
ATOM 1733 CG GLN H 3 -73.762 -1.124 29.665 1.00 67.12 C
ATOM 1734 CD GLN H 3 -72.273 -1.523 29.600 1.00 77.12 C
ATOM 1735 OE1 GLN H 3 -71.561 -1.509 30.616 1.00 76.27 O
ATOM 1736 NE2 GLN H 3 -71.822 -1.945 28.416 1.00 80.44 N
ATOM 1737 C GLN H 3 -76.828 -2.205 31.146 1.00 39.84 C
ATOM 1738 O GLN H 3 -77.325 -1.141 31.567 1.00 29.36 O
ATOM 1739 N LEU H 4 -76.834 -3.369 31.800 1.00 39.66 N

ATOM 1740 CA LEU H 4 -77.220 -3.508 33.211 1.00 38.59 C
ATOM 1741 CB LEU H 4 -78.406 -4.460 33.265 1.00 39.32 C
ATOM 1742 CG LEU H 4 -79.836 -3.926 33.110 1.00 42.05 C
ATOM 1743 CD1 LEU H 4 -79.958 -2.462 32.907 1.00 43.26 C
ATOM 1744 CD2 LEU H 4 -80.620 -4.651 32.046 1.00 47.71 C
ATOM 1745 C LEU H 4 -76.054 -4.091 34.010 1.00 36.12 C
ATOM 1746 O LEU H 4 -75.415 -5.032 33.570 1.00 32.03 O
ATOM 1747 N VAL H 5 -75.753 -3.547 35.178 1.00 35.96 N
ATOM 1748 CA VAL H 5 -74.686 -4.123 36.006 1.00 36.35 C
ATOM 1749 CB VAL H 5 -73.386 -3.232 35.963 1.00 42.67 C
ATOM 1750 CG1 VAL H 5 -72.305 -3.725 36.956 1.00 41.00 C
ATOM 1751 CG2 VAL H 5 -72.789 -3.173 34.534 1.00 39.19 C
ATOM 1752 C VAL H 5 -75.203 -4.278 37.426 1.00 36.04 C
ATOM 1753 O VAL H 5 -75.705 -3.333 37.977 1.00 43.89 O
ATOM 1754 N GLU H 6 -75.127 -5.482 37.986 1.00 38.19 N
ATOM 1755 CA GLU H 6 -75.633 -5.778 39.311 1.00 36.59 C
ATOM 1756 CB GLU H 6 -76.208 -7.198 39.486 1.00 38.53 C
ATOM 1757 CG GLU H 6 -77.587 -7.495 38.887 1.00 41.18 C
ATOM 1758 CD GLU H 6 -77.510 -8.197 37.536 1.00 47.11 C
ATOM 1759 OE1 GLU H 6 -78.510 -8.705 37.020 1.00 54.35 O
ATOM 1760 OE2 GLU H 6 -76.435 -8.285 36.929 1.00 52.79 O
ATOM 1761 C GLU H 6 -74.475 -5.623 40.267 1.00 40.90 C
ATOM 1762 O GLU H 6 -73.302 -5.778 39.901 1.00 40.43 O
ATOM 1763 N SER H 7 -74.831 -5.384 41.526 1.00 37.77 N
ATOM 1764 CA SER H 7 -73.845 -5.249 42.588 1.00 38.22 C
ATOM 1765 CB SER H 7 -73.513 -3.765 42.802 1.00 38.61 C
ATOM 1766 OG SER H 7 -72.327 -3.555 42.222 1.00 38.28 O
ATOM 1767 C SER H 7 -74.435 -5.662 43.851 1.00 35.19 C
ATOM 1768 O SER H 7 -75.611 -5.404 44.043 1.00 32.90 O
ATOM 1769 N GLY H 8 -73.579 -6.178 44.737 1.00 35.88 N
ATOM 1770 CA GLY H 8 -73.873 -6.246 46.131 1.00 33.68 C
ATOM 1771 C GLY H 8 -73.970 -7.651 46.653 1.00 36.80 C
ATOM 1772 O GLY H 8 -74.234 -7.840 47.828 1.00 35.74 O
ATOM 1773 N GLY H 9 -73.763 -8.663 45.821 1.00 36.68 N
ATOM 1774 CA GLY H 9 -73.838 -10.024 46.353 1.00 37.19 C
ATOM 1775 C GLY H 9 -72.785 -10.365 47.401 1.00 37.79 C
ATOM 1776 O GLY H 9 -71.736 -9.758 47.455 1.00 50.27 O

ATOM 1777 N GLY H 10 -73.067 -11.390 48.195 1.00 35.56 N
ATOM 1778 CA GLY H 10 -72.107 -12.005 49.063 1.00 30.53 C
ATOM 1779 C GLY H 10 -72.814 -12.927 50.057 1.00 32.98 C
ATOM 1780 O GLY H 10 -73.953 -13.420 49.835 1.00 30.55 O
ATOM 1781 N LEU H 11 -72.098 -13.218 51.119 1.00 33.21 N
ATOM 1782 CA LEU H 11 -72.499 -14.199 52.091 1.00 34.74 C
ATOM 1783 CB LEU H 11 -71.281 -14.938 52.603 1.00 34.37 C
ATOM 1784 CG LEU H 11 -71.425 -15.887 53.793 1.00 33.28 C
ATOM 1785 CD1 LEU H 11 -72.187 -17.129 53.344 1.00 35.15 C
ATOM 1786 CD2 LEU H 11 -70.029 -16.225 54.318 1.00 31.58 C
ATOM 1787 C LEU H 11 -73.197 -13.466 53.210 1.00 33.95 C
ATOM 1788 O LEU H 11 -72.699 -12.471 53.670 1.00 43.99 O
ATOM 1789 N VAL H 12 -74.372 -13.944 53.605 1.00 36.06 N
ATOM 1790 CA VAL H 12 -75.106 -13.476 54.782 1.00 37.00 C
ATOM 1791 CB VAL H 12 -76.385 -12.657 54.472 1.00 41.55 C
ATOM 1792 CG1 VAL H 12 -76.096 -11.197 54.538 1.00 52.24 C
ATOM 1793 CG2 VAL H 12 -77.031 -13.059 53.125 1.00 43.14 C
ATOM 1794 C VAL H 12 -75.633 -14.655 55.549 1.00 37.70 C
ATOM 1795 O VAL H 12 -75.972 -15.680 54.960 1.00 35.28 O
ATOM 1796 N GLN H 13 -75.851 -14.414 56.843 1.00 37.80 N
ATOM 1797 CA GLN H 13 -76.400 -15.395 57.755 1.00 39.97 C
ATOM 1798 CB GLN H 13 -76.016 -15.043 59.187 1.00 42.06 C
ATOM 1799 CG GLN H 13 -74.503 -14.769 59.289 1.00 52.61 C
ATOM 1800 CD GLN H 13 -73.893 -15.227 60.614 1.00 65.99 C
ATOM 1801 OE1 GLN H 13 -73.950 -14.518 61.618 1.00 57.79 O
ATOM 1802 NE2 GLN H 13 -73.276 -16.416 60.603 1.00 71.27 N
ATOM 1803 C GLN H 13 -77.904 -15.478 57.588 1.00 38.20 C
ATOM 1804 O GLN H 13 -78.544 -14.469 57.196 1.00 34.49 O
ATOM 1805 N PRO H 14 -78.488 -16.656 57.906 1.00 34.87 N
ATOM 1806 CA PRO H 14 -79.970 -16.741 57.952 1.00 37.16 C
ATOM 1807 CB PRO H 14 -80.254 -18.227 58.347 1.00 36.46 C
ATOM 1808 CG PRO H 14 -78.959 -18.965 58.066 1.00 36.14 C
ATOM 1809 CD PRO H 14 -77.871 -17.927 58.336 1.00 38.31 C
ATOM 1810 C PRO H 14 -80.532 -15.771 58.979 1.00 33.84 C
ATOM 1811 O PRO H 14 -80.009 -15.754 60.086 1.00 35.31 O
ATOM 1812 N GLY H 15 -81.538 -14.970 58.585 1.00 33.38 N
ATOM 1813 CA GLY H 15 -82.108 -13.870 59.378 1.00 32.40 C

ATOM 1814 C GLY H 15 -81.577 -12.511 58.920 1.00 36.80 C
ATOM 1815 O GLY H 15 -82.145 -11.434 59.271 1.00 34.47 O
ATOM 1816 N GLY H 16 -80.481 -12.531 58.136 1.00 34.73 N
ATOM 1817 CA GLY H 16 -79.800 -11.305 57.768 1.00 27.97 C
ATOM 1818 C GLY H 16 -80.474 -10.598 56.648 1.00 29.09 C
ATOM 1819 O GLY H 16 -81.479 -11.083 56.057 1.00 28.88 O
ATOM 1820 N SER H 17 -79.941 -9.421 56.364 1.00 30.71 N
ATOM 1821 CA SER H 17 -80.395 -8.597 55.271 1.00 31.52 C
ATOM 1822 CB SER H 17 -80.923 -7.273 55.817 1.00 31.99 C
ATOM 1823 OG SER H 17 -81.964 -7.449 56.762 1.00 34.88 O
ATOM 1824 C SER H 17 -79.257 -8.327 54.319 1.00 31.15 C
ATOM 1825 O SER H 17 -78.091 -8.515 54.676 1.00 31.55 O
ATOM 1826 N LEU H 18 -79.602 -7.878 53.107 1.00 33.39 N
ATOM 1827 CA LEU H 18 -78.607 -7.534 52.072 1.00 34.69 C
ATOM 1828 CB LEU H 18 -78.156 -8.784 51.352 1.00 40.40 C
ATOM 1829 CG LEU H 18 -76.691 -9.086 51.057 1.00 46.20 C
ATOM 1830 CD1 LEU H 18 -76.533 -9.579 49.632 1.00 42.48 C
ATOM 1831 CD2 LEU H 18 -75.739 -7.950 51.342 1.00 45.46 C
ATOM 1832 C LEU H 18 -79.268 -6.654 51.027 1.00 37.35 C
ATOM 1833 O LEU H 18 -80.445 -6.872 50.676 1.00 37.58 O
ATOM 1834 N ARG H 19 -78.507 -5.700 50.496 1.00 35.46 N
ATOM 1835 CA ARG H 19 -79.002 -4.774 49.524 1.00 35.46 C
ATOM 1836 CB ARG H 19 -78.772 -3.398 50.017 1.00 35.75 C
ATOM 1837 CG ARG H 19 -79.463 -2.304 49.198 1.00 38.38 C
ATOM 1838 CD ARG H 19 -78.443 -1.227 48.928 1.00 38.86 C
ATOM 1839 NE ARG H 19 -78.994 0.066 49.007 1.00 43.33 N
ATOM 1840 CZ ARG H 19 -78.294 1.168 48.793 1.00 45.83 C
ATOM 1841 NH1 ARG H 19 -77.040 1.125 48.412 1.00 41.61 N
ATOM 1842 NH2 ARG H 19 -78.900 2.331 48.913 1.00 55.59 N
ATOM 1843 C ARG H 19 -78.259 -4.967 48.224 1.00 34.44 C
ATOM 1844 O ARG H 19 -77.070 -5.078 48.218 1.00 31.96 O
ATOM 1845 N LEU H 20 -78.996 -5.021 47.121 1.00 38.11 N
ATOM 1846 CA LEU H 20 -78.421 -5.270 45.762 1.00 34.78 C
ATOM 1847 CB LEU H 20 -79.149 -6.471 45.109 1.00 34.36 C
ATOM 1848 CG LEU H 20 -78.575 -7.879 45.129 1.00 33.68 C
ATOM 1849 CD1 LEU H 20 -77.714 -8.216 46.302 1.00 34.57 C
ATOM 1850 CD2 LEU H 20 -79.666 -8.914 44.934 1.00 35.21 C

ATOM 1851 C LEU H 20 -78.725 -4.069 44.937 1.00 30.94 C
ATOM 1852 O LEU H 20 -79.791 -3.420 45.147 1.00 29.26 O
ATOM 1853 N SER H 21 -77.876 -3.813 43.958 1.00 30.08 N
ATOM 1854 CA SER H 21 -78.061 -2.682 43.033 1.00 32.82 C
ATOM 1855 CB SER H 21 -76.898 -1.686 43.215 1.00 39.28 C
ATOM 1856 OG SER H 21 -76.869 -1.126 44.543 1.00 53.56 O
ATOM 1857 C SER H 21 -78.043 -3.109 41.581 1.00 32.01 C
ATOM 1858 O SER H 21 -77.230 -3.944 41.201 1.00 33.22 O
ATOM 1859 N CYS H 22 -78.857 -2.456 40.762 1.00 33.21 N
ATOM 1860 CA CYS H 22 -78.852 -2.637 39.334 1.00 37.53 C
ATOM 1861 CB CYS H 22 -80.193 -3.265 38.890 1.00 37.59 C
ATOM 1862 SG CYS H 22 -80.423 -3.494 37.111 1.00 45.78 S
ATOM 1863 C CYS H 22 -78.602 -1.263 38.673 1.00 38.98 C
ATOM 1864 O CYS H 22 -79.416 -0.387 38.761 1.00 36.08 O
ATOM 1865 N ALA H 23 -77.479 -1.112 37.982 1.00 40.56 N
ATOM 1866 CA ALA H 23 -77.078 0.178 37.392 1.00 40.06 C
ATOM 1867 CB ALA H 23 -75.639 0.536 37.820 1.00 35.41 C
ATOM 1868 C ALA H 23 -77.219 0.124 35.864 1.00 35.50 C
ATOM 1869 O ALA H 23 -76.624 -0.714 35.201 1.00 41.20 O
ATOM 1870 N ALA H 24 -78.051 0.985 35.316 1.00 34.32 N
ATOM 1871 CA ALA H 24 -78.374 0.932 33.907 1.00 33.86 C
ATOM 1872 CB ALA H 24 -79.849 1.080 33.691 1.00 32.66 C
ATOM 1873 C ALA H 24 -77.670 2.051 33.172 1.00 38.54 C
ATOM 1874 O ALA H 24 -77.446 3.113 33.737 1.00 45.79 O
ATOM 1875 N SER H 25 -77.303 1.765 31.927 1.00 39.48 N
ATOM 1876 CA SER H 25 -76.910 2.754 30.944 1.00 39.62 C
ATOM 1877 CB SER H 25 -75.414 2.992 30.994 1.00 37.31 C
ATOM 1878 OG SER H 25 -74.690 1.794 30.862 1.00 42.48 O
ATOM 1879 C SER H 25 -77.347 2.356 29.517 1.00 38.72 C
ATOM 1880 O SER H 25 -77.727 1.193 29.209 1.00 31.31 O
ATOM 1881 N GLY H 26 -77.303 3.380 28.670 1.00 38.30 N
ATOM 1882 CA GLY H 26 -77.463 3.263 27.248 1.00 37.69 C
ATOM 1883 C GLY H 26 -78.871 3.468 26.751 1.00 37.94 C
ATOM 1884 O GLY H 26 -79.150 3.178 25.586 1.00 43.22 O
ATOM 1885 N TYR H 27 -79.746 3.952 27.623 1.00 35.39 N
ATOM 1886 CA TYR H 27 -81.150 4.214 27.289 1.00 33.14 C
ATOM 1887 CB TYR H 27 -81.935 2.910 27.186 1.00 35.48 C

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ATOM   1888  CG  TYR H  27    -82.186   2.185  28.513  1.00 31.69           C
ATOM   1889  CD1 TYR H  27    -81.257   1.335  29.038  1.00 30.53           C
ATOM   1890  CE1 TYR H  27    -81.506   0.635  30.217  1.00 31.06           C
ATOM   1891  CZ  TYR H  27    -82.702   0.811  30.903  1.00 27.10           C
ATOM   1892  OH  TYR H  27    -82.892   0.157  32.095  1.00 28.86           O
ATOM   1893  CE2 TYR H  27    -83.634   1.645  30.413  1.00 29.08           C
ATOM   1894  CD2 TYR H  27    -83.406   2.309  29.198  1.00 34.81           C
ATOM   1895  C   TYR H  27    -81.718   5.010  28.425  1.00 34.29           C
ATOM   1896  O   TYR H  27    -81.089   5.119  29.466  1.00 30.60           O
ATOM   1897  N   THR H  28    -82.913   5.555  28.252  1.00 37.73           N
ATOM   1898  CA  THR H  28    -83.539   6.379  29.301  1.00 38.21           C
ATOM   1899  CB  THR H  28    -84.630   7.278  28.707  1.00 38.33           C
ATOM   1900  OG1 THR H  28    -84.117   7.935  27.543  1.00 35.50           O
ATOM   1901  CG2 THR H  28    -85.127   8.344  29.780  1.00 40.07           C
ATOM   1902  C   THR H  28    -84.144   5.465  30.386  1.00 39.55           C
ATOM   1903  O   THR H  28    -85.194   4.868  30.179  1.00 38.34           O
ATOM   1904  N   PHE H  29    -83.462   5.396  31.525  1.00 36.68           N
ATOM   1905  CA  PHE H  29    -83.802   4.549  32.663  1.00 34.54           C
ATOM   1906  CB  PHE H  29    -82.851   4.861  33.824  1.00 34.52           C
ATOM   1907  CG  PHE H  29    -83.116   4.053  35.085  1.00 39.01           C
ATOM   1908  CD1 PHE H  29    -82.851   2.696  35.118  1.00 37.78           C
ATOM   1909  CE1 PHE H  29    -83.077   1.961  36.259  1.00 39.81           C
ATOM   1910  CZ  PHE H  29    -83.572   2.578  37.408  1.00 42.17           C
ATOM   1911  CE2 PHE H  29    -83.838   3.938  37.378  1.00 41.03           C
ATOM   1912  CD2 PHE H  29    -83.602   4.661  36.237  1.00 36.55           C
ATOM   1913  C   PHE H  29    -85.250   4.624  33.119  1.00 35.54           C
ATOM   1914  O   PHE H  29    -85.857   3.596  33.446  1.00 34.90           O
ATOM   1915  N   THR H  30    -85.821   5.823  33.099  1.00 36.80           N
ATOM   1916  CA  THR H  30    -87.177   5.994  33.573  1.00 35.57           C
ATOM   1917  CB  THR H  30    -87.458   7.463  33.939  1.00 34.21           C
ATOM   1918  OG1 THR H  30    -87.117   8.300  32.849  1.00 38.31           O
ATOM   1919  CG2 THR H  30    -86.638   7.901  35.163  1.00 33.79           C
ATOM   1920  C   THR H  30    -88.279   5.445  32.629  1.00 34.35           C
ATOM   1921  O   THR H  30    -89.410   5.345  33.032  1.00 36.90           O
ATOM   1922  N   ASP H  31    -87.963   5.017  31.420  1.00 34.26           N
ATOM   1923  CA  ASP H  31    -88.987   4.628  30.451  1.00 35.23           C
ATOM   1924  CB  ASP H  31    -88.522   5.123  29.053  1.00 37.89           C
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ATOM 1925 CG ASP H 31 -88.700 6.641 28.891 1.00 43.74 C
ATOM 1926 OD1 ASP H 31 -89.597 7.186 29.599 1.00 47.73 O
ATOM 1927 OD2 ASP H 31 -87.981 7.287 28.065 1.00 45.53 O
ATOM 1928 C ASP H 31 -89.374 3.140 30.423 1.00 34.59 C
ATOM 1929 O ASP H 31 -90.167 2.684 29.548 1.00 41.29 O
ATOM 1930 N TYR H 32 -88.822 2.373 31.345 1.00 32.94 N
ATOM 1931 CA TYR H 32 -88.986 0.922 31.356 1.00 34.99 C
ATOM 1932 CB TYR H 32 -87.794 0.272 30.620 1.00 35.23 C
ATOM 1933 CG TYR H 32 -87.566 0.711 29.207 1.00 33.89 C
ATOM 1934 CD1 TYR H 32 -88.156 0.040 28.147 1.00 37.48 C
ATOM 1935 CE1 TYR H 32 -87.952 0.442 26.823 1.00 35.17 C
ATOM 1936 CZ TYR H 32 -87.121 1.473 26.538 1.00 35.66 C
ATOM 1937 OH TYR H 32 -86.939 1.853 25.203 1.00 35.47 O
ATOM 1938 CE2 TYR H 32 -86.534 2.172 27.571 1.00 37.53 C
ATOM 1939 CD2 TYR H 32 -86.736 1.755 28.905 1.00 40.64 C
ATOM 1940 C TYR H 32 -88.977 0.369 32.787 1.00 34.36 C
ATOM 1941 O TYR H 32 -88.156 0.761 33.595 1.00 32.08 O
ATOM 1942 N TYR H 33 -89.827 -0.605 33.073 1.00 36.17 N
ATOM 1943 CA TYR H 33 -89.678 -1.381 34.311 1.00 33.98 C
ATOM 1944 CB TYR H 33 -90.813 -2.369 34.491 1.00 33.89 C
ATOM 1945 CG TYR H 33 -92.115 -1.790 35.045 1.00 35.27 C
ATOM 1946 CD1 TYR H 33 -92.933 -0.983 34.281 1.00 34.81 C
ATOM 1947 CE1 TYR H 33 -94.113 -0.486 34.811 1.00 37.20 C
ATOM 1948 CZ TYR H 33 -94.491 -0.829 36.100 1.00 34.56 C
ATOM 1949 OH TYR H 33 -95.621 -0.324 36.637 1.00 39.39 O
ATOM 1950 CE2 TYR H 33 -93.720 -1.621 36.873 1.00 32.51 C
ATOM 1951 CD2 TYR H 33 -92.547 -2.110 36.348 1.00 38.99 C
ATOM 1952 C TYR H 33 -88.360 -2.139 34.427 1.00 33.21 C
ATOM 1953 O TYR H 33 -87.748 -2.570 33.425 1.00 36.00 O
ATOM 1954 N ILE H 34 -87.938 -2.290 35.676 1.00 32.67 N
ATOM 1955 CA ILE H 34 -86.884 -3.171 36.058 1.00 31.72 C
ATOM 1956 CB ILE H 34 -85.929 -2.472 37.025 1.00 32.59 C
ATOM 1957 CG1 ILE H 34 -85.239 -1.290 36.342 1.00 35.63 C
ATOM 1958 CD1 ILE H 34 -84.192 -1.691 35.356 1.00 37.52 C
ATOM 1959 CG2 ILE H 34 -84.901 -3.426 37.593 1.00 33.19 C
ATOM 1960 C ILE H 34 -87.520 -4.306 36.796 1.00 34.00 C
ATOM 1961 O ILE H 34 -88.173 -4.067 37.797 1.00 42.33 O

ATOM 1962 N ASN H 35 -87.313 -5.541 36.367 1.00 31.42 N
ATOM 1963 CA ASN H 35 -87.801 -6.675 37.139 1.00 31.13 C
ATOM 1964 CB ASN H 35 -88.490 -7.748 36.277 1.00 32.69 C
ATOM 1965 CG ASN H 35 -89.721 -7.255 35.555 1.00 33.62 C
ATOM 1966 OD1 ASN H 35 -90.791 -7.821 35.722 1.00 34.26 O
ATOM 1967 ND2 ASN H 35 -89.576 -6.215 34.726 1.00 32.60 N
ATOM 1968 C ASN H 35 -86.585 -7.289 37.750 1.00 30.57 C
ATOM 1969 O ASN H 35 -85.496 -7.091 37.265 1.00 30.97 O
ATOM 1970 N TRP H 36 -86.781 -8.079 38.789 1.00 30.88 N
ATOM 1971 CA TRP H 36 -85.709 -8.859 39.356 1.00 33.68 C
ATOM 1972 CB TRP H 36 -85.449 -8.439 40.795 1.00 34.16 C
ATOM 1973 CG TRP H 36 -84.762 -7.074 40.957 1.00 36.96 C
ATOM 1974 CD1 TRP H 36 -85.358 -5.830 40.993 1.00 37.43 C
ATOM 1975 NE1 TRP H 36 -84.398 -4.855 41.186 1.00 39.72 N
ATOM 1976 CE2 TRP H 36 -83.172 -5.460 41.282 1.00 36.33 C
ATOM 1977 CD2 TRP H 36 -83.364 -6.851 41.149 1.00 36.40 C
ATOM 1978 CE3 TRP H 36 -82.258 -7.701 41.240 1.00 36.50 C
ATOM 1979 CZ3 TRP H 36 -81.028 -7.161 41.453 1.00 39.18 C
ATOM 1980 CH2 TRP H 36 -80.865 -5.763 41.568 1.00 42.20 C
ATOM 1981 CZ2 TRP H 36 -81.933 -4.905 41.492 1.00 36.88 C
ATOM 1982 C TRP H 36 -86.110 -10.343 39.254 1.00 32.44 C
ATOM 1983 O TRP H 36 -87.264 -10.705 39.549 1.00 32.14 O
ATOM 1984 N VAL H 37 -85.159 -11.168 38.841 1.00 28.91 N
ATOM 1985 CA VAL H 37 -85.337 -12.606 38.653 1.00 31.25 C
ATOM 1986 CB VAL H 37 -85.353 -12.992 37.139 1.00 30.35 C
ATOM 1987 CG1 VAL H 37 -85.561 -14.488 36.956 1.00 31.36 C
ATOM 1988 CG2 VAL H 37 -86.468 -12.276 36.376 1.00 30.46 C
ATOM 1989 C VAL H 37 -84.152 -13.316 39.313 1.00 31.81 C
ATOM 1990 O VAL H 37 -83.049 -12.865 39.143 1.00 32.44 O
ATOM 1991 N ARG H 38 -84.368 -14.459 39.978 1.00 32.39 N
ATOM 1992 CA ARG H 38 -83.265 -15.265 40.515 1.00 32.17 C
ATOM 1993 CB ARG H 38 -83.309 -15.213 42.017 1.00 36.39 C
ATOM 1994 CG ARG H 38 -84.533 -15.888 42.630 1.00 35.71 C
ATOM 1995 CD ARG H 38 -84.397 -15.928 44.149 1.00 33.79 C
ATOM 1996 NE ARG H 38 -85.434 -16.784 44.656 1.00 35.51 N
ATOM 1997 CZ ARG H 38 -85.798 -16.901 45.933 1.00 36.97 C
ATOM 1998 NH1 ARG H 38 -85.218 -16.202 46.920 1.00 37.41 N

ATOM 1999 NH2 ARG H 38 -86.732 -17.790 46.217 1.00 32.57 N
ATOM 2000 C ARG H 38 -83.163 -16.729 40.063 1.00 30.54 C
ATOM 2001 O ARG H 38 -84.099 -17.295 39.606 1.00 33.46 O
ATOM 2002 N GLN H 39 -81.990 -17.315 40.237 1.00 30.32 N
ATOM 2003 CA GLN H 39 -81.630 -18.610 39.732 1.00 29.37 C
ATOM 2004 CB GLN H 39 -80.844 -18.486 38.389 1.00 31.73 C
ATOM 2005 CG GLN H 39 -80.457 -19.825 37.733 1.00 29.81 C
ATOM 2006 CD GLN H 39 -80.227 -19.758 36.203 1.00 34.74 C
ATOM 2007 OE1 GLN H 39 -80.833 -20.543 35.417 1.00 37.29 O
ATOM 2008 NE2 GLN H 39 -79.318 -18.890 35.774 1.00 29.37 N
ATOM 2009 C GLN H 39 -80.761 -19.326 40.749 1.00 29.42 C
ATOM 2010 O GLN H 39 -79.570 -19.070 40.833 1.00 33.77 O
ATOM 2011 N ALA H 40 -81.346 -20.273 41.461 1.00 30.49 N
ATOM 2012 CA ALA H 40 -80.647 -21.044 42.458 1.00 33.16 C
ATOM 2013 CB ALA H 40 -81.616 -21.896 43.292 1.00 29.83 C
ATOM 2014 C ALA H 40 -79.631 -21.871 41.700 1.00 33.25 C
ATOM 2015 O ALA H 40 -79.839 -22.152 40.505 1.00 36.32 O
ATOM 2016 N PRO H 41 -78.482 -22.156 42.332 1.00 36.55 N
ATOM 2017 CA PRO H 41 -77.378 -22.750 41.531 1.00 38.32 C
ATOM 2018 CB PRO H 41 -76.219 -22.933 42.543 1.00 39.60 C
ATOM 2019 CG PRO H 41 -76.533 -21.940 43.655 1.00 39.56 C
ATOM 2020 CD PRO H 41 -78.070 -21.872 43.736 1.00 38.20 C
ATOM 2021 C PRO H 41 -77.747 -24.076 40.898 1.00 42.86 C
ATOM 2022 O PRO H 41 -78.162 -25.015 41.596 1.00 42.80 O
ATOM 2023 N GLY H 42 -77.630 -24.146 39.573 1.00 40.45 N
ATOM 2024 CA GLY H 42 -77.969 -25.387 38.872 1.00 40.96 C
ATOM 2025 C GLY H 42 -79.448 -25.614 38.609 1.00 41.77 C
ATOM 2026 O GLY H 42 -79.795 -26.700 38.198 1.00 42.83 O
ATOM 2027 N LYS H 43 -80.282 -24.564 38.710 1.00 40.48 N
ATOM 2028 CA LYS H 43 -81.756 -24.669 38.613 1.00 39.22 C
ATOM 2029 CB LYS H 43 -82.426 -24.589 40.031 1.00 47.88 C
ATOM 2030 CG LYS H 43 -82.356 -25.923 40.769 1.00 58.29 C
ATOM 2031 CD LYS H 43 -81.817 -25.844 42.191 1.00 70.51 C
ATOM 2032 CE LYS H 43 -82.895 -25.572 43.264 1.00 70.95 C
ATOM 2033 NZ LYS H 43 -82.504 -26.043 44.637 1.00 58.44 N
ATOM 2034 C LYS H 43 -82.304 -23.654 37.690 1.00 31.80 C
ATOM 2035 O LYS H 43 -81.576 -23.004 36.951 1.00 31.66 O

ATOM 2036 N GLY H 44 -83.623 -23.576 37.651 1.00 33.52 N
ATOM 2037 CA GLY H 44 -84.322 -22.661 36.786 1.00 35.21 C
ATOM 2038 C GLY H 44 -84.433 -21.276 37.380 1.00 34.55 C
ATOM 2039 O GLY H 44 -83.615 -20.876 38.168 1.00 40.25 O
ATOM 2040 N LEU H 45 -85.427 -20.537 36.937 1.00 33.61 N
ATOM 2041 CA LEU H 45 -85.538 -19.120 37.177 1.00 31.15 C
ATOM 2042 CB LEU H 45 -85.444 -18.375 35.854 1.00 31.17 C
ATOM 2043 CG LEU H 45 -84.098 -18.459 35.108 1.00 33.71 C
ATOM 2044 CD1 LEU H 45 -84.289 -18.617 33.607 1.00 35.35 C
ATOM 2045 CD2 LEU H 45 -83.250 -17.243 35.292 1.00 32.06 C
ATOM 2046 C LEU H 45 -86.863 -18.788 37.868 1.00 30.08 C
ATOM 2047 O LEU H 45 -87.919 -19.332 37.526 1.00 29.39 O
ATOM 2048 N GLU H 46 -86.816 -17.837 38.797 1.00 30.75 N
ATOM 2049 CA GLU H 46 -87.993 -17.398 39.469 1.00 31.25 C
ATOM 2050 CB GLU H 46 -87.958 -17.900 40.918 1.00 33.09 C
ATOM 2051 CG GLU H 46 -89.240 -17.629 41.703 1.00 36.35 C
ATOM 2052 CD GLU H 46 -89.129 -17.949 43.194 1.00 37.68 C
ATOM 2053 OE1 GLU H 46 -88.019 -18.223 43.706 1.00 38.33 O
ATOM 2054 OE2 GLU H 46 -90.161 -17.906 43.867 1.00 41.19 O
ATOM 2055 C GLU H 46 -88.066 -15.907 39.448 1.00 31.13 C
ATOM 2056 O GLU H 46 -87.115 -15.222 39.878 1.00 35.44 O
ATOM 2057 N TRP H 47 -89.228 -15.390 39.062 1.00 28.47 N
ATOM 2058 CA TRP H 47 -89.480 -13.974 39.139 1.00 30.54 C
ATOM 2059 CB TRP H 47 -90.696 -13.655 38.322 1.00 30.73 C
ATOM 2060 CG TRP H 47 -91.117 -12.214 38.281 1.00 31.72 C
ATOM 2061 CD1 TRP H 47 -90.610 -11.252 37.467 1.00 35.90 C
ATOM 2062 NE1 TRP H 47 -91.288 -10.065 37.648 1.00 36.15 N
ATOM 2063 CE2 TRP H 47 -92.257 -10.257 38.588 1.00 31.97 C
ATOM 2064 CD2 TRP H 47 -92.173 -11.601 39.015 1.00 30.78 C
ATOM 2065 CE3 TRP H 47 -93.087 -12.061 39.972 1.00 31.54 C
ATOM 2066 CZ3 TRP H 47 -94.037 -11.145 40.491 1.00 30.43 C
ATOM 2067 CH2 TRP H 47 -94.082 -9.829 40.034 1.00 30.69 C
ATOM 2068 CZ2 TRP H 47 -93.193 -9.369 39.085 1.00 31.33 C
ATOM 2069 C TRP H 47 -89.693 -13.506 40.583 1.00 30.65 C
ATOM 2070 O TRP H 47 -90.512 -14.066 41.294 1.00 36.64 O
ATOM 2071 N ILE H 48 -88.967 -12.469 40.981 1.00 31.31 N
ATOM 2072 CA ILE H 48 -89.067 -11.864 42.313 1.00 31.31 C

ATOM 2073 CB ILE H 48 -87.706 -11.329 42.742 1.00 33.68 C
ATOM 2074 CG1 ILE H 48 -86.695 -12.465 42.658 1.00 33.81 C
ATOM 2075 CD1 ILE H 48 -85.315 -12.156 43.147 1.00 34.48 C
ATOM 2076 CG2 ILE H 48 -87.808 -10.693 44.138 1.00 33.88 C
ATOM 2077 C ILE H 48 -90.034 -10.693 42.372 1.00 30.70 C
ATOM 2078 O ILE H 48 -90.830 -10.583 43.288 1.00 30.97 O
ATOM 2079 N GLY H 49 -89.948 -9.804 41.394 1.00 30.07 N
ATOM 2080 CA GLY H 49 -90.785 -8.635 41.378 1.00 31.61 C
ATOM 2081 C GLY H 49 -90.281 -7.548 40.450 1.00 34.81 C
ATOM 2082 O GLY H 49 -89.303 -7.751 39.713 1.00 36.08 O
ATOM 2083 N ASP H 50 -90.967 -6.397 40.493 1.00 35.02 N
ATOM 2084 CA ASP H 50 -90.597 -5.233 39.709 1.00 33.19 C
ATOM 2085 CB ASP H 50 -91.248 -5.364 38.336 1.00 35.52 C
ATOM 2086 CG ASP H 50 -92.716 -5.373 38.404 1.00 38.76 C
ATOM 2087 OD1 ASP H 50 -93.289 -4.490 39.076 1.00 43.13 O
ATOM 2088 OD2 ASP H 50 -93.312 -6.242 37.754 1.00 40.51 O
ATOM 2089 C ASP H 50 -90.925 -3.870 40.342 1.00 32.36 C
ATOM 2090 O ASP H 50 -91.658 -3.770 41.317 1.00 36.42 O
ATOM 2091 N ILE H 51 -90.334 -2.834 39.772 1.00 32.40 N
ATOM 2092 CA ILE H 51 -90.503 -1.452 40.177 1.00 32.36 C
ATOM 2093 CB ILE H 51 -89.373 -0.962 41.098 1.00 34.21 C
ATOM 2094 CG1 ILE H 51 -89.614 0.512 41.473 1.00 36.56 C
ATOM 2095 CD1 ILE H 51 -89.092 0.872 42.852 1.00 37.35 C
ATOM 2096 CG2 ILE H 51 -87.994 -1.097 40.456 1.00 32.58 C
ATOM 2097 C ILE H 51 -90.577 -0.554 38.949 1.00 32.05 C
ATOM 2098 O ILE H 51 -89.819 -0.735 37.992 1.00 37.88 O
ATOM 2099 N ASN H 52 -91.558 0.342 38.952 1.00 32.12 N
ATOM 2100 CA ASN H 52 -91.789 1.302 37.896 1.00 30.09 C
ATOM 2101 CB ASN H 52 -93.249 1.681 37.893 1.00 29.48 C
ATOM 2102 CG ASN H 52 -93.588 2.735 36.877 1.00 30.04 C
ATOM 2103 OD1 ASN H 52 -92.915 3.771 36.793 1.00 29.10 O
ATOM 2104 ND2 ASN H 52 -94.690 2.524 36.149 1.00 27.83 N
ATOM 2105 C ASN H 52 -90.953 2.533 38.226 1.00 35.91 C
ATOM 2106 O ASN H 52 -91.199 3.161 39.230 1.00 34.81 O
ATOM 2107 N PRO H 53 -89.966 2.901 37.380 1.00 38.18 N
ATOM 2108 CA PRO H 53 -89.049 3.938 37.834 1.00 40.96 C
ATOM 2109 CB PRO H 53 -87.777 3.635 37.048 1.00 41.03 C

ATOM 2110 CG PRO H 53 -88.267 3.008 35.807 1.00 43.28 C
ATOM 2111 CD PRO H 53 -89.565 2.320 36.094 1.00 39.08 C
ATOM 2112 C PRO H 53 -89.521 5.402 37.647 1.00 41.71 C
ATOM 2113 O PRO H 53 -88.848 6.288 38.065 1.00 41.47 O
ATOM 2114 N ILE H 54 -90.657 5.640 37.020 1.00 45.28 N
ATOM 2115 CA ILE H 54 -91.265 6.963 36.977 1.00 43.62 C
ATOM 2116 CB ILE H 54 -92.221 7.100 35.772 1.00 46.91 C
ATOM 2117 CG1 ILE H 54 -91.455 6.842 34.505 1.00 49.54 C
ATOM 2118 CD1 ILE H 54 -92.190 7.101 33.191 1.00 56.25 C
ATOM 2119 CG2 ILE H 54 -92.903 8.496 35.757 1.00 52.75 C
ATOM 2120 C ILE H 54 -92.119 7.156 38.244 1.00 44.12 C
ATOM 2121 O ILE H 54 -92.073 8.179 38.874 1.00 43.47 O
ATOM 2122 N THR H 55 -92.894 6.140 38.581 1.00 41.44 N
ATOM 2123 CA THR H 55 -93.987 6.222 39.521 1.00 45.32 C
ATOM 2124 CB THR H 55 -95.156 5.378 38.954 1.00 45.96 C
ATOM 2125 OG1 THR H 55 -95.750 6.115 37.888 1.00 52.72 O
ATOM 2126 CG2 THR H 55 -96.201 5.166 39.896 1.00 53.13 C
ATOM 2127 C THR H 55 -93.626 5.708 40.919 1.00 41.51 C
ATOM 2128 O THR H 55 -94.292 6.050 41.852 1.00 37.87 O
ATOM 2129 N GLY H 56 -92.637 4.827 41.044 1.00 39.23 N
ATOM 2130 CA GLY H 56 -92.376 4.101 42.301 1.00 37.29 C
ATOM 2131 C GLY H 56 -93.241 2.887 42.611 1.00 36.08 C
ATOM 2132 O GLY H 56 -92.971 2.161 43.569 1.00 40.11 O
ATOM 2133 N ASP H 57 -94.259 2.610 41.814 1.00 36.04 N
ATOM 2134 CA ASP H 57 -95.092 1.404 42.044 1.00 38.52 C
ATOM 2135 CB ASP H 57 -96.281 1.307 41.101 1.00 38.00 C
ATOM 2136 CG ASP H 57 -97.355 2.362 41.383 1.00 45.34 C
ATOM 2137 OD1 ASP H 57 -97.190 3.244 42.275 1.00 50.41 O
ATOM 2138 OD2 ASP H 57 -98.401 2.289 40.726 1.00 51.21 O
ATOM 2139 C ASP H 57 -94.289 0.133 41.881 1.00 38.88 C
ATOM 2140 O ASP H 57 -93.388 0.061 41.033 1.00 35.47 O
ATOM 2141 N THR H 58 -94.626 -0.835 42.725 1.00 38.79 N
ATOM 2142 CA THR H 58 -93.944 -2.086 42.816 1.00 38.17 C
ATOM 2143 CB THR H 58 -93.125 -2.147 44.111 1.00 39.99 C
ATOM 2144 OG1 THR H 58 -93.938 -1.774 45.236 1.00 40.48 O
ATOM 2145 CG2 THR H 58 -91.929 -1.118 44.049 1.00 40.49 C
ATOM 2146 C THR H 58 -94.912 -3.256 42.677 1.00 39.86 C

ATOM 2147 O THR H 58 -96.124 -3.118 42.856 1.00 38.27 O
ATOM 2148 N ASP H 59 -94.365 -4.397 42.257 1.00 40.56 N
ATOM 2149 CA ASP H 59 -95.046 -5.689 42.357 1.00 37.92 C
ATOM 2150 CB ASP H 59 -95.607 -6.162 41.011 1.00 37.01 C
ATOM 2151 CG ASP H 59 -96.302 -5.050 40.223 1.00 41.40 C
ATOM 2152 OD1 ASP H 59 -97.489 -4.784 40.544 1.00 43.10 O
ATOM 2153 OD2 ASP H 59 -95.679 -4.483 39.267 1.00 39.12 O
ATOM 2154 C ASP H 59 -94.049 -6.722 42.883 1.00 36.51 C
ATOM 2155 O ASP H 59 -92.861 -6.630 42.595 1.00 32.55 O
ATOM 2156 N TYR H 60 -94.573 -7.713 43.599 1.00 33.44 N
ATOM 2157 CA TYR H 60 -93.792 -8.685 44.300 1.00 37.12 C
ATOM 2158 CB TYR H 60 -93.767 -8.351 45.781 1.00 35.29 C
ATOM 2159 CG TYR H 60 -93.063 -7.084 46.124 1.00 34.04 C
ATOM 2160 CD1 TYR H 60 -91.694 -7.078 46.296 1.00 33.40 C
ATOM 2161 CE1 TYR H 60 -91.029 -5.907 46.610 1.00 37.51 C
ATOM 2162 CZ TYR H 60 -91.749 -4.715 46.789 1.00 38.57 C
ATOM 2163 OH TYR H 60 -91.034 -3.577 47.068 1.00 35.69 O
ATOM 2164 CE2 TYR H 60 -93.131 -4.687 46.618 1.00 35.25 C
ATOM 2165 CD2 TYR H 60 -93.776 -5.869 46.273 1.00 36.12 C
ATOM 2166 C TYR H 60 -94.437 -10.035 44.167 1.00 38.77 C
ATOM 2167 O TYR H 60 -95.641 -10.127 44.323 1.00 41.62 O
ATOM 2168 N ASN H 61 -93.654 -11.081 43.898 1.00 38.36 N
ATOM 2169 CA ASN H 61 -94.155 -12.453 44.066 1.00 38.85 C
ATOM 2170 CB ASN H 61 -93.143 -13.462 43.555 1.00 38.65 C
ATOM 2171 CG ASN H 61 -93.786 -14.635 42.825 1.00 35.65 C
ATOM 2172 OD1 ASN H 61 -94.943 -14.941 43.015 1.00 32.97 O
ATOM 2173 ND2 ASN H 61 -93.010 -15.285 41.966 1.00 34.01 N
ATOM 2174 C ASN H 61 -94.492 -12.768 45.578 1.00 41.41 C
ATOM 2175 O ASN H 61 -93.968 -12.145 46.531 1.00 38.14 O
ATOM 2176 N ALA H 62 -95.353 -13.754 45.770 1.00 39.68 N
ATOM 2177 CA ALA H 62 -95.979 -14.021 47.079 1.00 43.59 C
ATOM 2178 CB ALA H 62 -96.739 -15.351 47.019 1.00 41.52 C
ATOM 2179 C ALA H 62 -95.012 -14.030 48.274 1.00 36.78 C
ATOM 2180 O ALA H 62 -95.309 -13.479 49.292 1.00 39.43 O
ATOM 2181 N ASP H 63 -93.870 -14.663 48.124 1.00 38.29 N
ATOM 2182 CA ASP H 63 -92.925 -14.903 49.218 1.00 43.85 C
ATOM 2183 CB ASP H 63 -92.155 -16.211 48.912 1.00 48.14 C

ATOM 2184 CG ASP H 63 -91.204 -16.641 50.030 1.00 55.13 C
ATOM 2185 OD1 ASP H 63 -91.633 -16.667 51.216 1.00 58.93 O
ATOM 2186 OD2 ASP H 63 -90.038 -16.981 49.699 1.00 56.81 O
ATOM 2187 C ASP H 63 -91.933 -13.710 49.458 1.00 45.68 C
ATOM 2188 O ASP H 63 -91.014 -13.814 50.293 1.00 38.09 O
ATOM 2189 N PHE H 64 -92.106 -12.603 48.722 1.00 39.89 N
ATOM 2190 CA PHE H 64 -91.210 -11.468 48.841 1.00 39.72 C
ATOM 2191 CB PHE H 64 -90.507 -11.249 47.487 1.00 33.82 C
ATOM 2192 CG PHE H 64 -89.935 -12.495 46.940 1.00 34.45 C
ATOM 2193 CD1 PHE H 64 -89.027 -13.215 47.676 1.00 38.01 C
ATOM 2194 CE1 PHE H 64 -88.485 -14.404 47.204 1.00 35.16 C
ATOM 2195 CZ PHE H 64 -88.879 -14.869 45.985 1.00 34.98 C
ATOM 2196 CE2 PHE H 64 -89.790 -14.144 45.233 1.00 33.93 C
ATOM 2197 CD2 PHE H 64 -90.331 -12.984 45.717 1.00 34.43 C
ATOM 2198 C PHE H 64 -91.883 -10.204 49.363 1.00 38.43 C
ATOM 2199 O PHE H 64 -91.192 -9.289 49.810 1.00 37.50 O
ATOM 2200 N LYS H 65 -93.208 -10.182 49.335 1.00 41.49 N
ATOM 2201 CA LYS H 65 -94.020 -9.094 49.948 1.00 49.44 C
ATOM 2202 CB LYS H 65 -95.547 -9.385 49.894 1.00 54.38 C
ATOM 2203 CG LYS H 65 -96.034 -10.113 48.636 1.00 60.77 C
ATOM 2204 CD LYS H 65 -97.485 -9.887 48.257 1.00 66.98 C
ATOM 2205 CE LYS H 65 -97.881 -10.780 47.073 1.00 72.23 C
ATOM 2206 NZ LYS H 65 -98.776 -10.081 46.104 1.00 76.63 N
ATOM 2207 C LYS H 65 -93.572 -8.904 51.396 1.00 48.12 C
ATOM 2208 O LYS H 65 -93.182 -9.866 52.096 1.00 48.73 O
ATOM 2209 N ARG H 66 -93.597 -7.669 51.851 1.00 49.93 N
ATOM 2210 CA ARG H 66 -93.047 -7.343 53.189 1.00 57.38 C
ATOM 2211 CB ARG H 66 -93.769 -8.043 54.381 1.00 57.33 C
ATOM 2212 CG ARG H 66 -95.189 -7.535 54.612 1.00 71.54 C
ATOM 2213 CD ARG H 66 -95.739 -7.888 56.010 1.00 79.90 C
ATOM 2214 NE ARG H 66 -95.372 -6.897 57.045 1.00 87.72 N
ATOM 2215 CZ ARG H 66 -95.984 -5.718 57.265 1.00 76.12 C
ATOM 2216 NH1 ARG H 66 -97.042 -5.325 56.542 1.00 74.00 N
ATOM 2217 NH2 ARG H 66 -95.532 -4.917 58.219 1.00 63.16 N
ATOM 2218 C ARG H 66 -91.513 -7.511 53.289 1.00 47.38 C
ATOM 2219 O ARG H 66 -90.885 -6.500 53.438 1.00 49.82 O
ATOM 2220 N ARG H 67 -90.949 -8.737 53.290 1.00 41.00 N

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ATOM  2221  CA  ARG H  67     -89.474  -8.981  53.452  1.00 39.83           C
ATOM  2222  CB  ARG H  67     -89.054 -10.412  53.063  1.00 40.29           C
ATOM  2223  CG  ARG H  67     -89.621 -11.537  53.805  1.00 47.25           C
ATOM  2224  CD  ARG H  67     -88.764 -12.786  53.636  1.00 44.83           C
ATOM  2225  NE  ARG H  67     -88.822 -13.484  52.365  1.00 37.82           N
ATOM  2226  CZ  ARG H  67     -87.840 -14.261  51.914  1.00 37.87           C
ATOM  2227  NH1 ARG H  67     -86.655 -14.359  52.565  1.00 36.25           N
ATOM  2228  NH2 ARG H  67     -87.988 -14.870  50.755  1.00 35.59           N
ATOM  2229  C   ARG H  67     -88.547  -8.154  52.495  1.00 36.43           C
ATOM  2230  O   ARG H  67     -87.409  -7.847  52.851  1.00 33.69           O
ATOM  2231  N   PHE H  68     -88.964  -7.986  51.249  1.00 31.95           N
ATOM  2232  CA  PHE H  68     -88.102  -7.371  50.216  1.00 37.74           C
ATOM  2233  CB  PHE H  68     -88.032  -8.192  48.912  1.00 33.25           C
ATOM  2234  CG  PHE H  68     -87.213  -9.433  48.959  1.00 31.60           C
ATOM  2235  CD1 PHE H  68     -86.755 -10.017  50.135  1.00 31.13           C
ATOM  2236  CE1 PHE H  68     -86.003 -11.218  50.091  1.00 31.92           C
ATOM  2237  CZ  PHE H  68     -85.708 -11.844  48.864  1.00 30.88           C
ATOM  2238  CE2 PHE H  68     -86.144 -11.255  47.686  1.00 31.00           C
ATOM  2239  CD2 PHE H  68     -86.914 -10.076  47.732  1.00 32.46           C
ATOM  2240  C   PHE H  68     -88.757  -6.053  49.823  1.00 37.97           C
ATOM  2241  O   PHE H  68     -89.986  -5.983  49.725  1.00 39.85           O
ATOM  2242  N   THR H  69     -87.936  -5.055  49.522  1.00 36.25           N
ATOM  2243  CA  THR H  69     -88.415  -3.770  49.082  1.00 36.42           C
ATOM  2244  CB  THR H  69     -88.363  -2.727  50.236  1.00 40.90           C
ATOM  2245  OG1 THR H  69     -89.103  -3.203  51.346  1.00 42.60           O
ATOM  2246  CG2 THR H  69     -89.012  -1.379  49.807  1.00 46.76           C
ATOM  2247  C   THR H  69     -87.529  -3.251  47.958  1.00 34.44           C
ATOM  2248  O   THR H  69     -86.295  -3.251  48.080  1.00 34.84           O
ATOM  2249  N   PHE H  70     -88.172  -2.739  46.912  1.00 32.78           N
ATOM  2250  CA  PHE H  70     -87.473  -2.113  45.797  1.00 34.72           C
ATOM  2251  CB  PHE H  70     -88.132  -2.391  44.456  1.00 33.80           C
ATOM  2252  CG  PHE H  70     -88.235  -3.843  44.099  1.00 37.13           C
ATOM  2253  CD1 PHE H  70     -87.109  -4.600  43.909  1.00 43.23           C
ATOM  2254  CE1 PHE H  70     -87.204  -5.941  43.543  1.00 42.96           C
ATOM  2255  CZ  PHE H  70     -88.444  -6.534  43.392  1.00 44.21           C
ATOM  2256  CE2 PHE H  70     -89.576  -5.779  43.580  1.00 40.08           C
ATOM  2257  CD2 PHE H  70     -89.464  -4.445  43.914  1.00 39.83           C
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ATOM 2258 C PHE H 70 -87.474 -0.615 46.031 1.00 35.93 C
ATOM 2259 O PHE H 70 -88.414 -0.071 46.586 1.00 35.76 O
ATOM 2260 N SER H 71 -86.386 0.046 45.650 1.00 37.68 N
ATOM 2261 CA SER H 71 -86.373 1.501 45.602 1.00 36.09 C
ATOM 2262 CB SER H 71 -86.035 2.077 46.960 1.00 35.16 C
ATOM 2263 OG SER H 71 -84.723 1.744 47.282 1.00 41.10 O
ATOM 2264 C SER H 71 -85.411 1.947 44.518 1.00 36.84 C
ATOM 2265 O SER H 71 -84.827 1.128 43.794 1.00 40.70 O
ATOM 2266 N LEU H 72 -85.302 3.244 44.367 1.00 36.44 N
ATOM 2267 CA LEU H 72 -84.656 3.862 43.237 1.00 35.87 C
ATOM 2268 CB LEU H 72 -85.729 4.572 42.437 1.00 36.14 C
ATOM 2269 CG LEU H 72 -86.853 3.692 41.922 1.00 40.19 C
ATOM 2270 CD1 LEU H 72 -88.059 4.549 41.545 1.00 39.76 C
ATOM 2271 CD2 LEU H 72 -86.351 2.885 40.720 1.00 40.71 C
ATOM 2272 C LEU H 72 -83.629 4.904 43.651 1.00 35.84 C
ATOM 2273 O LEU H 72 -83.727 5.542 44.720 1.00 35.01 O
ATOM 2274 N ASP H 73 -82.610 5.046 42.802 1.00 36.65 N
ATOM 2275 CA ASP H 73 -81.922 6.298 42.652 1.00 33.78 C
ATOM 2276 CB ASP H 73 -80.544 6.279 43.280 1.00 34.41 C
ATOM 2277 CG ASP H 73 -79.814 7.607 43.097 1.00 35.97 C
ATOM 2278 OD1 ASP H 73 -80.332 8.537 42.396 1.00 35.89 O
ATOM 2279 OD2 ASP H 73 -78.713 7.721 43.635 1.00 40.35 O
ATOM 2280 C ASP H 73 -81.814 6.630 41.196 1.00 32.61 C
ATOM 2281 O ASP H 73 -80.808 6.301 40.560 1.00 31.68 O
ATOM 2282 N THR H 74 -82.797 7.356 40.687 1.00 36.08 N
ATOM 2283 CA THR H 74 -82.790 7.722 39.265 1.00 34.59 C
ATOM 2284 CB THR H 74 -84.111 8.320 38.800 1.00 35.23 C
ATOM 2285 OG1 THR H 74 -84.309 9.559 39.443 1.00 35.78 O
ATOM 2286 CG2 THR H 74 -85.308 7.404 39.149 1.00 36.89 C
ATOM 2287 C THR H 74 -81.681 8.711 38.896 1.00 41.02 C
ATOM 2288 O THR H 74 -81.321 8.781 37.716 1.00 41.65 O
ATOM 2289 N SER H 75 -81.100 9.439 39.874 1.00 41.37 N
ATOM 2290 CA SER H 75 -79.918 10.262 39.584 1.00 36.60 C
ATOM 2291 CB SER H 75 -79.505 11.121 40.787 1.00 37.39 C
ATOM 2292 OG SER H 75 -78.679 10.377 41.710 1.00 40.52 O
ATOM 2293 C SER H 75 -78.692 9.422 39.128 1.00 36.94 C
ATOM 2294 O SER H 75 -77.751 9.963 38.559 1.00 33.94 O

ATOM 2295 N LYS H 76 -78.642 8.142 39.457 1.00 36.35 N
ATOM 2296 CA LYS H 76 -77.580 7.271 38.931 1.00 36.93 C
ATOM 2297 CB LYS H 76 -76.747 6.718 40.087 1.00 42.87 C
ATOM 2298 CG LYS H 76 -75.927 7.796 40.695 1.00 44.47 C
ATOM 2299 CD LYS H 76 -75.318 7.396 42.004 1.00 52.66 C
ATOM 2300 CE LYS H 76 -74.471 8.590 42.457 1.00 57.18 C
ATOM 2301 NZ LYS H 76 -73.788 8.334 43.737 1.00 65.12 N
ATOM 2302 C LYS H 76 -78.122 6.125 38.087 1.00 31.48 C
ATOM 2303 O LYS H 76 -77.463 5.143 37.927 1.00 29.08 O
ATOM 2304 N SER H 77 -79.320 6.274 37.555 1.00 31.35 N
ATOM 2305 CA SER H 77 -79.985 5.219 36.791 1.00 37.26 C
ATOM 2306 CB SER H 77 -79.465 5.226 35.340 1.00 36.51 C
ATOM 2307 OG SER H 77 -79.838 6.473 34.760 1.00 35.81 O
ATOM 2308 C SER H 77 -79.858 3.847 37.426 1.00 36.61 C
ATOM 2309 O SER H 77 -79.486 2.884 36.748 1.00 32.90 O
ATOM 2310 N THR H 78 -80.209 3.783 38.717 1.00 35.25 N
ATOM 2311 CA THR H 78 -80.066 2.586 39.526 1.00 35.97 C
ATOM 2312 CB THR H 78 -78.904 2.802 40.507 1.00 38.51 C
ATOM 2313 OG1 THR H 78 -77.716 3.053 39.742 1.00 42.56 O
ATOM 2314 CG2 THR H 78 -78.632 1.626 41.388 1.00 40.56 C
ATOM 2315 C THR H 78 -81.377 2.182 40.234 1.00 38.77 C
ATOM 2316 O THR H 78 -82.186 3.038 40.665 1.00 35.57 O
ATOM 2317 N ALA H 79 -81.587 0.867 40.335 1.00 33.60 N
ATOM 2318 CA ALA H 79 -82.694 0.306 41.064 1.00 30.62 C
ATOM 2319 CB ALA H 79 -83.531 -0.549 40.162 1.00 38.30 C
ATOM 2320 C ALA H 79 -82.081 -0.517 42.125 1.00 31.06 C
ATOM 2321 O ALA H 79 -81.058 -1.165 41.895 1.00 31.45 O
ATOM 2322 N TYR H 80 -82.690 -0.496 43.301 1.00 29.26 N
ATOM 2323 CA TYR H 80 -82.193 -1.260 44.422 1.00 32.75 C
ATOM 2324 CB TYR H 80 -81.978 -0.336 45.625 1.00 37.19 C
ATOM 2325 CG TYR H 80 -80.946 0.762 45.478 1.00 39.35 C
ATOM 2326 CD1 TYR H 80 -79.613 0.467 45.383 1.00 44.75 C
ATOM 2327 CE1 TYR H 80 -78.655 1.469 45.270 1.00 50.78 C
ATOM 2328 CZ TYR H 80 -79.041 2.796 45.298 1.00 53.83 C
ATOM 2329 OH TYR H 80 -78.086 3.771 45.191 1.00 59.63 O
ATOM 2330 CE2 TYR H 80 -80.371 3.125 45.460 1.00 47.95 C
ATOM 2331 CD2 TYR H 80 -81.312 2.103 45.542 1.00 47.50 C

ATOM 2332 C TYR H 80 -83.185 -2.371 44.794 1.00 32.15 C
ATOM 2333 O TYR H 80 -84.405 -2.260 44.553 1.00 31.75 O
ATOM 2334 N LEU H 81 -82.653 -3.442 45.381 1.00 33.51 N
ATOM 2335 CA LEU H 81 -83.452 -4.527 45.952 1.00 31.34 C
ATOM 2336 CB LEU H 81 -83.323 -5.805 45.131 1.00 32.53 C
ATOM 2337 CG LEU H 81 -83.710 -7.173 45.780 1.00 36.56 C
ATOM 2338 CD1 LEU H 81 -85.047 -7.148 46.542 1.00 33.81 C
ATOM 2339 CD2 LEU H 81 -83.763 -8.274 44.715 1.00 41.52 C
ATOM 2340 C LEU H 81 -82.956 -4.766 47.347 1.00 32.44 C
ATOM 2341 O LEU H 81 -81.860 -5.354 47.548 1.00 34.22 O
ATOM 2342 N GLN H 82 -83.731 -4.306 48.324 1.00 32.80 N
ATOM 2343 CA GLN H 82 -83.356 -4.495 49.712 1.00 34.35 C
ATOM 2344 CB GLN H 82 -83.727 -3.262 50.551 1.00 35.71 C
ATOM 2345 CG GLN H 82 -83.529 -3.406 52.047 1.00 35.41 C
ATOM 2346 CD GLN H 82 -82.070 -3.541 52.434 1.00 41.85 C
ATOM 2347 OE1 GLN H 82 -81.322 -2.550 52.379 1.00 43.61 O
ATOM 2348 NE2 GLN H 82 -81.659 -4.746 52.893 1.00 35.79 N
ATOM 2349 C GLN H 82 -84.043 -5.750 50.235 1.00 32.75 C
ATOM 2350 O GLN H 82 -85.267 -5.812 50.230 1.00 33.45 O
ATOM 2351 N MET H 83 -83.273 -6.711 50.737 1.00 28.92 N
ATOM 2352 CA MET H 83 -83.847 -7.964 51.195 1.00 30.84 C
ATOM 2353 CB MET H 83 -83.175 -9.140 50.471 1.00 33.49 C
ATOM 2354 CG MET H 83 -83.297 -9.124 48.942 1.00 38.35 C
ATOM 2355 SD MET H 83 -82.638 -10.584 48.058 1.00 35.81 S
ATOM 2356 CE MET H 83 -80.876 -10.422 48.234 1.00 34.34 C
ATOM 2357 C MET H 83 -83.645 -8.092 52.698 1.00 32.71 C
ATOM 2358 O MET H 83 -82.641 -7.616 53.229 1.00 35.49 O
ATOM 2359 N SER H 84 -84.586 -8.735 53.380 1.00 32.10 N
ATOM 2360 CA SER H 84 -84.436 -9.067 54.809 1.00 35.53 C
ATOM 2361 CB SER H 84 -85.048 -7.975 55.679 1.00 35.64 C
ATOM 2362 OG SER H 84 -86.287 -7.556 55.144 1.00 37.59 O
ATOM 2363 C SER H 84 -85.105 -10.419 55.141 1.00 33.81 C
ATOM 2364 O SER H 84 -85.888 -10.914 54.367 1.00 37.92 O
ATOM 2365 N SER H 85 -84.783 -10.978 56.290 1.00 31.01 N
ATOM 2366 CA SER H 85 -85.268 -12.294 56.751 1.00 34.21 C
ATOM 2367 CB SER H 85 -86.785 -12.268 57.044 1.00 33.00 C
ATOM 2368 OG SER H 85 -87.109 -11.122 57.776 1.00 40.90 O

ATOM 2369 C SER H 85 -84.903 -13.379 55.713 1.00 29.91 C
ATOM 2370 O SER H 85 -85.727 -14.115 55.213 1.00 30.17 O
ATOM 2371 N LEU H 86 -83.654 -13.377 55.348 1.00 30.08 N
ATOM 2372 CA LEU H 86 -83.171 -14.209 54.294 1.00 28.66 C
ATOM 2373 CB LEU H 86 -81.888 -13.618 53.765 1.00 28.56 C
ATOM 2374 CG LEU H 86 -82.050 -12.526 52.716 1.00 32.36 C
ATOM 2375 CD1 LEU H 86 -80.678 -11.886 52.474 1.00 35.95 C
ATOM 2376 CD2 LEU H 86 -82.564 -13.082 51.383 1.00 34.59 C
ATOM 2377 C LEU H 86 -82.966 -15.616 54.868 1.00 32.90 C
ATOM 2378 O LEU H 86 -82.673 -15.782 56.075 1.00 30.79 O
ATOM 2379 N ARG H 87 -83.143 -16.627 54.019 1.00 32.26 N
ATOM 2380 CA ARG H 87 -83.067 -18.020 54.450 1.00 32.89 C
ATOM 2381 CB ARG H 87 -84.414 -18.713 54.471 1.00 37.42 C
ATOM 2382 CG ARG H 87 -85.509 -17.968 55.230 1.00 42.82 C
ATOM 2383 CD ARG H 87 -86.838 -18.746 55.134 1.00 46.51 C
ATOM 2384 NE ARG H 87 -87.848 -17.790 54.795 1.00 50.98 N
ATOM 2385 CZ ARG H 87 -88.607 -17.744 53.710 1.00 47.73 C
ATOM 2386 NH1 ARG H 87 -88.642 -18.705 52.803 1.00 50.82 N
ATOM 2387 NH2 ARG H 87 -89.410 -16.695 53.576 1.00 50.04 N
ATOM 2388 C ARG H 87 -82.226 -18.707 53.482 1.00 30.84 C
ATOM 2389 O ARG H 87 -81.919 -18.180 52.413 1.00 29.43 O
ATOM 2390 N ALA H 88 -81.844 -19.908 53.856 1.00 30.64 N
ATOM 2391 CA ALA H 88 -80.895 -20.649 53.057 1.00 33.15 C
ATOM 2392 CB ALA H 88 -80.636 -22.014 53.699 1.00 33.30 C
ATOM 2393 C ALA H 88 -81.413 -20.804 51.630 1.00 32.76 C
ATOM 2394 O ALA H 88 -80.600 -20.743 50.701 1.00 34.28 O
ATOM 2395 N GLU H 89 -82.746 -21.021 51.485 1.00 31.96 N
ATOM 2396 CA GLU H 89 -83.449 -21.230 50.162 1.00 36.69 C
ATOM 2397 CB GLU H 89 -85.009 -21.429 50.168 1.00 38.11 C
ATOM 2398 CG GLU H 89 -85.774 -22.229 51.140 1.00 46.12 C
ATOM 2399 CD GLU H 89 -85.863 -21.660 52.545 1.00 44.91 C
ATOM 2400 OE1 GLU H 89 -84.810 -21.780 53.201 1.00 34.55 O
ATOM 2401 OE2 GLU H 89 -86.979 -21.265 53.007 1.00 47.58 O
ATOM 2402 C GLU H 89 -83.391 -19.966 49.283 1.00 31.76 C
ATOM 2403 O GLU H 89 -83.767 -20.066 48.161 1.00 33.65 O
ATOM 2404 N ASP H 90 -83.111 -18.794 49.835 1.00 29.16 N
ATOM 2405 CA ASP H 90 -82.944 -17.597 49.040 1.00 28.44 C

ATOM 2406 CB ASP H 90 -83.087 -16.351 49.924 1.00 29.00 C
ATOM 2407 CG ASP H 90 -84.438 -16.216 50.528 1.00 29.19 C
ATOM 2408 OD1 ASP H 90 -85.408 -16.209 49.779 1.00 29.77 O
ATOM 2409 OD2 ASP H 90 -84.526 -15.998 51.744 1.00 29.00 O
ATOM 2410 C ASP H 90 -81.579 -17.562 48.314 1.00 26.46 C
ATOM 2411 O ASP H 90 -81.288 -16.628 47.556 1.00 26.25 O
ATOM 2412 N THR H 91 -80.735 -18.546 48.521 1.00 28.11 N
ATOM 2413 CA THR H 91 -79.394 -18.573 47.885 1.00 29.14 C
ATOM 2414 CB THR H 91 -78.600 -19.808 48.362 1.00 29.80 C
ATOM 2415 OG1 THR H 91 -78.369 -19.709 49.771 1.00 31.50 O
ATOM 2416 CG2 THR H 91 -77.295 -19.979 47.599 1.00 30.32 C
ATOM 2417 C THR H 91 -79.546 -18.699 46.403 1.00 30.08 C
ATOM 2418 O THR H 91 -80.187 -19.632 45.925 1.00 34.91 O
ATOM 2419 N ALA H 92 -78.917 -17.802 45.661 1.00 34.26 N
ATOM 2420 CA ALA H 92 -79.068 -17.785 44.197 1.00 32.99 C
ATOM 2421 CB ALA H 92 -80.507 -17.602 43.861 1.00 31.09 C
ATOM 2422 C ALA H 92 -78.279 -16.635 43.565 1.00 36.03 C
ATOM 2423 O ALA H 92 -77.817 -15.731 44.270 1.00 35.67 O
ATOM 2424 N VAL H 93 -78.156 -16.693 42.241 1.00 31.28 N
ATOM 2425 CA VAL H 93 -77.705 -15.588 41.423 1.00 30.97 C
ATOM 2426 CB VAL H 93 -77.101 -16.050 40.074 1.00 31.81 C
ATOM 2427 CG1 VAL H 93 -76.876 -14.895 39.145 1.00 30.29 C
ATOM 2428 CG2 VAL H 93 -75.793 -16.774 40.293 1.00 32.41 C
ATOM 2429 C VAL H 93 -78.927 -14.742 41.194 1.00 32.15 C
ATOM 2430 O VAL H 93 -79.994 -15.253 40.810 1.00 31.04 O
ATOM 2431 N TYR H 94 -78.779 -13.451 41.486 1.00 32.29 N
ATOM 2432 CA TYR H 94 -79.882 -12.506 41.398 1.00 31.85 C
ATOM 2433 CB TYR H 94 -80.004 -11.638 42.658 1.00 29.14 C
ATOM 2434 CG TYR H 94 -80.642 -12.353 43.773 1.00 28.19 C
ATOM 2435 CD1 TYR H 94 -79.995 -13.349 44.417 1.00 27.41 C
ATOM 2436 CE1 TYR H 94 -80.632 -14.047 45.414 1.00 25.66 C
ATOM 2437 CZ TYR H 94 -81.927 -13.741 45.804 1.00 26.99 C
ATOM 2438 OH TYR H 94 -82.554 -14.453 46.799 1.00 26.90 O
ATOM 2439 CE2 TYR H 94 -82.614 -12.743 45.202 1.00 29.17 C
ATOM 2440 CD2 TYR H 94 -81.971 -12.048 44.175 1.00 34.32 C
ATOM 2441 C TYR H 94 -79.559 -11.652 40.207 1.00 33.30 C
ATOM 2442 O TYR H 94 -78.459 -11.086 40.144 1.00 38.04 O

ATOM 2443 N TYR H 95 -80.527 -11.574 39.291 1.00 29.90 N
ATOM 2444 CA TYR H 95 -80.463 -10.755 38.129 1.00 30.70 C
ATOM 2445 CB TYR H 95 -80.834 -11.576 36.886 1.00 32.97 C
ATOM 2446 CG TYR H 95 -79.886 -12.685 36.482 1.00 34.53 C
ATOM 2447 CD1 TYR H 95 -78.707 -12.419 35.677 1.00 35.54 C
ATOM 2448 CE1 TYR H 95 -77.879 -13.436 35.273 1.00 31.88 C
ATOM 2449 CZ TYR H 95 -78.225 -14.742 35.613 1.00 35.96 C
ATOM 2450 OH TYR H 95 -77.493 -15.822 35.259 1.00 32.93 O
ATOM 2451 CE2 TYR H 95 -79.355 -15.010 36.367 1.00 37.31 C
ATOM 2452 CD2 TYR H 95 -80.191 -13.983 36.769 1.00 32.87 C
ATOM 2453 C TYR H 95 -81.469 -9.615 38.155 1.00 28.50 C
ATOM 2454 O TYR H 95 -82.493 -9.745 38.758 1.00 27.25 O
ATOM 2455 N ACYS H 96 -81.167 -8.515 37.473 0.50 28.91 N
ATOM 2456 N BCYS H 96 -81.167 -8.515 37.473 0.50 28.91 N
ATOM 2457 CA ACYS H 96 -82.182 -7.553 37.093 0.50 32.49 C
ATOM 2458 CA BCYS H 96 -82.182 -7.553 37.093 0.50 32.49 C
ATOM 2459 CB ACYS H 96 -81.813 -6.147 37.539 0.50 36.97 C
ATOM 2460 CB BCYS H 96 -81.813 -6.147 37.539 0.50 36.97 C
ATOM 2461 SG ACYS H 96 -80.278 -5.525 36.844 0.50 43.19 S
ATOM 2462 SG BCYS H 96 -80.278 -5.525 36.845 0.50 43.19 S
ATOM 2463 C ACYS H 96 -82.261 -7.623 35.593 0.50 31.68 C
ATOM 2464 C BCYS H 96 -82.261 -7.623 35.593 0.50 31.68 C
ATOM 2465 O ACYS H 96 -81.258 -8.000 34.943 0.50 31.01 O
ATOM 2466 O BCYS H 96 -81.258 -8.000 34.943 0.50 31.01 O
ATOM 2467 N THR H 97 -83.447 -7.308 35.065 1.00 28.32 N
ATOM 2468 CA THR H 97 -83.694 -7.183 33.632 1.00 31.55 C
ATOM 2469 CB THR H 97 -84.718 -8.209 33.060 1.00 33.85 C
ATOM 2470 OG1 THR H 97 -85.210 -9.091 34.072 1.00 39.26 O
ATOM 2471 CG2 THR H 97 -84.172 -8.918 31.921 1.00 31.64 C
ATOM 2472 C THR H 97 -84.523 -5.975 33.350 1.00 29.64 C
ATOM 2473 O THR H 97 -85.326 -5.662 34.166 1.00 31.82 O
ATOM 2474 N ARG H 98 -84.495 -5.436 32.135 1.00 31.38 N
ATOM 2475 CA ARG H 98 -85.528 -4.493 31.770 1.00 34.30 C
ATOM 2476 CB ARG H 98 -84.987 -3.142 31.288 1.00 35.85 C
ATOM 2477 CG ARG H 98 -84.546 -2.986 29.903 1.00 44.37 C
ATOM 2478 CD ARG H 98 -85.508 -2.199 28.971 1.00 44.04 C
ATOM 2479 NE ARG H 98 -84.643 -1.388 28.207 1.00 39.63 N

ATOM 2480 CZ ARG H 98 -84.556 -1.213 26.907 1.00 37.74 C
ATOM 2481 NH1 ARG H 98 -85.400 -1.656 25.999 1.00 40.70 N
ATOM 2482 NH2 ARG H 98 -83.552 -0.447 26.534 1.00 42.20 N
ATOM 2483 C ARG H 98 -86.649 -5.054 30.929 1.00 35.84 C
ATOM 2484 O ARG H 98 -86.474 -5.982 30.142 1.00 36.71 O
ATOM 2485 N GLU H 99 -87.835 -4.527 31.193 1.00 34.17 N
ATOM 2486 CA GLU H 99 -89.023 -4.986 30.552 1.00 33.93 C
ATOM 2487 CB GLU H 99 -90.180 -5.003 31.522 1.00 29.00 C
ATOM 2488 CG GLU H 99 -91.403 -5.708 30.958 1.00 28.78 C
ATOM 2489 CD GLU H 99 -92.472 -5.935 32.001 1.00 29.98 C
ATOM 2490 OE1 GLU H 99 -93.643 -5.941 31.565 1.00 31.19 O
ATOM 2491 OE2 GLU H 99 -92.139 -6.117 33.220 1.00 27.76 O
ATOM 2492 C GLU H 99 -89.234 -4.039 29.413 1.00 31.73 C
ATOM 2493 O GLU H 99 -89.599 -2.902 29.601 1.00 31.79 O
ATOM 2494 N GLY H 100 -89.022 -4.509 28.212 1.00 40.82 N
ATOM 2495 CA GLY H 100 -88.304 -3.580 27.188 1.00 44.54 C
ATOM 2496 C GLY H 100 -89.053 -4.086 26.119 1.00 44.23 C
ATOM 2497 O GLY H 100 -90.280 -4.106 26.254 1.00 75.19 O
ATOM 2498 N PRO H 101 -88.392 -4.652 25.139 1.00 40.03 N
ATOM 2499 CA PRO H 101 -89.195 -5.672 24.444 1.00 37.27 C
ATOM 2500 CB PRO H 101 -88.475 -5.883 23.103 1.00 42.88 C
ATOM 2501 CG PRO H 101 -87.231 -5.054 23.166 1.00 40.81 C
ATOM 2502 CD PRO H 101 -87.120 -4.349 24.473 1.00 39.90 C
ATOM 2503 C PRO H 101 -89.145 -6.903 25.279 1.00 32.24 C
ATOM 2504 O PRO H 101 -88.053 -7.340 25.700 1.00 34.41 O
ATOM 2505 N SER H 103 -90.291 -7.789 26.203 1.00 31.44 N
ATOM 2506 CA SER H 103 -89.939 -8.973 26.981 1.00 32.68 C
ATOM 2507 CB SER H 103 -89.719 -10.127 25.977 1.00 34.45 C
ATOM 2508 OG SER H 103 -90.939 -10.325 25.220 1.00 33.69 O
ATOM 2509 C SER H 103 -88.772 -8.670 27.960 1.00 36.05 C
ATOM 2510 O SER H 103 -88.728 -7.565 28.522 1.00 39.22 O
ATOM 2511 N PHE H 104 -87.860 -9.627 28.175 1.00 32.49 N
ATOM 2512 CA PHE H 104 -86.706 -9.460 28.983 1.00 27.41 C
ATOM 2513 CB PHE H 104 -86.683 -10.525 30.104 1.00 27.25 C
ATOM 2514 CG PHE H 104 -87.749 -10.353 31.163 1.00 26.62 C
ATOM 2515 CD1 PHE H 104 -88.285 -9.113 31.490 1.00 26.77 C
ATOM 2516 CE1 PHE H 104 -89.323 -9.000 32.442 1.00 31.01 C

ATOM 2517 CZ PHE H 104 -89.776 -10.146 33.119 1.00 32.47 C
ATOM 2518 CE2 PHE H 104 -89.262 -11.399 32.771 1.00 31.27 C
ATOM 2519 CD2 PHE H 104 -88.236 -11.477 31.831 1.00 30.70 C
ATOM 2520 C PHE H 104 -85.525 -9.613 28.045 1.00 29.82 C
ATOM 2521 O PHE H 104 -84.781 -10.612 28.063 1.00 34.39 O
ATOM 2522 N ALA H 105 -85.365 -8.621 27.197 1.00 31.58 N
ATOM 2523 CA ALA H 105 -84.282 -8.610 26.224 1.00 33.41 C
ATOM 2524 CB ALA H 105 -84.550 -7.619 25.134 1.00 35.29 C
ATOM 2525 C ALA H 105 -82.937 -8.339 26.842 1.00 34.11 C
ATOM 2526 O ALA H 105 -81.945 -8.888 26.335 1.00 33.75 O
ATOM 2527 N TYR H 106 -82.883 -7.528 27.917 1.00 32.39 N
ATOM 2528 CA TYR H 106 -81.586 -7.067 28.471 1.00 30.16 C
ATOM 2529 CB TYR H 106 -81.384 -5.570 28.285 1.00 30.97 C
ATOM 2530 CG TYR H 106 -81.543 -5.145 26.863 1.00 30.64 C
ATOM 2531 CD1 TYR H 106 -80.498 -5.271 25.955 1.00 34.60 C
ATOM 2532 CE1 TYR H 106 -80.664 -4.927 24.600 1.00 35.81 C
ATOM 2533 CZ TYR H 106 -81.904 -4.438 24.160 1.00 36.37 C
ATOM 2534 OH TYR H 106 -82.107 -4.105 22.838 1.00 36.72 O
ATOM 2535 CE2 TYR H 106 -82.974 -4.323 25.070 1.00 36.05 C
ATOM 2536 CD2 TYR H 106 -82.758 -4.645 26.416 1.00 33.23 C
ATOM 2537 C TYR H 106 -81.491 -7.440 29.939 1.00 30.63 C
ATOM 2538 O TYR H 106 -82.376 -7.128 30.709 1.00 27.48 O
ATOM 2539 N TRP H 107 -80.410 -8.109 30.299 1.00 29.29 N
ATOM 2540 CA TRP H 107 -80.183 -8.629 31.623 1.00 32.72 C
ATOM 2541 CB TRP H 107 -80.077 -10.141 31.546 1.00 33.17 C
ATOM 2542 CG TRP H 107 -81.394 -10.819 31.213 1.00 33.26 C
ATOM 2543 CD1 TRP H 107 -82.100 -10.746 30.020 1.00 30.17 C
ATOM 2544 NE1 TRP H 107 -83.244 -11.481 30.130 1.00 31.54 N
ATOM 2545 CE2 TRP H 107 -83.280 -12.097 31.361 1.00 30.98 C
ATOM 2546 CD2 TRP H 107 -82.144 -11.679 32.078 1.00 30.86 C
ATOM 2547 CE3 TRP H 107 -81.935 -12.179 33.389 1.00 31.72 C
ATOM 2548 CZ3 TRP H 107 -82.899 -13.047 33.946 1.00 29.89 C
ATOM 2549 CH2 TRP H 107 -84.053 -13.424 33.199 1.00 30.03 C
ATOM 2550 CZ2 TRP H 107 -84.250 -12.967 31.919 1.00 30.58 C
ATOM 2551 C TRP H 107 -78.845 -8.111 32.126 1.00 36.91 C
ATOM 2552 O TRP H 107 -77.917 -7.836 31.341 1.00 33.56 O
ATOM 2553 N GLY H 108 -78.710 -8.023 33.445 1.00 36.27 N

ATOM 2554 CA GLY H 108 -77.372 -7.847 34.007 1.00 34.58 C
ATOM 2555 C GLY H 108 -76.623 -9.169 34.020 1.00 34.75 C
ATOM 2556 O GLY H 108 -77.090 -10.184 33.540 1.00 40.27 O
ATOM 2557 N GLN H 109 -75.434 -9.149 34.572 1.00 35.24 N
ATOM 2558 CA GLN H 109 -74.579 -10.334 34.643 1.00 33.73 C
ATOM 2559 CB GLN H 109 -73.085 -9.903 34.768 1.00 35.55 C
ATOM 2560 CG GLN H 109 -72.491 -9.631 36.157 0.50 33.83 C
ATOM 2561 CD GLN H 109 -72.876 -8.276 36.723 1.00 39.59 C
ATOM 2562 OE1 GLN H 109 -73.681 -7.522 36.132 1.00 40.20 O
ATOM 2563 NE2 GLN H 109 -72.333 -7.958 37.893 1.00 39.04 N
ATOM 2564 C GLN H 109 -74.928 -11.228 35.792 1.00 30.48 C
ATOM 2565 O GLN H 109 -74.381 -12.306 35.909 1.00 32.34 O
ATOM 2566 N GLY H 110 -75.782 -10.758 36.687 1.00 30.48 N
ATOM 2567 CA GLY H 110 -76.133 -11.508 37.920 1.00 34.17 C
ATOM 2568 C GLY H 110 -75.115 -11.375 39.070 1.00 34.60 C
ATOM 2569 O GLY H 110 -73.912 -11.221 38.852 1.00 37.91 O
ATOM 2570 N THR H 111 -75.608 -11.418 40.298 1.00 32.10 N
ATOM 2571 CA THR H 111 -74.756 -11.362 41.486 1.00 28.87 C
ATOM 2572 CB THR H 111 -74.783 -9.964 42.090 1.00 28.89 C
ATOM 2573 OG1 THR H 111 -73.756 -9.864 43.015 1.00 30.04 O
ATOM 2574 CG2 THR H 111 -76.071 -9.636 42.788 1.00 33.16 C
ATOM 2575 C THR H 111 -75.164 -12.481 42.442 1.00 29.58 C
ATOM 2576 O THR H 111 -76.354 -12.749 42.632 1.00 30.90 O
ATOM 2577 N LEU H 112 -74.172 -13.209 42.931 1.00 29.61 N
ATOM 2578 CA LEU H 112 -74.369 -14.395 43.766 1.00 32.70 C
ATOM 2579 CB LEU H 112 -73.084 -15.266 43.755 1.00 29.32 C
ATOM 2580 CG LEU H 112 -73.155 -16.607 44.544 1.00 32.12 C
ATOM 2581 CD1 LEU H 112 -74.279 -17.546 44.084 1.00 32.12 C
ATOM 2582 CD2 LEU H 112 -71.870 -17.373 44.446 1.00 28.60 C
ATOM 2583 C LEU H 112 -74.652 -13.988 45.227 1.00 33.79 C
ATOM 2584 O LEU H 112 -73.769 -13.401 45.880 1.00 38.79 O
ATOM 2585 N VAL H 113 -75.804 -14.389 45.751 1.00 28.27 N
ATOM 2586 CA VAL H 113 -76.168 -14.203 47.153 1.00 25.80 C
ATOM 2587 CB VAL H 113 -77.536 -13.515 47.253 1.00 25.40 C
ATOM 2588 CG1 VAL H 113 -78.019 -13.367 48.680 1.00 27.42 C
ATOM 2589 CG2 VAL H 113 -77.479 -12.140 46.624 1.00 26.56 C
ATOM 2590 C VAL H 113 -76.168 -15.581 47.771 1.00 28.55 C

ATOM 2591 O VAL H 113 -76.913 -16.420 47.300 1.00 33.29 O
ATOM 2592 N THR H 114 -75.303 -15.837 48.761 1.00 29.90 N
ATOM 2593 CA THR H 114 -75.267 -17.102 49.494 1.00 34.78 C
ATOM 2594 CB THR H 114 -73.837 -17.706 49.601 1.00 38.57 C
ATOM 2595 OG1 THR H 114 -73.207 -17.827 48.319 1.00 39.68 O
ATOM 2596 CG2 THR H 114 -73.846 -19.096 50.250 1.00 39.78 C
ATOM 2597 C THR H 114 -75.781 -16.837 50.924 1.00 36.05 C
ATOM 2598 O THR H 114 -75.323 -15.922 51.579 1.00 37.78 O
ATOM 2599 N VAL H 115 -76.737 -17.620 51.392 1.00 33.03 N
ATOM 2600 CA VAL H 115 -77.324 -17.428 52.712 1.00 32.38 C
ATOM 2601 CB VAL H 115 -78.855 -17.205 52.661 1.00 31.62 C
ATOM 2602 CG1 VAL H 115 -79.464 -17.038 54.058 1.00 29.33 C
ATOM 2603 CG2 VAL H 115 -79.214 -15.998 51.803 1.00 30.08 C
ATOM 2604 C VAL H 115 -76.986 -18.702 53.478 1.00 32.95 C
ATOM 2605 O VAL H 115 -77.474 -19.733 53.174 1.00 33.78 O
ATOM 2606 N SER H 116 -76.131 -18.612 54.475 1.00 35.65 N
ATOM 2607 CA SER H 116 -75.666 -19.785 55.204 1.00 34.60 C
ATOM 2608 CB SER H 116 -74.678 -20.557 54.319 1.00 34.26 C
ATOM 2609 OG SER H 116 -73.996 -21.552 55.049 1.00 36.06 O
ATOM 2610 C SER H 116 -75.008 -19.295 56.493 1.00 34.34 C
ATOM 2611 O SER H 116 -74.635 -18.104 56.617 1.00 35.38 O
ATOM 2612 N SER H 117 -74.920 -20.178 57.465 1.00 37.15 N
ATOM 2613 CA SER H 117 -74.290 -19.842 58.734 1.00 43.47 C
ATOM 2614 CB SER H 117 -75.096 -20.366 59.940 1.00 48.08 C
ATOM 2615 OG SER H 117 -75.480 -21.711 59.787 1.00 54.03 O
ATOM 2616 C SER H 117 -72.851 -20.312 58.761 1.00 44.27 C
ATOM 2617 O SER H 117 -72.132 -19.978 59.679 1.00 48.82 O
ATOM 2618 N ALA H 118 -72.399 -21.044 57.744 1.00 46.84 N
ATOM 2619 CA ALA H 118 -70.966 -21.347 57.640 1.00 44.98 C
ATOM 2620 CB ALA H 118 -70.706 -22.339 56.530 1.00 47.52 C
ATOM 2621 C ALA H 118 -70.119 -20.084 57.425 1.00 45.56 C
ATOM 2622 O ALA H 118 -70.553 -19.078 56.831 1.00 45.72 O
ATOM 2623 N SER H 119 -68.899 -20.151 57.924 1.00 47.66 N
ATOM 2624 CA SER H 119 -67.961 -19.033 57.862 1.00 47.65 C
ATOM 2625 CB SER H 119 -66.975 -19.164 59.020 1.00 48.69 C
ATOM 2626 OG SER H 119 -67.538 -18.543 60.151 1.00 66.18 O
ATOM 2627 C SER H 119 -67.177 -19.022 56.567 1.00 44.66 C

ATOM 2628 O SER H 119 -66.880 -20.085 56.014 1.00 44.16 O
ATOM 2629 N THR H 120 -66.811 -17.825 56.117 1.00 44.28 N
ATOM 2630 CA THR H 120 -65.865 -17.660 55.039 1.00 42.61 C
ATOM 2631 CB THR H 120 -65.630 -16.202 54.729 1.00 40.72 C
ATOM 2632 OG1 THR H 120 -66.879 -15.576 54.424 1.00 45.83 O
ATOM 2633 CG2 THR H 120 -64.695 -16.038 53.531 1.00 45.60 C
ATOM 2634 C THR H 120 -64.513 -18.287 55.377 1.00 49.72 C
ATOM 2635 O THR H 120 -63.969 -18.027 56.455 1.00 64.56 O
ATOM 2636 N LYS H 121 -64.004 -19.137 54.487 1.00 47.14 N
ATOM 2637 CA LYS H 121 -62.673 -19.731 54.633 1.00 48.64 C
ATOM 2638 CB LYS H 121 -62.790 -21.097 55.284 1.00 48.53 C
ATOM 2639 CG LYS H 121 -61.477 -21.776 55.576 1.00 52.34 C
ATOM 2640 CD LYS H 121 -61.703 -23.155 56.199 1.00 60.73 C
ATOM 2641 CE LYS H 121 -60.405 -23.963 56.445 1.00 65.81 C
ATOM 2642 NZ LYS H 121 -59.485 -24.033 55.256 1.00 77.40 N
ATOM 2643 C LYS H 121 -62.022 -19.845 53.251 1.00 50.23 C
ATOM 2644 O LYS H 121 -62.684 -20.261 52.274 1.00 53.36 O
ATOM 2645 N GLY H 122 -60.756 -19.446 53.146 1.00 47.14 N
ATOM 2646 CA GLY H 122 -59.975 -19.619 51.898 1.00 43.27 C
ATOM 2647 C GLY H 122 -59.406 -21.018 51.740 1.00 40.12 C
ATOM 2648 O GLY H 122 -59.180 -21.720 52.714 1.00 46.82 O
ATOM 2649 N PRO H 123 -59.184 -21.461 50.504 1.00 43.33 N
ATOM 2650 CA PRO H 123 -58.742 -22.857 50.277 1.00 43.37 C
ATOM 2651 CB PRO H 123 -58.990 -23.036 48.785 1.00 42.66 C
ATOM 2652 CG PRO H 123 -58.787 -21.670 48.208 1.00 41.71 C
ATOM 2653 CD PRO H 123 -59.258 -20.697 49.247 1.00 44.04 C
ATOM 2654 C PRO H 123 -57.245 -23.089 50.504 1.00 45.00 C
ATOM 2655 O PRO H 123 -56.454 -22.170 50.384 1.00 47.30 O
ATOM 2656 N SER H 124 -56.882 -24.328 50.763 1.00 44.80 N
ATOM 2657 CA SER H 124 -55.527 -24.792 50.583 1.00 46.85 C
ATOM 2658 CB SER H 124 -55.200 -25.891 51.608 1.00 51.79 C
ATOM 2659 OG SER H 124 -55.359 -25.450 52.950 1.00 55.22 O
ATOM 2660 C SER H 124 -55.439 -25.379 49.149 1.00 48.06 C
ATOM 2661 O SER H 124 -56.387 -25.991 48.671 1.00 46.04 O
ATOM 2662 N VAL H 125 -54.304 -25.198 48.487 1.00 45.74 N
ATOM 2663 CA VAL H 125 -54.090 -25.645 47.117 1.00 48.99 C
ATOM 2664 CB VAL H 125 -53.782 -24.431 46.230 1.00 49.14 C

ATOM 2665 CG1 VAL H 125 -53.527 -24.854 44.787 1.00 48.43 C
ATOM 2666 CG2 VAL H 125 -54.913 -23.395 46.340 1.00 48.70 C
ATOM 2667 C VAL H 125 -52.909 -26.605 47.092 1.00 48.51 C
ATOM 2668 O VAL H 125 -51.818 -26.198 47.425 1.00 56.65 O
ATOM 2669 N PHE H 126 -53.143 -27.854 46.689 1.00 48.04 N
ATOM 2670 CA PHE H 126 -52.173 -28.947 46.712 1.00 49.41 C
ATOM 2671 CB PHE H 126 -52.684 -30.125 47.590 1.00 50.89 C
ATOM 2672 CG PHE H 126 -53.060 -29.728 49.013 1.00 49.68 C
ATOM 2673 CD1 PHE H 126 -52.128 -29.134 49.865 1.00 53.56 C
ATOM 2674 CE1 PHE H 126 -52.477 -28.755 51.161 1.00 53.94 C
ATOM 2675 CZ PHE H 126 -53.783 -28.957 51.609 1.00 53.52 C
ATOM 2676 CE2 PHE H 126 -54.727 -29.532 50.763 1.00 49.39 C
ATOM 2677 CD2 PHE H 126 -54.359 -29.908 49.481 1.00 51.94 C
ATOM 2678 C PHE H 126 -51.901 -29.447 45.269 1.00 55.74 C
ATOM 2679 O PHE H 126 -52.809 -29.469 44.458 1.00 56.65 O
ATOM 2680 N PRO H 127 -50.645 -29.826 44.930 1.00 57.55 N
ATOM 2681 CA PRO H 127 -50.434 -30.246 43.549 1.00 54.32 C
ATOM 2682 CB PRO H 127 -48.918 -30.161 43.386 1.00 53.21 C
ATOM 2683 CG PRO H 127 -48.410 -30.545 44.741 1.00 55.18 C
ATOM 2684 CD PRO H 127 -49.397 -29.923 45.708 1.00 53.53 C
ATOM 2685 C PRO H 127 -50.866 -31.665 43.392 1.00 46.64 C
ATOM 2686 O PRO H 127 -50.727 -32.422 44.319 1.00 45.57 O
ATOM 2687 N LEU H 128 -51.380 -31.990 42.212 1.00 47.20 N
ATOM 2688 CA LEU H 128 -51.622 -33.360 41.775 1.00 49.21 C
ATOM 2689 CB LEU H 128 -53.009 -33.485 41.132 1.00 49.96 C
ATOM 2690 CG LEU H 128 -54.235 -33.412 42.066 1.00 51.10 C
ATOM 2691 CD1 LEU H 128 -55.519 -33.243 41.269 1.00 52.82 C
ATOM 2692 CD2 LEU H 128 -54.367 -34.646 42.936 1.00 53.84 C
ATOM 2693 C LEU H 128 -50.516 -33.640 40.758 1.00 52.62 C
ATOM 2694 O LEU H 128 -50.565 -33.197 39.596 1.00 47.14 O
ATOM 2695 N ALA H 129 -49.485 -34.336 41.215 1.00 54.67 N
ATOM 2696 CA ALA H 129 -48.234 -34.417 40.463 1.00 52.31 C
ATOM 2697 CB ALA H 129 -47.073 -34.685 41.400 1.00 51.30 C
ATOM 2698 C ALA H 129 -48.341 -35.525 39.435 1.00 45.67 C
ATOM 2699 O ALA H 129 -48.890 -36.586 39.764 1.00 47.29 O
ATOM 2700 N PRO H 130 -47.794 -35.304 38.211 1.00 46.58 N
ATOM 2701 CA PRO H 130 -47.877 -36.283 37.075 1.00 47.21 C

ATOM 2702 CB PRO H 130 -47.140 -35.556 35.931 1.00 47.63 C
ATOM 2703 CG PRO H 130 -46.343 -34.471 36.559 1.00 49.52 C
ATOM 2704 CD PRO H 130 -47.065 -34.074 37.820 1.00 46.79 C
ATOM 2705 C PRO H 130 -47.266 -37.671 37.379 1.00 46.24 C
ATOM 2706 O PRO H 130 -46.373 -37.724 38.209 1.00 58.47 O
ATOM 2707 N SER H 131 -47.734 -38.753 36.754 0.20 43.39 N
ATOM 2708 CA SER H 131 -47.256 -40.123 37.079 0.20 41.29 C
ATOM 2709 CB SER H 131 -47.781 -41.145 36.068 0.20 39.77 C
ATOM 2710 OG SER H 131 -48.862 -41.864 36.623 0.20 38.50 O
ATOM 2711 C SER H 131 -45.733 -40.274 37.208 0.20 39.83 C
ATOM 2712 O SER H 131 -44.977 -39.706 36.434 0.20 36.16 O
ATOM 2713 N SER H 132 -45.319 -41.069 38.191 0.20 41.09 N
ATOM 2714 CA SER H 132 -43.955 -41.051 38.725 0.20 41.88 C
ATOM 2715 CB SER H 132 -43.837 -42.045 39.883 0.20 41.31 C
ATOM 2716 OG SER H 132 -44.691 -41.688 40.951 0.20 40.43 O
ATOM 2717 C SER H 132 -42.873 -41.373 37.714 0.20 42.54 C
ATOM 2718 O SER H 132 -42.152 -40.487 37.261 0.20 42.35 O
ATOM 2719 N LYS H 133 -42.731 -42.654 37.392 0.20 44.28 N
ATOM 2720 CA LYS H 133 -41.637 -43.084 36.538 0.20 45.01 C
ATOM 2721 CB LYS H 133 -41.758 -44.572 36.207 0.20 44.87 C
ATOM 2722 CG LYS H 133 -40.952 -45.478 37.131 0.20 44.52 C
ATOM 2723 CD LYS H 133 -41.197 -45.151 38.595 0.20 43.91 C
ATOM 2724 CE LYS H 133 -40.602 -46.213 39.506 0.20 43.71 C
ATOM 2725 NZ LYS H 133 -40.990 -47.584 39.085 0.20 42.23 N
ATOM 2726 C LYS H 133 -41.606 -42.227 35.276 0.20 46.16 C
ATOM 2727 O LYS H 133 -40.684 -41.445 35.062 0.20 44.23 O
ATOM 2728 N SER H 134 -42.638 -42.351 34.454 0.20 48.12 N
ATOM 2729 CA SER H 134 -42.719 -41.568 33.235 0.20 47.03 C
ATOM 2730 CB SER H 134 -44.116 -41.695 32.632 0.20 47.34 C
ATOM 2731 OG SER H 134 -44.041 -42.089 31.275 0.20 46.87 O
ATOM 2732 C SER H 134 -42.370 -40.091 33.494 0.20 46.38 C
ATOM 2733 O SER H 134 -43.142 -39.342 34.104 0.20 39.42 O
ATOM 2734 N THR H 135 -41.182 -39.694 33.050 0.20 47.53 N
ATOM 2735 CA THR H 135 -40.829 -38.285 32.987 0.20 48.47 C
ATOM 2736 CB THR H 135 -39.492 -37.974 33.700 0.20 49.12 C
ATOM 2737 OG1 THR H 135 -39.310 -36.555 33.781 0.20 48.43 O
ATOM 2738 CG2 THR H 135 -38.300 -38.601 32.963 0.20 49.76 C

ATOM 2739 C THR H 135 -40.761 -37.888 31.516 0.20 48.48 C
ATOM 2740 O THR H 135 -40.497 -36.732 31.189 0.20 47.50 O
ATOM 2741 N SER H 136 -41.005 -38.866 30.638 0.20 48.74 N
ATOM 2742 CA SER H 136 -41.071 -38.636 29.189 0.20 48.07 C
ATOM 2743 CB SER H 136 -39.744 -38.045 28.689 0.20 47.24 C
ATOM 2744 OG SER H 136 -38.648 -38.889 29.007 0.20 45.45 O
ATOM 2745 C SER H 136 -41.436 -39.935 28.433 0.20 49.22 C
ATOM 2746 O SER H 136 -40.871 -40.994 28.715 0.20 43.91 O
ATOM 2747 N GLY H 137 -42.356 -39.851 27.462 0.50 52.96 N
ATOM 2748 CA GLY H 137 -42.981 -41.066 26.874 0.50 54.65 C
ATOM 2749 C GLY H 137 -44.174 -40.837 25.940 0.50 60.08 C
ATOM 2750 O GLY H 137 -43.973 -40.754 24.733 0.50 64.57 O
ATOM 2751 N GLY H 138 -45.412 -40.753 26.477 0.50 58.75 N
ATOM 2752 CA GLY H 138 -46.645 -40.596 25.660 0.50 52.37 C
ATOM 2753 C GLY H 138 -47.949 -40.213 26.382 0.50 57.50 C
ATOM 2754 O GLY H 138 -48.883 -41.025 26.461 0.50 59.48 O
ATOM 2755 N THR H 139 -48.007 -38.979 26.902 1.00 53.17 N
ATOM 2756 CA THR H 139 -49.243 -38.321 27.540 1.00 61.00 C
ATOM 2757 CB THR H 139 -50.608 -38.549 26.816 1.00 65.56 C
ATOM 2758 OG1 THR H 139 -50.498 -38.163 25.447 1.00 75.62 O
ATOM 2759 CG2 THR H 139 -51.722 -37.668 27.422 1.00 63.02 C
ATOM 2760 C THR H 139 -49.492 -38.474 29.059 1.00 59.62 C
ATOM 2761 O THR H 139 -49.861 -39.555 29.552 1.00 64.91 O
ATOM 2762 N ALA H 140 -49.354 -37.357 29.778 1.00 53.84 N
ATOM 2763 CA ALA H 140 -49.466 -37.326 31.243 1.00 52.25 C
ATOM 2764 CB ALA H 140 -48.104 -37.055 31.833 1.00 50.06 C
ATOM 2765 C ALA H 140 -50.499 -36.281 31.795 1.00 52.84 C
ATOM 2766 O ALA H 140 -50.728 -35.196 31.208 1.00 47.51 O
ATOM 2767 N ALA H 141 -51.070 -36.614 32.952 1.00 50.57 N
ATOM 2768 CA ALA H 141 -52.086 -35.799 33.607 1.00 49.01 C
ATOM 2769 CB ALA H 141 -53.281 -36.662 33.948 1.00 46.80 C
ATOM 2770 C ALA H 141 -51.518 -35.206 34.872 1.00 47.76 C
ATOM 2771 O ALA H 141 -50.895 -35.934 35.644 1.00 45.57 O
ATOM 2772 N LEU H 142 -51.780 -33.914 35.099 1.00 45.35 N
ATOM 2773 CA LEU H 142 -51.408 -33.206 36.338 1.00 45.31 C
ATOM 2774 CB LEU H 142 -50.121 -32.426 36.149 1.00 46.16 C
ATOM 2775 CG LEU H 142 -50.021 -31.400 35.029 1.00 47.25 C

ATOM 2776 CD1 LEU H 142 -50.038 -29.983 35.529 1.00 49.62 C
ATOM 2777 CD2 LEU H 142 -48.695 -31.613 34.327 1.00 50.86 C
ATOM 2778 C LEU H 142 -52.525 -32.254 36.762 1.00 46.53 C
ATOM 2779 O LEU H 142 -53.522 -32.162 36.051 1.00 43.24 O
ATOM 2780 N GLY H 143 -52.374 -31.571 37.915 1.00 44.88 N
ATOM 2781 CA GLY H 143 -53.433 -30.736 38.443 1.00 46.09 C
ATOM 2782 C GLY H 143 -53.257 -30.064 39.788 1.00 50.73 C
ATOM 2783 O GLY H 143 -52.194 -30.146 40.424 1.00 49.98 O
ATOM 2784 N CYS H 144 -54.336 -29.394 40.203 1.00 48.63 N
ATOM 2785 CA CYS H 144 -54.455 -28.749 41.495 1.00 45.57 C
ATOM 2786 CB CYS H 144 -54.437 -27.241 41.338 1.00 47.57 C
ATOM 2787 SG CYS H 144 -52.737 -26.711 41.067 1.00 55.39 S
ATOM 2788 C CYS H 144 -55.732 -29.173 42.202 1.00 47.29 C
ATOM 2789 O CYS H 144 -56.799 -29.182 41.619 1.00 46.29 O
ATOM 2790 N LEU H 145 -55.602 -29.529 43.472 1.00 46.14 N
ATOM 2791 CA LEU H 145 -56.708 -29.864 44.328 1.00 39.48 C
ATOM 2792 CB LEU H 145 -56.311 -31.057 45.162 1.00 40.90 C
ATOM 2793 CG LEU H 145 -57.244 -31.428 46.294 1.00 41.55 C
ATOM 2794 CD1 LEU H 145 -58.586 -31.892 45.731 1.00 41.05 C
ATOM 2795 CD2 LEU H 145 -56.584 -32.491 47.183 1.00 40.91 C
ATOM 2796 C LEU H 145 -56.936 -28.633 45.187 1.00 39.48 C
ATOM 2797 O LEU H 145 -56.033 -28.192 45.864 1.00 43.96 O
ATOM 2798 N VAL H 146 -58.131 -28.065 45.108 1.00 38.87 N
ATOM 2799 CA VAL H 146 -58.510 -26.857 45.786 1.00 38.49 C
ATOM 2800 CB VAL H 146 -59.159 -25.896 44.806 1.00 39.29 C
ATOM 2801 CG1 VAL H 146 -59.466 -24.565 45.475 1.00 37.52 C
ATOM 2802 CG2 VAL H 146 -58.214 -25.651 43.656 1.00 43.25 C
ATOM 2803 C VAL H 146 -59.480 -27.255 46.887 1.00 41.13 C
ATOM 2804 O VAL H 146 -60.642 -27.546 46.628 1.00 44.73 O
ATOM 2805 N LYS H 147 -58.990 -27.278 48.118 1.00 44.57 N
ATOM 2806 CA LYS H 147 -59.606 -28.016 49.213 1.00 44.13 C
ATOM 2807 CB LYS H 147 -58.563 -29.003 49.752 1.00 52.52 C
ATOM 2808 CG LYS H 147 -58.969 -30.481 49.783 1.00 61.16 C
ATOM 2809 CD LYS H 147 -59.289 -30.973 51.198 1.00 65.29 C
ATOM 2810 CE LYS H 147 -60.074 -32.278 51.167 1.00 72.14 C
ATOM 2811 NZ LYS H 147 -60.705 -32.627 52.475 1.00 73.23 N
ATOM 2812 C LYS H 147 -60.051 -27.026 50.295 1.00 45.30 C

ATOM 2813 O LYS H 147 -59.343 -26.071 50.620 1.00 46.60 O
ATOM 2814 N ASP H 148 -61.259 -27.222 50.803 1.00 48.21 N
ATOM 2815 CA ASP H 148 -61.723 -26.601 52.032 1.00 43.42 C
ATOM 2816 CB ASP H 148 -60.775 -26.928 53.193 1.00 40.32 C
ATOM 2817 CG ASP H 148 -60.752 -28.427 53.521 1.00 45.80 C
ATOM 2818 OD1 ASP H 148 -61.629 -29.193 53.037 1.00 42.90 O
ATOM 2819 OD2 ASP H 148 -59.869 -28.842 54.301 1.00 47.21 O
ATOM 2820 C ASP H 148 -61.979 -25.128 51.959 1.00 42.82 C
ATOM 2821 O ASP H 148 -61.397 -24.382 52.727 1.00 45.95 O
ATOM 2822 N TYR H 149 -62.896 -24.711 51.083 1.00 43.29 N
ATOM 2823 CA TYR H 149 -63.293 -23.283 50.992 1.00 39.55 C
ATOM 2824 CB TYR H 149 -62.770 -22.663 49.697 1.00 38.45 C
ATOM 2825 CG TYR H 149 -63.410 -23.162 48.422 1.00 41.01 C
ATOM 2826 CD1 TYR H 149 -62.905 -24.283 47.739 1.00 46.05 C
ATOM 2827 CE1 TYR H 149 -63.502 -24.739 46.540 1.00 43.79 C
ATOM 2828 CZ TYR H 149 -64.582 -24.054 46.036 1.00 41.35 C
ATOM 2829 OH TYR H 149 -65.187 -24.433 44.879 1.00 46.73 O
ATOM 2830 CE2 TYR H 149 -65.073 -22.929 46.687 1.00 42.68 C
ATOM 2831 CD2 TYR H 149 -64.492 -22.494 47.867 1.00 38.58 C
ATOM 2832 C TYR H 149 -64.799 -23.050 51.133 1.00 36.04 C
ATOM 2833 O TYR H 149 -65.590 -23.984 51.017 1.00 43.14 O
ATOM 2834 N PHE H 150 -65.165 -21.801 51.404 1.00 33.32 N
ATOM 2835 CA PHE H 150 -66.549 -21.336 51.473 1.00 35.71 C
ATOM 2836 CB PHE H 150 -67.213 -21.840 52.735 1.00 37.40 C
ATOM 2837 CG PHE H 150 -68.686 -21.710 52.704 1.00 35.63 C
ATOM 2838 CD1 PHE H 150 -69.468 -22.745 52.171 1.00 34.84 C
ATOM 2839 CE1 PHE H 150 -70.847 -22.636 52.119 1.00 36.52 C
ATOM 2840 CZ PHE H 150 -71.460 -21.473 52.615 1.00 39.53 C
ATOM 2841 CE2 PHE H 150 -70.668 -20.414 53.145 1.00 37.87 C
ATOM 2842 CD2 PHE H 150 -69.298 -20.549 53.190 1.00 35.45 C
ATOM 2843 C PHE H 150 -66.641 -19.810 51.477 1.00 36.49 C
ATOM 2844 O PHE H 150 -65.747 -19.182 51.986 1.00 42.08 O
ATOM 2845 N PRO H 151 -67.663 -19.182 50.899 1.00 34.14 N
ATOM 2846 CA PRO H 151 -68.632 -19.737 49.969 1.00 36.73 C
ATOM 2847 CB PRO H 151 -69.628 -18.559 49.805 1.00 35.99 C
ATOM 2848 CG PRO H 151 -68.771 -17.326 49.915 1.00 34.10 C
ATOM 2849 CD PRO H 151 -67.676 -17.707 50.906 1.00 34.62 C

ATOM 2850 C PRO H 151 -68.020 -19.987 48.585 1.00 42.19 C
ATOM 2851 O PRO H 151 -66.858 -19.686 48.379 1.00 46.81 O
ATOM 2852 N GLU H 152 -68.828 -20.475 47.636 1.00 46.25 N
ATOM 2853 CA GLU H 152 -68.513 -20.428 46.189 1.00 43.44 C
ATOM 2854 CB GLU H 152 -69.640 -21.092 45.359 1.00 44.76 C
ATOM 2855 CG GLU H 152 -69.666 -22.614 45.473 1.00 49.35 C
ATOM 2856 CD GLU H 152 -68.884 -23.307 44.340 1.00 54.63 C
ATOM 2857 OE1 GLU H 152 -67.611 -23.126 44.220 1.00 54.18 O
ATOM 2858 OE2 GLU H 152 -69.578 -24.024 43.558 1.00 57.39 O
ATOM 2859 C GLU H 152 -68.396 -18.950 45.821 1.00 42.26 C
ATOM 2860 O GLU H 152 -68.957 -18.110 46.548 1.00 42.70 O
ATOM 2861 N PRO H 153 -67.699 -18.592 44.735 1.00 36.83 N
ATOM 2862 CA PRO H 153 -67.031 -19.513 43.781 1.00 33.86 C
ATOM 2863 CB PRO H 153 -67.445 -18.906 42.394 1.00 33.70 C
ATOM 2864 CG PRO H 153 -67.458 -17.399 42.632 1.00 33.52 C
ATOM 2865 CD PRO H 153 -67.923 -17.249 44.125 1.00 32.04 C
ATOM 2866 C PRO H 153 -65.531 -19.367 43.918 1.00 35.90 C
ATOM 2867 O PRO H 153 -65.039 -18.368 44.466 1.00 38.17 O
ATOM 2868 N VAL H 154 -64.816 -20.344 43.409 1.00 39.00 N
ATOM 2869 CA VAL H 154 -63.389 -20.272 43.175 1.00 46.91 C
ATOM 2870 CB VAL H 154 -62.769 -21.486 43.846 1.00 52.04 C
ATOM 2871 CG1 VAL H 154 -62.614 -22.630 42.864 1.00 56.60 C
ATOM 2872 CG2 VAL H 154 -61.448 -21.122 44.471 1.00 57.93 C
ATOM 2873 C VAL H 154 -63.140 -20.214 41.644 1.00 45.04 C
ATOM 2874 O VAL H 154 -63.886 -20.823 40.915 1.00 42.71 O
ATOM 2875 N THR H 155 -62.174 -19.436 41.138 1.00 47.85 N
ATOM 2876 CA THR H 155 -61.770 -19.569 39.709 1.00 43.09 C
ATOM 2877 CB THR H 155 -61.657 -18.236 38.940 1.00 50.77 C
ATOM 2878 OG1 THR H 155 -60.645 -17.417 39.526 1.00 52.57 O
ATOM 2879 CG2 THR H 155 -62.966 -17.448 38.895 1.00 46.60 C
ATOM 2880 C THR H 155 -60.391 -20.191 39.652 1.00 45.08 C
ATOM 2881 O THR H 155 -59.506 -19.858 40.485 1.00 35.65 O
ATOM 2882 N VAL H 156 -60.210 -21.111 38.701 1.00 42.77 N
ATOM 2883 CA VAL H 156 -58.892 -21.655 38.335 1.00 42.45 C
ATOM 2884 CB VAL H 156 -58.859 -23.151 38.579 1.00 44.99 C
ATOM 2885 CG1 VAL H 156 -57.423 -23.669 38.581 1.00 48.97 C
ATOM 2886 CG2 VAL H 156 -59.520 -23.489 39.907 1.00 48.14 C

ATOM 2887 C VAL H 156 -58.491 -21.396 36.870 1.00 44.89 C
ATOM 2888 O VAL H 156 -59.246 -21.698 35.956 1.00 48.10 O
ATOM 2889 N SER H 157 -57.288 -20.892 36.636 1.00 44.24 N
ATOM 2890 CA SER H 157 -56.712 -20.919 35.294 1.00 46.09 C
ATOM 2891 CB SER H 157 -56.622 -19.517 34.719 1.00 47.38 C
ATOM 2892 OG SER H 157 -55.689 -18.799 35.471 1.00 41.60 O
ATOM 2893 C SER H 157 -55.301 -21.507 35.308 1.00 48.98 C
ATOM 2894 O SER H 157 -54.694 -21.632 36.366 1.00 48.50 O
ATOM 2895 N TRP H 158 -54.788 -21.856 34.121 1.00 43.76 N
ATOM 2896 CA TRP H 158 -53.432 -22.348 33.994 1.00 40.68 C
ATOM 2897 CB TRP H 158 -53.447 -23.738 33.426 1.00 44.07 C
ATOM 2898 CG TRP H 158 -53.994 -24.740 34.362 1.00 42.28 C
ATOM 2899 CD1 TRP H 158 -55.298 -25.083 34.529 1.00 43.41 C
ATOM 2900 NE1 TRP H 158 -55.421 -26.071 35.494 1.00 39.71 N
ATOM 2901 CE2 TRP H 158 -54.177 -26.378 35.955 1.00 42.30 C
ATOM 2902 CD2 TRP H 158 -53.248 -25.568 35.245 1.00 45.71 C
ATOM 2903 CE3 TRP H 158 -51.889 -25.682 35.543 1.00 46.29 C
ATOM 2904 CZ3 TRP H 158 -51.489 -26.627 36.492 1.00 51.40 C
ATOM 2905 CH2 TRP H 158 -52.436 -27.431 37.173 1.00 51.30 C
ATOM 2906 CZ2 TRP H 158 -53.780 -27.315 36.921 1.00 48.34 C
ATOM 2907 C TRP H 158 -52.532 -21.394 33.187 1.00 40.72 C
ATOM 2908 O TRP H 158 -52.938 -20.818 32.153 1.00 41.10 O
ATOM 2909 N ASN H 159 -51.340 -21.163 33.750 1.00 40.34 N
ATOM 2910 CA ASN H 159 -50.307 -20.333 33.183 1.00 42.00 C
ATOM 2911 CB ASN H 159 -49.608 -21.066 32.015 1.00 46.46 C
ATOM 2912 CG ASN H 159 -48.943 -22.366 32.447 1.00 43.44 C
ATOM 2913 OD1 ASN H 159 -48.733 -22.608 33.641 1.00 44.95 O
ATOM 2914 ND2 ASN H 159 -48.609 -23.208 31.478 1.00 40.31 N
ATOM 2915 C ASN H 159 -50.875 -19.051 32.701 1.00 44.42 C
ATOM 2916 O ASN H 159 -50.777 -18.737 31.521 1.00 51.00 O
ATOM 2917 N SER H 160 -51.542 -18.359 33.617 1.00 43.12 N
ATOM 2918 CA SER H 160 -52.018 -16.978 33.441 1.00 38.72 C
ATOM 2919 CB SER H 160 -50.839 -16.048 33.207 1.00 41.00 C
ATOM 2920 OG SER H 160 -49.847 -16.241 34.226 1.00 43.74 O
ATOM 2921 C SER H 160 -53.114 -16.810 32.396 1.00 39.34 C
ATOM 2922 O SER H 160 -53.344 -15.697 31.886 1.00 40.99 O
ATOM 2923 N GLY H 161 -53.828 -17.914 32.138 1.00 40.15 N

ATOM 2924 CA GLY H 161 -54.916 -17.981 31.164 1.00 42.76 C
ATOM 2925 C GLY H 161 -54.569 -18.592 29.808 1.00 44.84 C
ATOM 2926 O GLY H 161 -55.463 -18.819 28.990 1.00 46.71 O
ATOM 2927 N ALA H 162 -53.278 -18.847 29.589 1.00 45.37 N
ATOM 2928 CA ALA H 162 -52.740 -19.278 28.301 1.00 45.25 C
ATOM 2929 CB ALA H 162 -51.244 -19.071 28.301 1.00 50.78 C
ATOM 2930 C ALA H 162 -53.009 -20.719 27.961 1.00 44.24 C
ATOM 2931 O ALA H 162 -53.263 -21.050 26.812 1.00 44.67 O
ATOM 2932 N LEU H 163 -52.858 -21.568 28.960 1.00 45.69 N
ATOM 2933 CA LEU H 163 -53.137 -22.981 28.868 1.00 41.96 C
ATOM 2934 CB LEU H 163 -52.226 -23.727 29.853 1.00 40.63 C
ATOM 2935 CG LEU H 163 -52.424 -25.227 29.781 1.00 42.17 C
ATOM 2936 CD1 LEU H 163 -52.197 -25.761 28.364 1.00 48.19 C
ATOM 2937 CD2 LEU H 163 -51.552 -25.913 30.783 1.00 43.09 C
ATOM 2938 C LEU H 163 -54.622 -23.283 29.176 1.00 44.45 C
ATOM 2939 O LEU H 163 -55.072 -23.172 30.344 1.00 37.66 O
ATOM 2940 N THR H 164 -55.340 -23.690 28.127 1.00 41.80 N
ATOM 2941 CA THR H 164 -56.778 -23.957 28.148 1.00 43.57 C
ATOM 2942 CB THR H 164 -57.603 -22.844 27.433 1.00 43.16 C
ATOM 2943 OG1 THR H 164 -57.295 -22.812 26.039 1.00 39.72 O
ATOM 2944 CG2 THR H 164 -57.279 -21.467 28.023 1.00 41.05 C
ATOM 2945 C THR H 164 -57.152 -25.280 27.522 1.00 46.48 C
ATOM 2946 O THR H 164 -58.099 -25.916 28.007 1.00 47.85 O
ATOM 2947 N SER H 165 -56.440 -25.713 26.469 1.00 44.93 N
ATOM 2948 CA SER H 165 -56.699 -27.012 25.856 1.00 44.88 C
ATOM 2949 CB SER H 165 -56.021 -27.154 24.476 1.00 54.53 C
ATOM 2950 OG SER H 165 -54.695 -27.622 24.570 1.00 63.23 O
ATOM 2951 C SER H 165 -56.350 -28.183 26.769 1.00 45.76 C
ATOM 2952 O SER H 165 -55.249 -28.244 27.369 1.00 50.25 O
ATOM 2953 N GLY H 166 -57.300 -29.107 26.885 1.00 42.81 N
ATOM 2954 CA GLY H 166 -57.187 -30.194 27.826 1.00 49.32 C
ATOM 2955 C GLY H 166 -57.485 -29.855 29.302 1.00 51.21 C
ATOM 2956 O GLY H 166 -57.491 -30.756 30.129 1.00 42.53 O
ATOM 2957 N VAL H 167 -57.733 -28.585 29.637 1.00 46.58 N
ATOM 2958 CA VAL H 167 -57.986 -28.202 31.018 1.00 45.97 C
ATOM 2959 CB VAL H 167 -57.758 -26.699 31.212 1.00 48.06 C
ATOM 2960 CG1 VAL H 167 -58.196 -26.247 32.606 1.00 44.89 C

ATOM 2961 CG2 VAL H 167 -56.291 -26.373 30.967 1.00 48.83 C
ATOM 2962 C VAL H 167 -59.425 -28.553 31.409 1.00 43.44 C
ATOM 2963 O VAL H 167 -60.350 -28.205 30.682 1.00 40.05 O
ATOM 2964 N HIS H 168 -59.580 -29.276 32.524 1.00 43.29 N
ATOM 2965 CA HIS H 168 -60.880 -29.641 33.112 1.00 39.24 C
ATOM 2966 CB HIS H 168 -61.167 -31.133 33.015 1.00 39.89 C
ATOM 2967 CG HIS H 168 -61.177 -31.654 31.615 1.00 47.23 C
ATOM 2968 ND1 HIS H 168 -62.043 -31.184 30.643 1.00 52.58 N
ATOM 2969 CE1 HIS H 168 -61.825 -31.839 29.521 1.00 46.88 C
ATOM 2970 NE2 HIS H 168 -60.846 -32.701 29.725 1.00 43.40 N
ATOM 2971 CD2 HIS H 168 -60.427 -32.604 31.025 1.00 45.31 C
ATOM 2972 C HIS H 168 -60.904 -29.228 34.565 1.00 38.89 C
ATOM 2973 O HIS H 168 -60.206 -29.850 35.407 1.00 37.45 O
ATOM 2974 N THR H 169 -61.693 -28.171 34.835 1.00 39.01 N
ATOM 2975 CA THR H 169 -61.941 -27.660 36.149 1.00 36.47 C
ATOM 2976 CB THR H 169 -61.802 -26.145 36.198 1.00 39.74 C
ATOM 2977 OG1 THR H 169 -60.543 -25.792 35.655 1.00 39.52 O
ATOM 2978 CG2 THR H 169 -61.853 -25.616 37.674 1.00 39.81 C
ATOM 2979 C THR H 169 -63.320 -28.101 36.596 1.00 37.14 C
ATOM 2980 O THR H 169 -64.357 -27.603 36.165 1.00 40.56 O
ATOM 2981 N PHE H 170 -63.304 -29.058 37.498 1.00 38.07 N
ATOM 2982 CA PHE H 170 -64.509 -29.687 38.019 1.00 40.24 C
ATOM 2983 CB PHE H 170 -64.135 -30.953 38.791 1.00 38.10 C
ATOM 2984 CG PHE H 170 -63.508 -31.993 37.916 1.00 37.29 C
ATOM 2985 CD1 PHE H 170 -64.296 -32.750 37.075 1.00 40.14 C
ATOM 2986 CE1 PHE H 170 -63.732 -33.699 36.233 1.00 39.66 C
ATOM 2987 CZ PHE H 170 -62.369 -33.840 36.208 1.00 38.72 C
ATOM 2988 CE2 PHE H 170 -61.562 -33.052 37.033 1.00 34.99 C
ATOM 2989 CD2 PHE H 170 -62.134 -32.133 37.857 1.00 35.08 C
ATOM 2990 C PHE H 170 -65.413 -28.811 38.871 1.00 39.26 C
ATOM 2991 O PHE H 170 -64.959 -27.863 39.494 1.00 49.04 O
ATOM 2992 N PRO H 171 -66.724 -29.077 38.818 1.00 39.80 N
ATOM 2993 CA PRO H 171 -67.570 -28.342 39.727 1.00 37.92 C
ATOM 2994 CB PRO H 171 -68.985 -28.901 39.428 1.00 37.95 C
ATOM 2995 CG PRO H 171 -68.942 -29.295 37.993 1.00 39.58 C
ATOM 2996 CD PRO H 171 -67.512 -29.710 37.725 1.00 41.00 C
ATOM 2997 C PRO H 171 -67.194 -28.675 41.145 1.00 33.79 C

ATOM 2998 O PRO H 171 -66.885 -29.817 41.458 1.00 34.84 O
ATOM 2999 N ALA H 172 -67.291 -27.680 41.992 1.00 33.75 N
ATOM 3000 CA ALA H 172 -67.120 -27.841 43.421 1.00 35.40 C
ATOM 3001 CB ALA H 172 -67.323 -26.475 44.079 1.00 34.48 C
ATOM 3002 C ALA H 172 -68.106 -28.850 44.000 1.00 36.19 C
ATOM 3003 O ALA H 172 -69.269 -28.830 43.646 1.00 39.09 O
ATOM 3004 N VAL H 173 -67.653 -29.694 44.916 1.00 39.66 N
ATOM 3005 CA VAL H 173 -68.560 -30.527 45.686 1.00 45.86 C
ATOM 3006 CB VAL H 173 -68.221 -32.008 45.449 1.00 47.10 C
ATOM 3007 CG1 VAL H 173 -68.987 -32.895 46.416 1.00 51.51 C
ATOM 3008 CG2 VAL H 173 -68.616 -32.374 44.017 1.00 51.69 C
ATOM 3009 C VAL H 173 -68.559 -30.119 47.179 1.00 43.59 C
ATOM 3010 O VAL H 173 -67.505 -29.862 47.724 1.00 43.06 O
ATOM 3011 N LEU H 174 -69.743 -30.034 47.808 1.00 43.83 N
ATOM 3012 CA LEU H 174 -69.853 -29.726 49.240 1.00 41.53 C
ATOM 3013 CB LEU H 174 -71.263 -29.293 49.640 1.00 44.86 C
ATOM 3014 CG LEU H 174 -71.509 -28.203 50.714 1.00 44.08 C
ATOM 3015 CD1 LEU H 174 -72.616 -28.558 51.699 1.00 42.37 C
ATOM 3016 CD2 LEU H 174 -70.282 -27.748 51.471 1.00 41.36 C
ATOM 3017 C LEU H 174 -69.519 -30.996 50.015 1.00 43.39 C
ATOM 3018 O LEU H 174 -70.074 -32.066 49.720 1.00 41.37 O
ATOM 3019 N GLN H 175 -68.597 -30.884 50.981 1.00 46.69 N
ATOM 3020 CA GLN H 175 -68.151 -32.049 51.787 1.00 47.49 C
ATOM 3021 CB GLN H 175 -66.637 -31.979 52.059 1.00 48.86 C
ATOM 3022 CG GLN H 175 -65.739 -31.697 50.855 1.00 46.71 C
ATOM 3023 CD GLN H 175 -64.332 -31.207 51.262 1.00 49.30 C
ATOM 3024 OE1 GLN H 175 -64.113 -30.004 51.477 1.00 48.38 O
ATOM 3025 NE2 GLN H 175 -63.373 -32.128 51.319 1.00 47.16 N
ATOM 3026 C GLN H 175 -68.916 -32.101 53.096 1.00 42.85 C
ATOM 3027 O GLN H 175 -69.597 -31.126 53.468 1.00 40.21 O
ATOM 3028 N SER H 176 -68.807 -33.232 53.796 1.00 50.82 N
ATOM 3029 CA SER H 176 -69.410 -33.395 55.155 1.00 57.47 C
ATOM 3030 CB SER H 176 -68.950 -34.688 55.815 1.00 59.61 C
ATOM 3031 OG SER H 176 -69.743 -35.744 55.321 1.00 77.58 O
ATOM 3032 C SER H 176 -69.127 -32.239 56.116 1.00 53.31 C
ATOM 3033 O SER H 176 -70.004 -31.824 56.882 1.00 60.60 O
ATOM 3034 N SER H 177 -67.916 -31.704 56.036 1.00 50.03 N

ATOM 3035 CA SER H 177 -67.462 -30.590 56.893 1.00 46.72 C
ATOM 3036 CB SER H 177 -65.975 -30.356 56.654 1.00 48.65 C
ATOM 3037 OG SER H 177 -65.757 -30.125 55.249 1.00 52.34 O
ATOM 3038 C SER H 177 -68.182 -29.276 56.630 1.00 45.89 C
ATOM 3039 O SER H 177 -67.973 -28.348 57.358 1.00 46.18 O
ATOM 3040 N GLY H 178 -69.013 -29.181 55.588 1.00 48.30 N
ATOM 3041 CA GLY H 178 -69.658 -27.915 55.213 1.00 43.25 C
ATOM 3042 C GLY H 178 -68.841 -27.004 54.313 1.00 37.27 C
ATOM 3043 O GLY H 178 -69.243 -25.883 54.047 1.00 38.82 O
ATOM 3044 N LEU H 179 -67.710 -27.494 53.829 1.00 38.71 N
ATOM 3045 CA LEU H 179 -66.772 -26.718 52.979 1.00 42.65 C
ATOM 3046 CB LEU H 179 -65.353 -26.830 53.550 1.00 45.48 C
ATOM 3047 CG LEU H 179 -64.729 -25.805 54.506 1.00 46.83 C
ATOM 3048 CD1 LEU H 179 -65.678 -24.770 55.044 1.00 45.28 C
ATOM 3049 CD2 LEU H 179 -63.978 -26.517 55.626 1.00 45.16 C
ATOM 3050 C LEU H 179 -66.711 -27.314 51.574 1.00 39.52 C
ATOM 3051 O LEU H 179 -66.815 -28.521 51.400 1.00 36.94 O
ATOM 3052 N TYR H 180 -66.465 -26.469 50.593 1.00 39.92 N
ATOM 3053 CA TYR H 180 -66.269 -26.921 49.222 1.00 41.09 C
ATOM 3054 CB TYR H 180 -66.602 -25.777 48.200 1.00 41.36 C
ATOM 3055 CG TYR H 180 -68.078 -25.533 48.144 1.00 40.19 C
ATOM 3056 CD1 TYR H 180 -68.929 -26.392 47.428 1.00 47.92 C
ATOM 3057 CE1 TYR H 180 -70.318 -26.177 47.379 1.00 43.73 C
ATOM 3058 CZ TYR H 180 -70.867 -25.135 48.108 1.00 45.17 C
ATOM 3059 OH TYR H 180 -72.220 -24.913 48.134 1.00 41.46 O
ATOM 3060 CE2 TYR H 180 -70.039 -24.300 48.848 1.00 46.74 C
ATOM 3061 CD2 TYR H 180 -68.660 -24.515 48.878 1.00 44.21 C
ATOM 3062 C TYR H 180 -64.872 -27.458 48.988 1.00 41.56 C
ATOM 3063 O TYR H 180 -63.901 -27.094 49.668 1.00 44.79 O
ATOM 3064 N SER H 181 -64.776 -28.303 47.979 1.00 42.45 N
ATOM 3065 CA SER H 181 -63.486 -28.722 47.424 1.00 47.57 C
ATOM 3066 CB SER H 181 -62.964 -29.903 48.250 1.00 49.11 C
ATOM 3067 OG SER H 181 -62.023 -30.686 47.558 1.00 58.01 O
ATOM 3068 C SER H 181 -63.628 -29.059 45.905 1.00 48.49 C
ATOM 3069 O SER H 181 -64.699 -29.495 45.468 1.00 46.87 O
ATOM 3070 N LEU H 182 -62.583 -28.814 45.107 1.00 45.62 N
ATOM 3071 CA LEU H 182 -62.563 -29.222 43.687 1.00 45.23 C

ATOM 3072 CB LEU H 182 -63.197 -28.153 42.789 1.00 47.56 C
ATOM 3073 CG LEU H 182 -62.526 -26.758 42.658 1.00 49.70 C
ATOM 3074 CD1 LEU H 182 -61.286 -26.841 41.774 1.00 50.96 C
ATOM 3075 CD2 LEU H 182 -63.513 -25.725 42.099 1.00 46.07 C
ATOM 3076 C LEU H 182 -61.150 -29.540 43.204 1.00 45.36 C
ATOM 3077 O LEU H 182 -60.174 -29.255 43.879 1.00 47.78 O
ATOM 3078 N SER H 183 -61.057 -30.138 42.033 1.00 45.97 N
ATOM 3079 CA SER H 183 -59.793 -30.380 41.366 1.00 45.32 C
ATOM 3080 CB SER H 183 -59.574 -31.865 41.143 1.00 45.63 C
ATOM 3081 OG SER H 183 -59.003 -32.460 42.306 1.00 53.66 O
ATOM 3082 C SER H 183 -59.862 -29.662 40.036 1.00 48.58 C
ATOM 3083 O SER H 183 -60.949 -29.538 39.471 1.00 44.47 O
ATOM 3084 N SER H 184 -58.725 -29.129 39.588 1.00 44.71 N
ATOM 3085 CA SER H 184 -58.526 -28.706 38.217 1.00 45.35 C
ATOM 3086 CB SER H 184 -58.200 -27.226 38.135 1.00 44.69 C
ATOM 3087 OG SER H 184 -58.218 -26.768 36.789 1.00 45.50 O
ATOM 3088 C SER H 184 -57.385 -29.587 37.627 1.00 50.63 C
ATOM 3089 O SER H 184 -56.326 -29.828 38.259 1.00 49.90 O
ATOM 3090 N VAL H 185 -57.602 -30.063 36.412 1.00 46.67 N
ATOM 3091 CA VAL H 185 -56.773 -31.098 35.853 1.00 43.30 C
ATOM 3092 CB VAL H 185 -57.527 -32.408 36.081 1.00 47.04 C
ATOM 3093 CG1 VAL H 185 -58.042 -33.054 34.815 1.00 43.86 C
ATOM 3094 CG2 VAL H 185 -56.702 -33.346 36.921 1.00 50.87 C
ATOM 3095 C VAL H 185 -56.470 -30.730 34.397 1.00 47.54 C
ATOM 3096 O VAL H 185 -57.180 -29.926 33.779 1.00 45.40 O
ATOM 3097 N VAL H 186 -55.368 -31.258 33.886 1.00 48.33 N
ATOM 3098 CA VAL H 186 -54.921 -30.992 32.525 1.00 44.72 C
ATOM 3099 CB VAL H 186 -54.187 -29.643 32.391 1.00 46.32 C
ATOM 3100 CG1 VAL H 186 -52.965 -29.564 33.301 1.00 47.23 C
ATOM 3101 CG2 VAL H 186 -53.818 -29.371 30.915 1.00 46.24 C
ATOM 3102 C VAL H 186 -54.030 -32.125 32.060 1.00 48.02 C
ATOM 3103 O VAL H 186 -53.238 -32.629 32.870 1.00 44.23 O
ATOM 3104 N THR H 187 -54.212 -32.552 30.799 1.00 44.97 N
ATOM 3105 CA THR H 187 -53.358 -33.540 30.161 1.00 45.03 C
ATOM 3106 CB THR H 187 -54.107 -34.682 29.430 1.00 42.05 C
ATOM 3107 OG1 THR H 187 -54.955 -34.169 28.414 1.00 41.23 O
ATOM 3108 CG2 THR H 187 -54.945 -35.500 30.368 1.00 40.49 C

ATOM 3109 C THR H 187 -52.369 -32.823 29.221 1.00 52.72 C
ATOM 3110 O THR H 187 -52.715 -31.857 28.539 1.00 52.50 O
ATOM 3111 N VAL H 188 -51.111 -33.282 29.254 1.00 52.19 N
ATOM 3112 CA VAL H 188 -50.021 -32.709 28.447 1.00 47.35 C
ATOM 3113 CB VAL H 188 -49.160 -31.728 29.248 1.00 48.72 C
ATOM 3114 CG1 VAL H 188 -50.005 -30.585 29.726 1.00 50.31 C
ATOM 3115 CG2 VAL H 188 -48.419 -32.412 30.391 1.00 46.38 C
ATOM 3116 C VAL H 188 -49.107 -33.808 27.927 1.00 47.69 C
ATOM 3117 O VAL H 188 -49.196 -34.951 28.390 1.00 50.23 O
ATOM 3118 N PRO H 189 -48.224 -33.479 26.966 1.00 49.70 N
ATOM 3119 CA PRO H 189 -47.245 -34.496 26.537 1.00 48.90 C
ATOM 3120 CB PRO H 189 -46.538 -33.826 25.352 1.00 50.46 C
ATOM 3121 CG PRO H 189 -47.264 -32.530 25.106 1.00 51.12 C
ATOM 3122 CD PRO H 189 -47.918 -32.164 26.382 1.00 44.00 C
ATOM 3123 C PRO H 189 -46.214 -34.757 27.640 1.00 48.46 C
ATOM 3124 O PRO H 189 -45.690 -33.804 28.286 1.00 45.38 O
ATOM 3125 N SER H 190 -45.919 -36.022 27.876 1.00 49.30 N
ATOM 3126 CA SER H 190 -44.867 -36.365 28.870 1.00 53.86 C
ATOM 3127 CB SER H 190 -44.779 -37.866 29.017 1.00 54.62 C
ATOM 3128 OG SER H 190 -46.065 -38.399 29.232 1.00 55.63 O
ATOM 3129 C SER H 190 -43.473 -35.744 28.571 1.00 51.93 C
ATOM 3130 O SER H 190 -42.818 -35.199 29.477 1.00 59.36 O
ATOM 3131 N SER H 191 -43.084 -35.728 27.303 1.00 48.74 N
ATOM 3132 CA SER H 191 -41.868 -34.993 26.858 1.00 57.31 C
ATOM 3133 CB SER H 191 -41.873 -34.877 25.356 1.00 56.00 C
ATOM 3134 OG SER H 191 -41.493 -36.112 24.795 1.00 66.62 O
ATOM 3135 C SER H 191 -41.705 -33.587 27.389 1.00 57.33 C
ATOM 3136 O SER H 191 -40.600 -33.114 27.590 1.00 63.71 O
ATOM 3137 N SER H 192 -42.825 -32.914 27.576 1.00 61.43 N
ATOM 3138 CA SER H 192 -42.855 -31.515 27.983 1.00 60.52 C
ATOM 3139 CB SER H 192 -44.234 -30.931 27.618 1.00 60.86 C
ATOM 3140 OG SER H 192 -45.213 -31.295 28.590 1.00 55.94 O
ATOM 3141 C SER H 192 -42.619 -31.313 29.480 1.00 57.32 C
ATOM 3142 O SER H 192 -42.388 -30.198 29.921 1.00 61.82 O
ATOM 3143 N LEU H 193 -42.710 -32.365 30.283 1.00 60.26 N
ATOM 3144 CA LEU H 193 -42.564 -32.171 31.713 1.00 57.58 C
ATOM 3145 CB LEU H 193 -42.848 -33.451 32.460 1.00 56.15 C

ATOM 3146 CG LEU H 193 -44.296 -33.939 32.313 1.00 56.16 C
ATOM 3147 CD1 LEU H 193 -44.408 -35.357 32.862 1.00 55.06 C
ATOM 3148 CD2 LEU H 193 -45.333 -32.993 32.956 1.00 52.68 C
ATOM 3149 C LEU H 193 -41.198 -31.605 32.094 1.00 62.79 C
ATOM 3150 O LEU H 193 -41.112 -30.891 33.070 1.00 64.51 O
ATOM 3151 N GLY H 194 -40.151 -31.870 31.310 1.00 65.15 N
ATOM 3152 CA GLY H 194 -38.843 -31.241 31.531 1.00 63.53 C
ATOM 3153 C GLY H 194 -38.739 -29.765 31.144 1.00 66.28 C
ATOM 3154 O GLY H 194 -38.046 -28.991 31.802 1.00 77.17 O
ATOM 3155 N THR H 195 -39.430 -29.372 30.084 1.00 57.38 N
ATOM 3156 CA THR H 195 -39.232 -28.081 29.449 1.00 60.17 C
ATOM 3157 CB THR H 195 -39.130 -28.244 27.910 1.00 68.59 C
ATOM 3158 OG1 THR H 195 -40.295 -28.924 27.399 1.00 66.87 O
ATOM 3159 CG2 THR H 195 -37.840 -29.039 27.529 1.00 68.58 C
ATOM 3160 C THR H 195 -40.293 -27.030 29.766 1.00 60.67 C
ATOM 3161 O THR H 195 -39.958 -25.853 29.864 1.00 61.92 O
ATOM 3162 N GLN H 196 -41.561 -27.425 29.931 1.00 62.56 N
ATOM 3163 CA GLN H 196 -42.649 -26.427 30.132 1.00 63.52 C
ATOM 3164 CB GLN H 196 -43.888 -26.663 29.247 1.00 62.46 C
ATOM 3165 CG GLN H 196 -43.684 -27.412 27.920 1.00 66.22 C
ATOM 3166 CD GLN H 196 -43.075 -26.587 26.778 1.00 70.46 C
ATOM 3167 OE1 GLN H 196 -43.611 -25.521 26.394 1.00 63.75 O
ATOM 3168 NE2 GLN H 196 -41.967 -27.103 26.195 1.00 56.79 N
ATOM 3169 C GLN H 196 -43.046 -26.351 31.618 1.00 55.67 C
ATOM 3170 O GLN H 196 -43.005 -27.313 32.375 1.00 52.08 O
ATOM 3171 N THR H 197 -43.422 -25.168 32.018 1.00 60.91 N
ATOM 3172 CA THR H 197 -43.774 -24.930 33.384 1.00 58.96 C
ATOM 3173 CB THR H 197 -42.982 -23.743 33.997 1.00 60.82 C
ATOM 3174 OG1 THR H 197 -43.804 -23.060 34.942 1.00 73.19 O
ATOM 3175 CG2 THR H 197 -42.418 -22.752 32.941 1.00 58.45 C
ATOM 3176 C THR H 197 -45.322 -24.869 33.403 1.00 59.17 C
ATOM 3177 O THR H 197 -45.956 -24.353 32.481 1.00 55.33 O
ATOM 3178 N TYR H 198 -45.911 -25.508 34.407 1.00 55.70 N
ATOM 3179 CA TYR H 198 -47.348 -25.565 34.586 1.00 53.23 C
ATOM 3180 CB TYR H 198 -47.796 -26.999 34.415 1.00 57.41 C
ATOM 3181 CG TYR H 198 -47.514 -27.539 33.036 1.00 57.69 C
ATOM 3182 CD1 TYR H 198 -48.264 -27.118 31.931 1.00 52.93 C

ATOM 3183 CE1 TYR H 198 -47.994 -27.592 30.668 1.00 51.03 C
ATOM 3184 CZ TYR H 198 -46.994 -28.541 30.502 1.00 54.04 C
ATOM 3185 OH TYR H 198 -46.716 -29.064 29.265 1.00 54.58 O
ATOM 3186 CE2 TYR H 198 -46.268 -28.984 31.581 1.00 54.34 C
ATOM 3187 CD2 TYR H 198 -46.519 -28.468 32.836 1.00 53.90 C
ATOM 3188 C TYR H 198 -47.728 -25.061 35.979 1.00 50.18 C
ATOM 3189 O TYR H 198 -47.410 -25.713 36.976 1.00 45.34 O
ATOM 3190 N ILE H 199 -48.401 -23.909 36.028 1.00 52.79 N
ATOM 3191 CA ILE H 199 -48.778 -23.210 37.280 1.00 51.77 C
ATOM 3192 CB ILE H 199 -48.174 -21.789 37.317 1.00 49.80 C
ATOM 3193 CG1 ILE H 199 -46.645 -21.861 37.407 1.00 51.57 C
ATOM 3194 CD1 ILE H 199 -45.947 -20.558 37.036 1.00 49.45 C
ATOM 3195 CG2 ILE H 199 -48.723 -20.954 38.484 1.00 47.38 C
ATOM 3196 C ILE H 199 -50.289 -23.058 37.267 1.00 52.57 C
ATOM 3197 O ILE H 199 -50.824 -22.505 36.292 1.00 52.71 O
ATOM 3198 N CYS H 200 -50.978 -23.503 38.328 1.00 48.74 N
ATOM 3199 CA CYS H 200 -52.438 -23.260 38.457 1.00 43.54 C
ATOM 3200 CB CYS H 200 -53.190 -24.426 39.077 1.00 46.77 C
ATOM 3201 SG CYS H 200 -52.848 -24.678 40.780 1.00 51.43 S
ATOM 3202 C CYS H 200 -52.652 -22.008 39.215 1.00 41.03 C
ATOM 3203 O CYS H 200 -51.971 -21.763 40.222 1.00 47.42 O
ATOM 3204 N ASN H 201 -53.549 -21.176 38.699 1.00 39.72 N
ATOM 3205 CA ASN H 201 -53.846 -19.859 39.289 1.00 40.30 C
ATOM 3206 CB ASN H 201 -53.859 -18.766 38.214 1.00 40.08 C
ATOM 3207 CG ASN H 201 -52.706 -18.902 37.223 1.00 42.89 C
ATOM 3208 OD1 ASN H 201 -52.924 -19.271 36.071 1.00 43.69 O
ATOM 3209 ND2 ASN H 201 -51.462 -18.654 37.690 1.00 41.14 N
ATOM 3210 C ASN H 201 -55.215 -19.931 39.970 1.00 45.14 C
ATOM 3211 O ASN H 201 -56.267 -19.906 39.287 1.00 48.55 O
ATOM 3212 N VAL H 202 -55.212 -20.061 41.302 1.00 42.76 N
ATOM 3213 CA VAL H 202 -56.460 -20.150 42.075 1.00 41.68 C
ATOM 3214 CB VAL H 202 -56.369 -21.211 43.161 1.00 41.82 C
ATOM 3215 CG1 VAL H 202 -57.705 -21.309 43.915 1.00 45.97 C
ATOM 3216 CG2 VAL H 202 -55.956 -22.544 42.555 1.00 41.45 C
ATOM 3217 C VAL H 202 -56.809 -18.780 42.678 1.00 44.23 C
ATOM 3218 O VAL H 202 -55.985 -18.172 43.340 1.00 51.71 O
ATOM 3219 N ASN H 203 -58.019 -18.298 42.402 1.00 45.50 N

ATOM 3220 CA ASN H 203 -58.550 -17.102 42.962 1.00 46.69 C
ATOM 3221 CB ASN H 203 -58.635 -15.980 41.919 1.00 49.11 C
ATOM 3222 CG ASN H 203 -58.971 -14.615 42.561 1.00 58.10 C
ATOM 3223 OD1 ASN H 203 -59.010 -14.487 43.790 1.00 63.81 O
ATOM 3224 ND2 ASN H 203 -59.231 -13.611 41.744 1.00 55.96 N
ATOM 3225 C ASN H 203 -59.906 -17.381 43.684 1.00 44.90 C
ATOM 3226 O ASN H 203 -60.852 -17.920 43.100 1.00 55.21 O
ATOM 3227 N HIS H 204 -59.951 -17.038 44.974 1.00 45.55 N
ATOM 3228 CA HIS H 204 -61.155 -17.104 45.846 1.00 43.44 C
ATOM 3229 CB HIS H 204 -60.897 -18.105 46.972 1.00 43.65 C
ATOM 3230 CG HIS H 204 -62.049 -18.321 47.904 1.00 42.91 C
ATOM 3231 ND1 HIS H 204 -63.290 -18.726 47.494 1.00 43.30 N
ATOM 3232 CE1 HIS H 204 -64.078 -18.874 48.540 1.00 41.11 C
ATOM 3233 NE2 HIS H 204 -63.379 -18.622 49.624 1.00 43.92 N
ATOM 3234 CD2 HIS H 204 -62.110 -18.271 49.249 1.00 46.90 C
ATOM 3235 C HIS H 204 -61.462 -15.695 46.385 1.00 42.50 C
ATOM 3236 O HIS H 204 -61.140 -15.359 47.518 1.00 46.20 O
ATOM 3237 N LYS H 205 -62.092 -14.884 45.541 1.00 46.05 N
ATOM 3238 CA LYS H 205 -62.511 -13.528 45.899 1.00 51.86 C
ATOM 3239 CB LYS H 205 -63.429 -12.930 44.837 1.00 58.49 C
ATOM 3240 CG LYS H 205 -62.810 -11.827 43.986 1.00 71.80 C
ATOM 3241 CD LYS H 205 -63.814 -10.743 43.569 1.00 80.99 C
ATOM 3242 CE LYS H 205 -63.185 -9.340 43.538 1.00 93.49 C
ATOM 3243 NZ LYS H 205 -62.851 -8.792 44.898 1.00 90.13 N
ATOM 3244 C LYS H 205 -63.160 -13.346 47.293 1.00 50.31 C
ATOM 3245 O LYS H 205 -62.728 -12.460 48.022 1.00 47.87 O
ATOM 3246 N PRO H 206 -64.167 -14.184 47.672 1.00 51.61 N
ATOM 3247 CA PRO H 206 -64.866 -13.971 48.952 1.00 47.90 C
ATOM 3248 CB PRO H 206 -65.835 -15.160 49.033 1.00 46.22 C
ATOM 3249 CG PRO H 206 -66.134 -15.466 47.593 1.00 45.69 C
ATOM 3250 CD PRO H 206 -64.765 -15.334 46.956 1.00 48.10 C
ATOM 3251 C PRO H 206 -63.945 -13.957 50.145 1.00 49.41 C
ATOM 3252 O PRO H 206 -64.254 -13.256 51.113 1.00 49.60 O
ATOM 3253 N SER H 207 -62.821 -14.690 50.089 1.00 49.39 N
ATOM 3254 CA SER H 207 -61.828 -14.595 51.170 1.00 45.82 C
ATOM 3255 CB SER H 207 -61.521 -15.963 51.749 1.00 46.55 C
ATOM 3256 OG SER H 207 -60.670 -16.695 50.908 1.00 52.67 O

ATOM 3257 C SER H 207 -60.530 -13.922 50.781 1.00 47.62 C
ATOM 3258 O SER H 207 -59.572 -14.048 51.499 1.00 43.88 O
ATOM 3259 N ASN H 208 -60.484 -13.191 49.671 1.00 55.48 N
ATOM 3260 CA ASN H 208 -59.233 -12.572 49.184 1.00 60.42 C
ATOM 3261 CB ASN H 208 -58.926 -11.338 50.051 1.00 68.31 C
ATOM 3262 CG ASN H 208 -59.456 -10.073 49.433 1.00 75.00 C
ATOM 3263 OD1 ASN H 208 -60.604 -9.674 49.685 1.00 68.43 O
ATOM 3264 ND2 ASN H 208 -58.639 -9.454 48.573 1.00 74.82 N
ATOM 3265 C ASN H 208 -57.971 -13.461 49.043 1.00 55.92 C
ATOM 3266 O ASN H 208 -56.874 -12.948 49.080 1.00 60.45 O
ATOM 3267 N THR H 209 -58.131 -14.767 48.858 1.00 50.71 N
ATOM 3268 CA THR H 209 -57.013 -15.656 48.592 1.00 51.75 C
ATOM 3269 CB THR H 209 -57.347 -17.136 48.922 1.00 52.28 C
ATOM 3270 OG1 THR H 209 -58.002 -17.232 50.172 1.00 55.26 O
ATOM 3271 CG2 THR H 209 -56.146 -17.952 49.018 1.00 51.11 C
ATOM 3272 C THR H 209 -56.730 -15.607 47.099 1.00 54.56 C
ATOM 3273 O THR H 209 -57.639 -15.714 46.270 1.00 57.56 O
ATOM 3274 N LYS H 210 -55.467 -15.428 46.757 1.00 61.08 N
ATOM 3275 CA LYS H 210 -54.977 -15.663 45.409 1.00 61.99 C
ATOM 3276 CB LYS H 210 -54.671 -14.349 44.684 1.00 66.53 C
ATOM 3277 CG LYS H 210 -54.607 -14.513 43.158 1.00 84.48 C
ATOM 3278 CD LYS H 210 -55.235 -13.359 42.379 1.00 95.68 C
ATOM 3279 CE LYS H 210 -54.306 -12.154 42.248 1.00101.92 C
ATOM 3280 NZ LYS H 210 -54.980 -10.976 41.624 1.00100.78 N
ATOM 3281 C LYS H 210 -53.747 -16.525 45.602 1.00 56.17 C
ATOM 3282 O LYS H 210 -52.894 -16.149 46.363 1.00 57.83 O
ATOM 3283 N VAL H 211 -53.705 -17.711 44.994 1.00 51.40 N
ATOM 3284 CA VAL H 211 -52.507 -18.578 45.017 1.00 55.10 C
ATOM 3285 CB VAL H 211 -52.759 -19.829 45.885 1.00 50.87 C
ATOM 3286 CG1 VAL H 211 -51.551 -20.749 45.949 1.00 48.36 C
ATOM 3287 CG2 VAL H 211 -53.100 -19.370 47.269 1.00 57.76 C
ATOM 3288 C VAL H 211 -52.061 -18.935 43.578 1.00 48.69 C
ATOM 3289 O VAL H 211 -52.875 -19.102 42.686 1.00 61.55 O
ATOM 3290 N ASP H 212 -50.764 -18.990 43.359 1.00 48.12 N
ATOM 3291 CA ASP H 212 -50.175 -19.511 42.109 1.00 51.69 C
ATOM 3292 CB ASP H 212 -49.333 -18.465 41.423 1.00 45.77 C
ATOM 3293 CG ASP H 212 -50.137 -17.233 41.016 1.00 54.15 C

ATOM 3294 OD1 ASP H 212 -51.262 -17.327 40.446 1.00 59.15 O
ATOM 3295 OD2 ASP H 212 -49.623 -16.128 41.258 1.00 67.10 O
ATOM 3296 C ASP H 212 -49.336 -20.714 42.495 1.00 47.83 C
ATOM 3297 O ASP H 212 -48.432 -20.554 43.292 1.00 50.59 O
ATOM 3298 N LYS H 213 -49.683 -21.912 42.005 1.00 44.67 N
ATOM 3299 CA LYS H 213 -49.000 -23.156 42.433 1.00 51.97 C
ATOM 3300 CB LYS H 213 -49.983 -24.111 43.104 1.00 47.95 C
ATOM 3301 CG LYS H 213 -49.380 -25.394 43.660 1.00 55.47 C
ATOM 3302 CD LYS H 213 -48.497 -25.232 44.903 1.00 61.97 C
ATOM 3303 CE LYS H 213 -49.171 -24.379 45.976 1.00 68.45 C
ATOM 3304 NZ LYS H 213 -48.568 -24.496 47.321 1.00 77.22 N
ATOM 3305 C LYS H 213 -48.310 -23.874 41.268 1.00 56.65 C
ATOM 3306 O LYS H 213 -48.974 -24.341 40.315 1.00 57.68 O
ATOM 3307 N LYS H 214 -46.990 -24.009 41.363 1.00 56.58 N
ATOM 3308 CA LYS H 214 -46.237 -24.724 40.346 1.00 56.31 C
ATOM 3309 CB LYS H 214 -44.772 -24.309 40.332 1.00 62.43 C
ATOM 3310 CG LYS H 214 -44.021 -24.848 39.125 1.00 68.91 C
ATOM 3311 CD LYS H 214 -42.580 -24.361 39.051 1.00 74.34 C
ATOM 3312 CE LYS H 214 -41.939 -24.831 37.749 1.00 79.49 C
ATOM 3313 NZ LYS H 214 -40.463 -24.779 37.834 1.00 81.85 N
ATOM 3314 C LYS H 214 -46.378 -26.218 40.584 1.00 52.85 C
ATOM 3315 O LYS H 214 -46.132 -26.704 41.693 1.00 54.11 O
ATOM 3316 N VAL H 215 -46.794 -26.939 39.540 1.00 51.67 N
ATOM 3317 CA VAL H 215 -46.956 -28.385 39.607 1.00 53.63 C
ATOM 3318 CB VAL H 215 -48.336 -28.874 39.133 1.00 51.24 C
ATOM 3319 CG1 VAL H 215 -48.422 -30.403 39.169 1.00 47.53 C
ATOM 3320 CG2 VAL H 215 -49.439 -28.235 39.955 1.00 50.70 C
ATOM 3321 C VAL H 215 -45.902 -28.970 38.714 1.00 58.76 C
ATOM 3322 O VAL H 215 -45.763 -28.573 37.551 1.00 60.52 O
ATOM 3323 N GLU H 216 -45.160 -29.910 39.282 1.00 65.89 N
ATOM 3324 CA GLU H 216 -44.016 -30.496 38.615 1.00 71.71 C
ATOM 3325 CB GLU H 216 -42.799 -29.573 38.779 1.00 76.50 C
ATOM 3326 CG GLU H 216 -42.411 -29.237 40.219 1.00 73.86 C
ATOM 3327 CD GLU H 216 -41.287 -28.210 40.285 1.00 73.21 C
ATOM 3328 OE1 GLU H 216 -40.767 -27.805 39.231 1.00 68.42 O
ATOM 3329 OE2 GLU H 216 -40.923 -27.798 41.398 1.00 76.53 O
ATOM 3330 C GLU H 216 -43.788 -31.864 39.215 1.00 63.28 C

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ATOM   3331  O   GLU H 216     -44.221 -32.099  40.329  1.00 56.42           O
ATOM   3332  N   PRO H 217     -43.089 -32.763  38.498  1.00 72.31           N
ATOM   3333  CA  PRO H 217     -42.888 -34.117  39.051  1.00 78.06           C
ATOM   3334  CB  PRO H 217     -42.233 -34.884  37.881  1.00 81.39           C
ATOM   3335  CG  PRO H 217     -41.854 -33.861  36.834  1.00 76.24           C
ATOM   3336  CD  PRO H 217     -42.163 -32.488  37.376  1.00 73.82           C
ATOM   3337  C   PRO H 217     -41.970 -34.099  40.289  1.00 79.85           C
ATOM   3338  O   PRO H 217     -41.574 -33.025  40.733  1.00 75.26           O
ATOM   3339  N   LYS H 218     -41.649 -35.260  40.856  1.00 94.91           N
ATOM   3340  CA  LYS H 218     -40.543 -35.356  41.847  1.00 99.22           C
ATOM   3341  CB  LYS H 218     -41.062 -35.957  43.154  1.00100.54           C
ATOM   3342  CG  LYS H 218     -42.058 -35.066  43.885  1.00106.02           C
ATOM   3343  CD  LYS H 218     -42.702 -35.752  45.093  1.00108.41           C
ATOM   3344  CE  LYS H 218     -43.499 -37.014  44.729  1.00110.39           C
ATOM   3345  NZ  LYS H 218     -44.348 -36.906  43.500  1.00107.24           N
ATOM   3346  C   LYS H 218     -39.375 -36.165  41.251  1.00 93.31           C
ATOM   3347  O   LYS H 218     -39.328 -36.371  40.038  1.00 76.97           O
ATOM   3348  N   SER H 219     -38.423 -36.578  42.090  1.00105.63           N
ATOM   3349  CA  SER H 219     -37.429 -37.634  41.759  1.00116.05           C
ATOM   3350  CB  SER H 219     -37.428 -38.688  42.877  1.00116.57           C
ATOM   3351  OG  SER H 219     -36.877 -38.168  44.075  1.00110.43           O
ATOM   3352  C   SER H 219     -37.595 -38.358  40.398  1.00115.80           C
ATOM   3353  O   SER H 219     -36.665 -38.430  39.582  1.00 94.79           O
TER    3354      SER H 219
ATOM   3355  N   ASP L   1    -100.743 -20.133  40.123  1.00 60.03           N
ATOM   3356  CA  ASP L   1     -99.470 -20.153  39.351  1.00 56.68           C
ATOM   3357  CB  ASP L   1     -98.282 -20.524  40.238  1.00 55.60           C
ATOM   3358  CG  ASP L   1     -97.883 -19.397  41.189  1.00 55.36           C
ATOM   3359  OD1 ASP L   1     -98.788 -18.701  41.679  1.00 43.01           O
ATOM   3360  OD2 ASP L   1     -96.655 -19.204  41.410  1.00 56.12           O
ATOM   3361  C   ASP L   1     -99.530 -21.145  38.199  1.00 56.78           C
ATOM   3362  O   ASP L   1     -99.911 -22.290  38.368  1.00 52.68           O
ATOM   3363  N   ILE L   2     -99.094 -20.707  37.039  1.00 46.54           N
ATOM   3364  CA  ILE L   2     -98.991 -21.573  35.919  1.00 41.73           C
ATOM   3365  CB  ILE L   2     -99.070 -20.733  34.613  1.00 41.94           C
ATOM   3366  CG1 ILE L   2    -100.348 -19.898  34.571  1.00 42.20           C
ATOM   3367  CD1 ILE L   2    -101.598 -20.707  34.322  1.00 48.53           C
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ATOM 3368 CG2 ILE L 2 -98.945 -21.591 33.367 1.00 40.99 C
ATOM 3369 C ILE L 2 -97.646 -22.291 36.089 1.00 37.02 C
ATOM 3370 O ILE L 2 -96.624 -21.684 36.279 1.00 42.12 O
ATOM 3371 N GLN L 3 -97.634 -23.597 36.040 1.00 38.68 N
ATOM 3372 CA GLN L 3 -96.379 -24.315 35.970 1.00 40.25 C
ATOM 3373 CB GLN L 3 -96.387 -25.512 36.940 1.00 46.12 C
ATOM 3374 CG GLN L 3 -94.974 -26.054 37.274 1.00 56.85 C
ATOM 3375 CD GLN L 3 -94.910 -27.232 38.293 1.00 68.39 C
ATOM 3376 OE1 GLN L 3 -95.900 -27.570 38.970 1.00 77.12 O
ATOM 3377 NE2 GLN L 3 -93.711 -27.826 38.432 1.00 59.02 N
ATOM 3378 C GLN L 3 -96.097 -24.669 34.491 1.00 39.84 C
ATOM 3379 O GLN L 3 -96.992 -24.952 33.688 1.00 38.41 O
ATOM 3380 N LEU L 4 -94.833 -24.584 34.114 1.00 39.87 N
ATOM 3381 CA LEU L 4 -94.412 -24.837 32.781 1.00 33.55 C
ATOM 3382 CB LEU L 4 -93.754 -23.590 32.228 1.00 36.08 C
ATOM 3383 CG LEU L 4 -94.661 -22.408 31.890 1.00 39.00 C
ATOM 3384 CD1 LEU L 4 -93.844 -21.338 31.190 1.00 43.38 C
ATOM 3385 CD2 LEU L 4 -95.799 -22.789 30.973 1.00 37.22 C
ATOM 3386 C LEU L 4 -93.461 -26.008 32.785 1.00 35.96 C
ATOM 3387 O LEU L 4 -92.432 -26.000 33.461 1.00 36.91 O
ATOM 3388 N THR L 5 -93.766 -27.020 31.981 1.00 39.11 N
ATOM 3389 CA THR L 5 -92.981 -28.240 31.993 1.00 39.59 C
ATOM 3390 CB THR L 5 -93.856 -29.414 32.506 1.00 43.38 C
ATOM 3391 OG1 THR L 5 -94.150 -29.153 33.886 1.00 47.91 O
ATOM 3392 CG2 THR L 5 -93.142 -30.761 32.389 1.00 42.26 C
ATOM 3393 C THR L 5 -92.510 -28.475 30.601 1.00 38.66 C
ATOM 3394 O THR L 5 -93.288 -28.398 29.654 1.00 41.34 O
ATOM 3395 N GLN L 6 -91.241 -28.814 30.499 1.00 39.55 N
ATOM 3396 CA GLN L 6 -90.545 -28.825 29.247 1.00 41.90 C
ATOM 3397 CB GLN L 6 -89.253 -28.025 29.297 1.00 34.33 C
ATOM 3398 CG GLN L 6 -89.493 -26.554 29.329 1.00 38.86 C
ATOM 3399 CD GLN L 6 -88.236 -25.668 29.193 1.00 38.06 C
ATOM 3400 OE1 GLN L 6 -88.112 -24.664 29.903 1.00 37.01 O
ATOM 3401 NE2 GLN L 6 -87.342 -26.007 28.284 1.00 33.02 N
ATOM 3402 C GLN L 6 -90.247 -30.277 29.007 1.00 46.04 C
ATOM 3403 O GLN L 6 -89.918 -30.981 29.942 1.00 41.75 O
ATOM 3404 N SER L 7 -90.383 -30.710 27.762 1.00 44.57 N

ATOM 3405 CA SER L 7 -89.972 -32.044 27.388 1.00 49.11 C
ATOM 3406 CB SER L 7 -91.163 -32.966 27.067 1.00 51.80 C
ATOM 3407 OG SER L 7 -91.994 -33.089 28.197 1.00 58.77 O
ATOM 3408 C SER L 7 -89.153 -31.916 26.134 1.00 46.62 C
ATOM 3409 O SER L 7 -89.525 -31.154 25.217 1.00 42.62 O
ATOM 3410 N PRO L 8 -88.081 -32.697 26.059 1.00 44.92 N
ATOM 3411 CA PRO L 8 -87.584 -33.525 27.160 1.00 40.53 C
ATOM 3412 CB PRO L 8 -86.770 -34.583 26.440 1.00 39.04 C
ATOM 3413 CG PRO L 8 -86.248 -33.858 25.248 1.00 43.53 C
ATOM 3414 CD PRO L 8 -87.405 -33.010 24.789 1.00 43.66 C
ATOM 3415 C PRO L 8 -86.679 -32.627 28.033 1.00 46.34 C
ATOM 3416 O PRO L 8 -86.420 -31.467 27.658 1.00 49.19 O
ATOM 3417 N SER L 9 -86.191 -33.159 29.150 1.00 43.20 N
ATOM 3418 CA SER L 9 -85.256 -32.435 30.025 1.00 41.41 C
ATOM 3419 CB SER L 9 -85.023 -33.210 31.313 1.00 42.61 C
ATOM 3420 OG SER L 9 -86.263 -33.426 31.969 1.00 52.72 O
ATOM 3421 C SER L 9 -83.901 -32.221 29.385 1.00 43.37 C
ATOM 3422 O SER L 9 -83.270 -31.192 29.624 1.00 41.50 O
ATOM 3423 N SER L 10 -83.423 -33.221 28.639 1.00 38.38 N
ATOM 3424 CA SER L 10 -82.217 -33.097 27.850 1.00 42.27 C
ATOM 3425 CB SER L 10 -80.998 -33.615 28.587 1.00 44.54 C
ATOM 3426 OG SER L 10 -81.348 -34.727 29.354 1.00 46.26 O
ATOM 3427 C SER L 10 -82.342 -33.825 26.534 1.00 42.24 C
ATOM 3428 O SER L 10 -83.188 -34.692 26.376 1.00 45.25 O
ATOM 3429 N LEU L 11 -81.510 -33.436 25.580 1.00 42.22 N
ATOM 3430 CA LEU L 11 -81.502 -34.094 24.302 1.00 46.86 C
ATOM 3431 CB LEU L 11 -82.645 -33.584 23.360 1.00 46.54 C
ATOM 3432 CG LEU L 11 -82.588 -32.246 22.619 1.00 47.72 C
ATOM 3433 CD1 LEU L 11 -81.720 -32.318 21.374 1.00 46.51 C
ATOM 3434 CD2 LEU L 11 -83.975 -31.802 22.175 1.00 50.57 C
ATOM 3435 C LEU L 11 -80.132 -33.947 23.716 1.00 45.55 C
ATOM 3436 O LEU L 11 -79.400 -33.017 24.069 1.00 42.05 O
ATOM 3437 N SER L 12 -79.812 -34.890 22.833 1.00 44.10 N
ATOM 3438 CA SER L 12 -78.579 -34.927 22.115 1.00 47.32 C
ATOM 3439 CB SER L 12 -77.769 -36.134 22.527 1.00 47.59 C
ATOM 3440 OG SER L 12 -77.587 -36.100 23.907 1.00 55.37 O
ATOM 3441 C SER L 12 -78.856 -35.011 20.621 1.00 41.64 C

ATOM 3442 O SER L 12 -79.784 -35.662 20.185 1.00 41.81 O
ATOM 3443 N ALA L 13 -77.984 -34.382 19.863 1.00 34.51 N
ATOM 3444 CA ALA L 13 -78.162 -34.232 18.481 1.00 37.49 C
ATOM 3445 CB ALA L 13 -79.251 -33.188 18.237 1.00 38.66 C
ATOM 3446 C ALA L 13 -76.849 -33.794 17.902 1.00 37.78 C
ATOM 3447 O ALA L 13 -75.965 -33.383 18.637 1.00 42.91 O
ATOM 3448 N SER L 14 -76.718 -33.896 16.596 1.00 38.50 N
ATOM 3449 CA SER L 14 -75.553 -33.400 15.872 1.00 39.88 C
ATOM 3450 CB SER L 14 -75.265 -34.330 14.690 1.00 41.70 C
ATOM 3451 OG SER L 14 -75.243 -35.685 15.147 1.00 50.00 O
ATOM 3452 C SER L 14 -75.726 -32.017 15.322 1.00 36.69 C
ATOM 3453 O SER L 14 -76.854 -31.589 15.000 1.00 38.17 O
ATOM 3454 N VAL L 15 -74.599 -31.341 15.125 1.00 33.68 N
ATOM 3455 CA VAL L 15 -74.562 -30.143 14.255 1.00 34.72 C
ATOM 3456 CB VAL L 15 -73.128 -29.688 13.966 1.00 35.42 C
ATOM 3457 CG1 VAL L 15 -73.081 -28.540 12.971 1.00 37.08 C
ATOM 3458 CG2 VAL L 15 -72.490 -29.202 15.241 1.00 41.03 C
ATOM 3459 C VAL L 15 -75.314 -30.483 12.955 1.00 36.76 C
ATOM 3460 O VAL L 15 -75.199 -31.571 12.431 1.00 34.76 O
ATOM 3461 N GLY L 16 -76.141 -29.561 12.498 1.00 37.83 N
ATOM 3462 CA GLY L 16 -76.983 -29.767 11.331 1.00 35.34 C
ATOM 3463 C GLY L 16 -78.368 -30.354 11.580 1.00 35.24 C
ATOM 3464 O GLY L 16 -79.204 -30.270 10.700 1.00 35.57 O
ATOM 3465 N ASP L 17 -78.598 -31.011 12.716 1.00 35.97 N
ATOM 3466 CA ASP L 17 -79.889 -31.678 12.980 1.00 37.29 C
ATOM 3467 CB ASP L 17 -79.816 -32.681 14.136 1.00 40.30 C
ATOM 3468 CG ASP L 17 -79.007 -33.929 13.825 1.00 40.31 C
ATOM 3469 OD1 ASP L 17 -78.519 -34.046 12.696 1.00 44.73 O
ATOM 3470 OD2 ASP L 17 -78.892 -34.803 14.757 1.00 43.21 O
ATOM 3471 C ASP L 17 -80.993 -30.664 13.315 1.00 38.51 C
ATOM 3472 O ASP L 17 -80.694 -29.524 13.707 1.00 39.66 O
ATOM 3473 N ARG L 18 -82.255 -31.103 13.115 1.00 37.05 N
ATOM 3474 CA ARG L 18 -83.433 -30.309 13.375 1.00 34.56 C
ATOM 3475 CB ARG L 18 -84.564 -30.548 12.363 1.00 36.72 C
ATOM 3476 CG ARG L 18 -85.928 -29.977 12.795 1.00 35.05 C
ATOM 3477 CD ARG L 18 -87.032 -30.296 11.778 1.00 33.05 C
ATOM 3478 NE ARG L 18 -88.249 -30.585 12.583 1.00 36.06 N

ATOM 3479 CZ ARG L 18 -89.271 -29.790 12.673 1.00 37.43 C
ATOM 3480 NH1 ARG L 18 -89.291 -28.649 11.997 1.00 58.72 N
ATOM 3481 NH2 ARG L 18 -90.278 -30.110 13.419 1.00 37.64 N
ATOM 3482 C ARG L 18 -83.868 -30.796 14.717 1.00 36.23 C
ATOM 3483 O ARG L 18 -83.850 -31.970 15.000 1.00 30.90 O
ATOM 3484 N VAL L 19 -84.298 -29.900 15.569 1.00 38.03 N
ATOM 3485 CA VAL L 19 -84.561 -30.332 16.920 1.00 35.82 C
ATOM 3486 CB VAL L 19 -83.215 -30.238 17.671 1.00 39.54 C
ATOM 3487 CG1 VAL L 19 -83.155 -29.089 18.648 1.00 39.55 C
ATOM 3488 CG2 VAL L 19 -82.852 -31.555 18.256 1.00 38.99 C
ATOM 3489 C VAL L 19 -85.700 -29.496 17.453 1.00 34.04 C
ATOM 3490 O VAL L 19 -85.968 -28.373 16.960 1.00 31.57 O
ATOM 3491 N THR L 20 -86.354 -30.059 18.452 1.00 32.83 N
ATOM 3492 CA THR L 20 -87.626 -29.581 18.938 1.00 33.79 C
ATOM 3493 CB THR L 20 -88.651 -30.525 18.299 1.00 41.76 C
ATOM 3494 OG1 THR L 20 -89.550 -29.788 17.467 1.00 52.07 O
ATOM 3495 CG2 THR L 20 -89.352 -31.428 19.266 1.00 41.00 C
ATOM 3496 C THR L 20 -87.604 -29.606 20.492 1.00 33.07 C
ATOM 3497 O THR L 20 -86.973 -30.477 21.090 1.00 29.39 O
ATOM 3498 N ILE L 21 -88.220 -28.625 21.147 1.00 32.90 N
ATOM 3499 CA ILE L 21 -88.350 -28.636 22.588 1.00 32.88 C
ATOM 3500 CB ILE L 21 -87.341 -27.678 23.248 1.00 36.10 C
ATOM 3501 CG1 ILE L 21 -85.938 -28.095 22.953 1.00 34.95 C
ATOM 3502 CD1 ILE L 21 -84.933 -27.052 23.352 1.00 38.03 C
ATOM 3503 CG2 ILE L 21 -87.462 -27.654 24.784 1.00 38.09 C
ATOM 3504 C ILE L 21 -89.772 -28.220 22.857 1.00 30.39 C
ATOM 3505 O ILE L 21 -90.271 -27.284 22.231 1.00 30.99 O
ATOM 3506 N THR L 22 -90.429 -28.901 23.773 1.00 31.18 N
ATOM 3507 CA THR L 22 -91.911 -28.659 23.992 1.00 36.93 C
ATOM 3508 CB THR L 22 -92.787 -29.952 23.791 1.00 39.14 C
ATOM 3509 OG1 THR L 22 -92.960 -30.205 22.372 1.00 45.58 O
ATOM 3510 CG2 THR L 22 -94.246 -29.824 24.372 1.00 46.36 C
ATOM 3511 C THR L 22 -92.130 -28.086 25.369 1.00 36.51 C
ATOM 3512 O THR L 22 -91.408 -28.382 26.325 1.00 35.06 O
ATOM 3513 N ACYS L 23 -93.160 -27.269 25.482 0.40 38.82 N
ATOM 3514 N BCYS L 23 -93.169 -27.292 25.481 0.60 38.81 N
ATOM 3515 CA ACYS L 23 -93.456 -26.585 26.720 0.40 39.59 C

ATOM 3516 CA BCYS L 23 -93.457 -26.619 26.715 0.60 39.24 C
ATOM 3517 CB ACYS L 23 -93.072 -25.120 26.570 0.40 39.08 C
ATOM 3518 CB BCYS L 23 -93.058 -25.162 26.555 0.60 38.09 C
ATOM 3519 SG ACYS L 23 -93.428 -24.138 28.012 0.40 41.43 S
ATOM 3520 SG BCYS L 23 -93.443 -24.175 27.968 0.60 40.10 S
ATOM 3521 C ACYS L 23 -94.933 -26.741 27.027 0.40 38.77 C
ATOM 3522 C BCYS L 23 -94.931 -26.776 27.008 0.60 37.95 C
ATOM 3523 O ACYS L 23 -95.777 -26.190 26.329 0.40 36.74 O
ATOM 3524 O BCYS L 23 -95.766 -26.262 26.281 0.60 35.00 O
ATOM 3525 N ARG L 24 -95.226 -27.487 28.088 1.00 39.67 N
ATOM 3526 CA ARG L 24 -96.585 -27.775 28.501 1.00 42.31 C
ATOM 3527 CB ARG L 24 -96.658 -29.280 28.949 1.00 49.25 C
ATOM 3528 CG ARG L 24 -97.944 -30.021 28.543 1.00 62.65 C
ATOM 3529 CD ARG L 24 -98.654 -30.713 29.707 1.00 70.81 C
ATOM 3530 NE ARG L 24 -99.086 -32.081 29.393 1.00 72.35 N
ATOM 3531 CZ ARG L 24 -99.872 -32.826 30.168 1.00 70.44 C
ATOM 3532 NH1 ARG L 24 -100.338 -32.362 31.317 1.00 90.57 N
ATOM 3533 NH2 ARG L 24 -100.224 -34.045 29.782 1.00 91.46 N
ATOM 3534 C ARG L 24 -96.928 -26.829 29.655 1.00 37.93 C
ATOM 3535 O ARG L 24 -96.250 -26.858 30.709 1.00 35.51 O
ATOM 3536 N SER L 25 -97.922 -25.978 29.466 1.00 33.64 N
ATOM 3537 CA SER L 25 -98.442 -25.200 30.561 1.00 35.77 C
ATOM 3538 CB SER L 25 -98.875 -23.848 30.092 1.00 35.32 C
ATOM 3539 OG SER L 25 -99.993 -23.912 29.263 1.00 40.09 O
ATOM 3540 C SER L 25 -99.599 -25.989 31.278 1.00 42.05 C
ATOM 3541 O SER L 25 -100.268 -26.825 30.688 1.00 39.78 O
ATOM 3542 N SER L 26 -99.760 -25.739 32.570 1.00 39.85 N
ATOM 3543 CA SER L 26 -100.614 -26.504 33.442 1.00 40.50 C
ATOM 3544 CB SER L 26 -100.214 -26.256 34.908 1.00 44.89 C
ATOM 3545 OG SER L 26 -100.355 -24.863 35.248 1.00 44.42 O
ATOM 3546 C SER L 26 -102.035 -26.012 33.249 1.00 43.80 C
ATOM 3547 O SER L 26 -102.966 -26.746 33.486 1.00 50.12 O
ATOM 3548 N GLN L 27 -102.178 -24.737 32.886 1.00 44.81 N
ATOM 3549 CA GLN L 27 -103.424 -24.162 32.395 1.00 43.15 C
ATOM 3550 CB GLN L 27 -104.022 -23.234 33.421 1.00 53.24 C
ATOM 3551 CG GLN L 27 -104.518 -23.815 34.727 1.00 61.96 C
ATOM 3552 CD GLN L 27 -105.301 -22.729 35.487 1.00 73.23 C

ATOM 3553 OE1 GLN L 27 -104.848 -21.557 35.617 1.00 69.92 O
ATOM 3554 NE2 GLN L 27 -106.503 -23.092 35.946 1.00 76.08 N
ATOM 3555 C GLN L 27 -103.150 -23.312 31.156 1.00 41.21 C
ATOM 3556 O GLN L 27 -101.993 -23.069 30.778 1.00 50.25 O
ATOM 3557 N THR L 28 -104.216 -22.836 30.521 1.00 43.73 N
ATOM 3558 CA THR L 28 -104.099 -21.991 29.331 1.00 44.58 C
ATOM 3559 CB THR L 28 -105.459 -21.621 28.760 1.00 43.91 C
ATOM 3560 OG1 THR L 28 -106.303 -21.205 29.836 1.00 42.89 O
ATOM 3561 CG2 THR L 28 -106.059 -22.851 27.977 1.00 46.73 C
ATOM 3562 C THR L 28 -103.396 -20.729 29.721 1.00 43.44 C
ATOM 3563 O THR L 28 -103.351 -20.440 30.881 1.00 44.23 O
ATOM 3564 N ILE L 29 -102.860 -20.013 28.729 1.00 42.61 N
ATOM 3565 CA ILE L 29 -102.064 -18.803 28.923 1.00 39.84 C
ATOM 3566 CB ILE L 29 -100.523 -19.074 28.842 1.00 37.37 C
ATOM 3567 CG1 ILE L 29 -100.206 -19.923 27.632 1.00 35.90 C
ATOM 3568 CD1 ILE L 29 -98.746 -20.070 27.343 1.00 37.91 C
ATOM 3569 CG2 ILE L 29 -99.999 -19.728 30.103 1.00 36.31 C
ATOM 3570 C ILE L 29 -102.417 -17.758 27.882 1.00 42.82 C
ATOM 3571 O ILE L 29 -101.521 -17.163 27.238 1.00 42.53 O
ATOM 3572 N VAL L 30 -103.709 -17.524 27.693 1.00 42.04 N
ATOM 3573 CA VAL L 30 -104.096 -16.356 26.942 1.00 42.38 C
ATOM 3574 CB VAL L 30 -105.099 -16.621 25.748 1.00 48.77 C
ATOM 3575 CG1 VAL L 30 -105.659 -18.041 25.696 1.00 49.22 C
ATOM 3576 CG2 VAL L 30 -106.133 -15.526 25.613 1.00 44.18 C
ATOM 3577 C VAL L 30 -104.447 -15.238 27.910 1.00 41.33 C
ATOM 3578 O VAL L 30 -105.094 -15.434 28.930 1.00 48.62 O
ATOM 3579 N HIS L 31 -103.974 -14.050 27.573 1.00 37.55 N
ATOM 3580 CA HIS L 31 -104.015 -12.913 28.462 1.00 41.97 C
ATOM 3581 CB HIS L 31 -102.864 -11.912 28.086 1.00 40.33 C
ATOM 3582 CG HIS L 31 -102.768 -10.732 28.982 1.00 34.85 C
ATOM 3583 ND1 HIS L 31 -103.454 -9.562 28.732 1.00 40.64 N
ATOM 3584 CE1 HIS L 31 -103.204 -8.689 29.696 1.00 36.03 C
ATOM 3585 NE2 HIS L 31 -102.365 -9.246 30.546 1.00 33.77 N
ATOM 3586 CD2 HIS L 31 -102.067 -10.523 30.120 1.00 33.29 C
ATOM 3587 C HIS L 31 -105.378 -12.285 28.300 1.00 43.94 C
ATOM 3588 O HIS L 31 -105.997 -12.408 27.239 1.00 42.92 O
ATOM 3589 N SER L 32 -105.851 -11.605 29.339 1.00 46.33 N

ATOM 3590 CA SER L 32 -107.066 -10.763 29.221 1.00 52.55 C
ATOM 3591 CB SER L 32 -107.064 -9.724 30.342 1.00 53.42 C
ATOM 3592 OG SER L 32 -106.832 -10.420 31.540 1.00 54.13 O
ATOM 3593 C SER L 32 -107.209 -10.019 27.907 1.00 46.31 C
ATOM 3594 O SER L 32 -108.280 -9.956 27.344 1.00 57.92 O
ATOM 3595 N ASN L 33 -106.122 -9.428 27.437 1.00 49.23 N
ATOM 3596 CA ASN L 33 -106.138 -8.667 26.182 1.00 48.56 C
ATOM 3597 CB ASN L 33 -105.018 -7.605 26.184 1.00 48.83 C
ATOM 3598 CG ASN L 33 -103.617 -8.191 26.071 1.00 50.19 C
ATOM 3599 OD1 ASN L 33 -102.626 -7.557 26.475 1.00 46.96 O
ATOM 3600 ND2 ASN L 33 -103.519 -9.397 25.529 1.00 44.40 N
ATOM 3601 C ASN L 33 -106.096 -9.489 24.876 1.00 45.74 C
ATOM 3602 O ASN L 33 -105.951 -8.864 23.823 1.00 42.87 O
ATOM 3603 N GLY L 34 -106.213 -10.841 24.921 1.00 40.21 N
ATOM 3604 CA GLY L 34 -106.173 -11.689 23.686 1.00 43.20 C
ATOM 3605 C GLY L 34 -104.816 -12.275 23.219 1.00 43.47 C
ATOM 3606 O GLY L 34 -104.765 -13.227 22.443 1.00 46.58 O
ATOM 3607 N ASP L 35 -103.727 -11.693 23.698 1.00 41.92 N
ATOM 3608 CA ASP L 35 -102.372 -12.094 23.379 1.00 40.71 C
ATOM 3609 CB ASP L 35 -101.356 -10.971 23.686 1.00 46.85 C
ATOM 3610 CG ASP L 35 -101.360 -9.859 22.661 1.00 48.88 C
ATOM 3611 OD1 ASP L 35 -102.145 -9.991 21.712 1.00 47.86 O
ATOM 3612 OD2 ASP L 35 -100.546 -8.886 22.794 1.00 50.03 O
ATOM 3613 C ASP L 35 -102.000 -13.266 24.228 1.00 35.73 C
ATOM 3614 O ASP L 35 -102.515 -13.414 25.339 1.00 34.92 O
ATOM 3615 N THR L 36 -101.065 -14.067 23.714 1.00 34.79 N
ATOM 3616 CA THR L 36 -100.452 -15.119 24.477 1.00 37.93 C
ATOM 3617 CB THR L 36 -100.918 -16.563 24.086 1.00 41.95 C
ATOM 3618 OG1 THR L 36 -99.820 -17.500 24.243 1.00 50.67 O
ATOM 3619 CG2 THR L 36 -101.469 -16.649 22.741 1.00 48.65 C
ATOM 3620 C THR L 36 -98.926 -14.887 24.585 1.00 35.81 C
ATOM 3621 O THR L 36 -98.137 -14.953 23.602 1.00 32.34 O
ATOM 3622 N TYR L 37 -98.510 -14.594 25.805 1.00 32.37 N
ATOM 3623 CA TYR L 37 -97.165 -14.083 26.064 1.00 30.42 C
ATOM 3624 CB TYR L 37 -97.203 -13.065 27.228 1.00 31.91 C
ATOM 3625 CG TYR L 37 -97.916 -11.805 26.793 1.00 33.44 C
ATOM 3626 CD1 TYR L 37 -97.527 -11.139 25.639 1.00 33.78 C

ATOM 3627 CE1 TYR L 37 -98.158 -9.999 25.218 1.00 36.47 C
ATOM 3628 CZ TYR L 37 -99.239 -9.519 25.893 1.00 37.58 C
ATOM 3629 OH TYR L 37 -99.885 -8.373 25.419 1.00 36.72 O
ATOM 3630 CE2 TYR L 37 -99.672 -10.179 27.024 1.00 35.20 C
ATOM 3631 CD2 TYR L 37 -99.007 -11.319 27.472 1.00 32.77 C
ATOM 3632 C TYR L 37 -96.282 -15.229 26.370 1.00 33.36 C
ATOM 3633 O TYR L 37 -95.837 -15.393 27.500 1.00 41.67 O
ATOM 3634 N LEU L 38 -96.079 -16.095 25.376 1.00 35.38 N
ATOM 3635 CA LEU L 38 -95.234 -17.252 25.558 1.00 33.85 C
ATOM 3636 CB LEU L 38 -95.805 -18.541 24.970 1.00 32.94 C
ATOM 3637 CG LEU L 38 -94.844 -19.667 25.433 1.00 37.20 C
ATOM 3638 CD1 LEU L 38 -95.499 -20.728 26.229 1.00 41.94 C
ATOM 3639 CD2 LEU L 38 -94.000 -20.258 24.323 1.00 37.60 C
ATOM 3640 C LEU L 38 -93.899 -16.915 24.937 1.00 31.29 C
ATOM 3641 O LEU L 38 -93.842 -16.446 23.820 1.00 34.09 O
ATOM 3642 N GLU L 39 -92.820 -17.163 25.657 1.00 32.16 N
ATOM 3643 CA GLU L 39 -91.514 -16.723 25.185 1.00 34.66 C
ATOM 3644 CB GLU L 39 -91.041 -15.483 25.947 1.00 34.43 C
ATOM 3645 CG GLU L 39 -91.992 -14.272 25.885 1.00 33.47 C
ATOM 3646 CD GLU L 39 -91.583 -13.080 26.781 1.00 32.80 C
ATOM 3647 OE1 GLU L 39 -90.632 -13.154 27.597 1.00 31.46 O
ATOM 3648 OE2 GLU L 39 -92.239 -12.034 26.672 1.00 35.11 O
ATOM 3649 C GLU L 39 -90.540 -17.814 25.367 1.00 34.14 C
ATOM 3650 O GLU L 39 -90.730 -18.674 26.218 1.00 31.98 O
ATOM 3651 N TRP L 40 -89.484 -17.771 24.563 1.00 33.82 N
ATOM 3652 CA TRP L 40 -88.392 -18.707 24.672 1.00 31.13 C
ATOM 3653 CB TRP L 40 -88.305 -19.541 23.407 1.00 31.75 C
ATOM 3654 CG TRP L 40 -89.382 -20.537 23.264 1.00 34.82 C
ATOM 3655 CD1 TRP L 40 -90.508 -20.424 22.508 1.00 34.75 C
ATOM 3656 NE1 TRP L 40 -91.245 -21.559 22.608 1.00 35.60 N
ATOM 3657 CE2 TRP L 40 -90.600 -22.446 23.414 1.00 33.16 C
ATOM 3658 CD2 TRP L 40 -89.427 -21.829 23.859 1.00 34.17 C
ATOM 3659 CE3 TRP L 40 -88.566 -22.533 24.696 1.00 33.96 C
ATOM 3660 CZ3 TRP L 40 -88.903 -23.788 25.069 1.00 35.95 C
ATOM 3661 CH2 TRP L 40 -90.103 -24.385 24.620 1.00 38.37 C
ATOM 3662 CZ2 TRP L 40 -90.962 -23.720 23.798 1.00 35.29 C
ATOM 3663 C TRP L 40 -87.059 -17.981 24.871 1.00 31.30 C

ATOM 3664 O TRP L 40 -86.772 -16.971 24.182 1.00 25.55 O
ATOM 3665 N TYR L 41 -86.239 -18.543 25.774 1.00 30.50 N
ATOM 3666 CA TYR L 41 -84.908 -18.028 26.092 1.00 29.32 C
ATOM 3667 CB TYR L 41 -84.841 -17.466 27.511 1.00 27.24 C
ATOM 3668 CG TYR L 41 -85.718 -16.266 27.682 1.00 28.26 C
ATOM 3669 CD1 TYR L 41 -87.076 -16.407 27.924 1.00 28.27 C
ATOM 3670 CE1 TYR L 41 -87.899 -15.295 28.070 1.00 31.79 C
ATOM 3671 CZ TYR L 41 -87.336 -13.995 27.990 1.00 32.42 C
ATOM 3672 OH TYR L 41 -88.132 -12.899 28.080 1.00 30.14 O
ATOM 3673 CE2 TYR L 41 -85.973 -13.837 27.819 1.00 30.42 C
ATOM 3674 CD2 TYR L 41 -85.170 -14.961 27.659 1.00 30.60 C
ATOM 3675 C TYR L 41 -83.852 -19.085 25.991 1.00 30.63 C
ATOM 3676 O TYR L 41 -84.104 -20.237 26.307 1.00 30.80 O
ATOM 3677 N GLN L 42 -82.656 -18.652 25.595 1.00 34.33 N
ATOM 3678 CA GLN L 42 -81.437 -19.439 25.625 1.00 34.38 C
ATOM 3679 CB GLN L 42 -80.666 -19.191 24.326 1.00 33.62 C
ATOM 3680 CG GLN L 42 -79.508 -20.130 24.065 1.00 34.56 C
ATOM 3681 CD GLN L 42 -78.677 -19.689 22.850 1.00 39.74 C
ATOM 3682 OE1 GLN L 42 -78.044 -18.650 22.898 1.00 36.31 O
ATOM 3683 NE2 GLN L 42 -78.658 -20.499 21.768 1.00 40.32 N
ATOM 3684 C GLN L 42 -80.554 -18.974 26.758 1.00 31.41 C
ATOM 3685 O GLN L 42 -80.497 -17.789 27.029 1.00 29.85 O
ATOM 3686 N GLN L 43 -79.845 -19.908 27.384 1.00 34.08 N
ATOM 3687 CA GLN L 43 -78.850 -19.603 28.419 1.00 33.70 C
ATOM 3688 CB GLN L 43 -79.417 -19.822 29.836 1.00 29.23 C
ATOM 3689 CG GLN L 43 -78.498 -19.357 30.981 1.00 32.09 C
ATOM 3690 CD GLN L 43 -79.208 -19.210 32.339 1.00 30.57 C
ATOM 3691 OE1 GLN L 43 -79.946 -20.070 32.723 1.00 33.41 O
ATOM 3692 NE2 GLN L 43 -78.951 -18.103 33.059 1.00 30.87 N
ATOM 3693 C GLN L 43 -77.584 -20.430 28.252 1.00 33.05 C
ATOM 3694 O GLN L 43 -77.644 -21.633 28.306 1.00 33.42 O
ATOM 3695 N LYS L 44 -76.438 -19.753 28.178 1.00 34.12 N
ATOM 3696 CA LYS L 44 -75.110 -20.404 28.222 1.00 38.24 C
ATOM 3697 CB LYS L 44 -74.205 -19.776 27.184 1.00 44.25 C
ATOM 3698 CG LYS L 44 -74.671 -20.239 25.806 1.00 45.69 C
ATOM 3699 CD LYS L 44 -74.324 -19.300 24.689 1.00 48.43 C
ATOM 3700 CE LYS L 44 -74.447 -20.065 23.394 1.00 48.32 C

ATOM 3701 NZ LYS L 44 -74.158 -19.190 22.243 1.00 51.79 N
ATOM 3702 C LYS L 44 -74.483 -20.394 29.583 1.00 38.37 C
ATOM 3703 O LYS L 44 -74.966 -19.709 30.483 1.00 34.77 O
ATOM 3704 N PRO L 45 -73.471 -21.251 29.794 1.00 44.62 N
ATOM 3705 CA PRO L 45 -72.948 -21.337 31.173 1.00 42.16 C
ATOM 3706 CB PRO L 45 -71.930 -22.487 31.103 1.00 46.11 C
ATOM 3707 CG PRO L 45 -72.298 -23.278 29.862 1.00 46.19 C
ATOM 3708 CD PRO L 45 -72.993 -22.353 28.923 1.00 43.51 C
ATOM 3709 C PRO L 45 -72.298 -20.029 31.658 1.00 43.70 C
ATOM 3710 O PRO L 45 -71.507 -19.443 30.938 1.00 44.50 O
ATOM 3711 N GLY L 46 -72.670 -19.574 32.865 1.00 40.15 N
ATOM 3712 CA GLY L 46 -72.107 -18.377 33.452 1.00 36.84 C
ATOM 3713 C GLY L 46 -72.741 -17.067 32.981 1.00 40.24 C
ATOM 3714 O GLY L 46 -72.366 -16.002 33.490 1.00 39.65 O
ATOM 3715 N LYS L 47 -73.707 -17.140 32.051 1.00 36.69 N
ATOM 3716 CA LYS L 47 -74.260 -15.980 31.368 1.00 38.44 C
ATOM 3717 CB LYS L 47 -74.157 -16.105 29.840 1.00 43.58 C
ATOM 3718 CG LYS L 47 -72.778 -16.469 29.277 1.00 53.31 C
ATOM 3719 CD LYS L 47 -71.763 -15.338 29.380 1.00 64.78 C
ATOM 3720 CE LYS L 47 -72.187 -14.104 28.567 1.00 77.82 C
ATOM 3721 NZ LYS L 47 -71.143 -13.027 28.539 1.00 83.55 N
ATOM 3722 C LYS L 47 -75.710 -15.878 31.728 1.00 34.89 C
ATOM 3723 O LYS L 47 -76.294 -16.824 32.244 1.00 35.32 O
ATOM 3724 N ALA L 48 -76.291 -14.724 31.424 1.00 32.38 N
ATOM 3725 CA ALA L 48 -77.708 -14.470 31.645 1.00 32.37 C
ATOM 3726 CB ALA L 48 -77.992 -12.964 31.739 1.00 31.14 C
ATOM 3727 C ALA L 48 -78.474 -15.058 30.465 1.00 30.76 C
ATOM 3728 O ALA L 48 -77.889 -15.270 29.426 1.00 34.73 O
ATOM 3729 N PRO L 49 -79.785 -15.240 30.594 1.00 29.40 N
ATOM 3730 CA PRO L 49 -80.566 -15.658 29.446 1.00 30.35 C
ATOM 3731 CB PRO L 49 -81.969 -15.877 30.035 1.00 31.53 C
ATOM 3732 CG PRO L 49 -81.697 -16.205 31.504 1.00 34.64 C
ATOM 3733 CD PRO L 49 -80.575 -15.274 31.837 1.00 33.20 C
ATOM 3734 C PRO L 49 -80.609 -14.592 28.352 1.00 29.91 C
ATOM 3735 O PRO L 49 -80.441 -13.418 28.674 1.00 34.25 O
ATOM 3736 N ASN L 50 -80.793 -15.029 27.092 1.00 28.71 N
ATOM 3737 CA ASN L 50 -80.988 -14.176 25.900 1.00 33.31 C

ATOM 3738 CB ASN L 50 -79.938 -14.447 24.823 1.00 42.93 C
ATOM 3739 CG ASN L 50 -78.620 -13.746 25.081 1.00 56.08 C
ATOM 3740 OD1 ASN L 50 -78.565 -12.524 25.196 1.00 76.68 O
ATOM 3741 ND2 ASN L 50 -77.533 -14.523 25.147 1.00 75.29 N
ATOM 3742 C ASN L 50 -82.336 -14.605 25.331 1.00 32.25 C
ATOM 3743 O ASN L 50 -82.688 -15.761 25.370 1.00 36.11 O
ATOM 3744 N LEU L 51 -83.054 -13.675 24.767 1.00 29.75 N
ATOM 3745 CA LEU L 51 -84.408 -13.861 24.327 1.00 30.54 C
ATOM 3746 CB LEU L 51 -85.121 -12.512 24.372 1.00 28.48 C
ATOM 3747 CG LEU L 51 -86.499 -12.368 23.740 1.00 28.85 C
ATOM 3748 CD1 LEU L 51 -87.559 -13.071 24.576 1.00 30.44 C
ATOM 3749 CD2 LEU L 51 -86.834 -10.899 23.607 1.00 29.70 C
ATOM 3750 C LEU L 51 -84.371 -14.325 22.896 1.00 30.93 C
ATOM 3751 O LEU L 51 -83.635 -13.781 22.111 1.00 30.71 O
ATOM 3752 N LEU L 52 -85.183 -15.317 22.547 1.00 33.31 N
ATOM 3753 CA LEU L 52 -85.198 -15.838 21.176 1.00 30.08 C
ATOM 3754 CB LEU L 52 -85.140 -17.334 21.179 1.00 29.10 C
ATOM 3755 CG LEU L 52 -83.943 -17.937 21.822 1.00 29.81 C
ATOM 3756 CD1 LEU L 52 -84.137 -19.428 21.932 1.00 31.20 C
ATOM 3757 CD2 LEU L 52 -82.656 -17.625 21.078 1.00 31.25 C
ATOM 3758 C LEU L 52 -86.462 -15.448 20.488 1.00 31.59 C
ATOM 3759 O LEU L 52 -86.428 -15.043 19.339 1.00 35.95 O
ATOM 3760 N ILE L 53 -87.570 -15.625 21.185 1.00 31.25 N
ATOM 3761 CA ILE L 53 -88.896 -15.627 20.587 1.00 34.18 C
ATOM 3762 CB ILE L 53 -89.446 -17.063 20.308 1.00 33.69 C
ATOM 3763 CG1 ILE L 53 -88.517 -17.890 19.444 1.00 34.99 C
ATOM 3764 CD1 ILE L 53 -88.367 -17.396 18.052 1.00 36.30 C
ATOM 3765 CG2 ILE L 53 -90.836 -17.006 19.643 1.00 37.35 C
ATOM 3766 C ILE L 53 -89.853 -15.059 21.627 1.00 33.76 C
ATOM 3767 O ILE L 53 -89.775 -15.425 22.792 1.00 33.31 O
ATOM 3768 N ARG L 54 -90.801 -14.251 21.166 1.00 33.04 N
ATOM 3769 CA ARG L 54 -91.847 -13.705 21.998 1.00 35.59 C
ATOM 3770 CB ARG L 54 -91.619 -12.211 22.309 1.00 36.77 C
ATOM 3771 CG ARG L 54 -91.512 -11.294 21.089 1.00 42.98 C
ATOM 3772 CD ARG L 54 -90.102 -11.209 20.553 1.00 45.68 C
ATOM 3773 NE ARG L 54 -90.060 -10.551 19.245 1.00 49.68 N
ATOM 3774 CZ ARG L 54 -90.045 -9.226 19.066 1.00 48.17 C

ATOM 3775 NH1 ARG L 54 -90.112 -8.381 20.096 1.00 43.73 N
ATOM 3776 NH2 ARG L 54 -89.990 -8.746 17.843 1.00 43.72 N
ATOM 3777 C ARG L 54 -93.185 -13.909 21.300 1.00 35.78 C
ATOM 3778 O ARG L 54 -93.236 -14.254 20.132 1.00 36.44 O
ATOM 3779 N LYS L 55 -94.257 -13.741 22.064 1.00 35.28 N
ATOM 3780 CA LYS L 55 -95.608 -13.845 21.581 1.00 35.74 C
ATOM 3781 CB LYS L 55 -95.962 -12.573 20.877 1.00 38.97 C
ATOM 3782 CG LYS L 55 -95.916 -11.375 21.829 1.00 43.29 C
ATOM 3783 CD LYS L 55 -96.244 -10.063 21.153 1.00 46.83 C
ATOM 3784 CE LYS L 55 -97.726 -9.924 20.932 1.00 53.93 C
ATOM 3785 NZ LYS L 55 -98.040 -8.584 20.380 1.00 62.58 N
ATOM 3786 C LYS L 55 -95.815 -15.105 20.732 1.00 33.74 C
ATOM 3787 O LYS L 55 -96.292 -15.030 19.665 1.00 35.98 O
ATOM 3788 N VAL L 56 -95.391 -16.248 21.259 1.00 33.13 N
ATOM 3789 CA VAL L 56 -95.463 -17.559 20.631 1.00 37.63 C
ATOM 3790 CB VAL L 56 -96.917 -17.965 20.242 1.00 39.56 C
ATOM 3791 CG1 VAL L 56 -96.938 -19.351 19.624 1.00 38.60 C
ATOM 3792 CG2 VAL L 56 -97.808 -17.959 21.484 1.00 38.02 C
ATOM 3793 C VAL L 56 -94.481 -17.775 19.469 1.00 35.61 C
ATOM 3794 O VAL L 56 -93.722 -18.732 19.499 1.00 33.98 O
ATOM 3795 N SER L 57 -94.503 -16.906 18.467 1.00 36.64 N
ATOM 3796 CA SER L 57 -93.809 -17.177 17.213 1.00 42.24 C
ATOM 3797 CB SER L 57 -94.849 -17.665 16.184 1.00 39.43 C
ATOM 3798 OG SER L 57 -95.746 -16.598 15.934 1.00 41.45 O
ATOM 3799 C SER L 57 -93.064 -15.987 16.612 1.00 38.91 C
ATOM 3800 O SER L 57 -92.474 -16.078 15.522 1.00 41.06 O
ATOM 3801 N ASN L 58 -93.093 -14.881 17.309 1.00 35.62 N
ATOM 3802 CA ASN L 58 -92.469 -13.655 16.839 1.00 35.11 C
ATOM 3803 CB ASN L 58 -93.249 -12.469 17.379 1.00 34.54 C
ATOM 3804 CG ASN L 58 -92.806 -11.181 16.769 1.00 34.91 C
ATOM 3805 OD1 ASN L 58 -91.608 -10.994 16.538 1.00 32.55 O
ATOM 3806 ND2 ASN L 58 -93.758 -10.278 16.517 1.00 31.52 N
ATOM 3807 C ASN L 58 -91.006 -13.618 17.305 1.00 35.36 C
ATOM 3808 O ASN L 58 -90.722 -13.438 18.506 1.00 32.99 O
ATOM 3809 N ARG L 59 -90.111 -13.861 16.358 1.00 33.46 N
ATOM 3810 CA ARG L 59 -88.698 -13.944 16.611 1.00 35.75 C
ATOM 3811 CB ARG L 59 -88.033 -14.574 15.379 1.00 38.60 C

ATOM 3812 CG ARG L 59 -86.599 -14.974 15.583 1.00 38.38 C
ATOM 3813 CD ARG L 59 -85.883 -15.527 14.358 1.00 40.09 C
ATOM 3814 NE ARG L 59 -86.748 -15.700 13.196 1.00 49.66 N
ATOM 3815 CZ ARG L 59 -86.588 -15.118 12.003 1.00 51.45 C
ATOM 3816 NH1 ARG L 59 -85.555 -14.318 11.747 1.00 49.94 N
ATOM 3817 NH2 ARG L 59 -87.461 -15.382 11.034 1.00 51.71 N
ATOM 3818 C ARG L 59 -88.132 -12.543 16.887 1.00 35.04 C
ATOM 3819 O ARG L 59 -88.422 -11.583 16.148 1.00 33.63 O
ATOM 3820 N PHE L 60 -87.354 -12.416 17.964 1.00 34.26 N
ATOM 3821 CA PHE L 60 -86.771 -11.102 18.345 1.00 34.38 C
ATOM 3822 CB PHE L 60 -86.336 -11.172 19.811 1.00 33.00 C
ATOM 3823 CG PHE L 60 -85.558 -9.985 20.307 1.00 32.55 C
ATOM 3824 CD1 PHE L 60 -86.156 -8.745 20.458 1.00 33.55 C
ATOM 3825 CE1 PHE L 60 -85.426 -7.666 20.917 1.00 30.43 C
ATOM 3826 CZ PHE L 60 -84.103 -7.829 21.286 1.00 31.50 C
ATOM 3827 CE2 PHE L 60 -83.520 -9.056 21.208 1.00 32.01 C
ATOM 3828 CD2 PHE L 60 -84.251 -10.134 20.743 1.00 34.61 C
ATOM 3829 C PHE L 60 -85.631 -10.704 17.369 1.00 37.91 C
ATOM 3830 O PHE L 60 -84.951 -11.577 16.779 1.00 38.71 O
ATOM 3831 N SER L 61 -85.429 -9.398 17.184 1.00 43.29 N
ATOM 3832 CA SER L 61 -84.447 -8.840 16.210 1.00 41.93 C
ATOM 3833 CB SER L 61 -84.374 -7.299 16.320 1.00 49.05 C
ATOM 3834 OG SER L 61 -85.680 -6.688 16.376 1.00 61.47 O
ATOM 3835 C SER L 61 -83.064 -9.367 16.469 1.00 37.77 C
ATOM 3836 O SER L 61 -82.600 -9.307 17.597 1.00 36.49 O
ATOM 3837 N GLY L 62 -82.403 -9.871 15.430 1.00 34.41 N
ATOM 3838 CA GLY L 62 -81.053 -10.393 15.556 1.00 34.62 C
ATOM 3839 C GLY L 62 -80.982 -11.884 15.849 1.00 36.94 C
ATOM 3840 O GLY L 62 -79.892 -12.454 15.832 1.00 43.22 O
ATOM 3841 N VAL L 63 -82.118 -12.527 16.124 1.00 33.18 N
ATOM 3842 CA VAL L 63 -82.130 -13.956 16.306 1.00 35.48 C
ATOM 3843 CB VAL L 63 -83.290 -14.328 17.227 1.00 35.57 C
ATOM 3844 CG1 VAL L 63 -83.484 -15.812 17.333 1.00 29.70 C
ATOM 3845 CG2 VAL L 63 -83.038 -13.703 18.629 1.00 36.06 C
ATOM 3846 C VAL L 63 -82.127 -14.693 14.922 1.00 32.25 C
ATOM 3847 O VAL L 63 -82.777 -14.281 14.005 1.00 35.71 O
ATOM 3848 N PRO L 64 -81.315 -15.726 14.770 1.00 32.34 N

ATOM 3849 CA PRO L 64 -81.279 -16.451 13.477 1.00 34.11 C
ATOM 3850 CB PRO L 64 -80.202 -17.520 13.695 1.00 33.79 C
ATOM 3851 CG PRO L 64 -79.279 -16.927 14.726 1.00 34.63 C
ATOM 3852 CD PRO L 64 -80.173 -16.102 15.642 1.00 35.80 C
ATOM 3853 C PRO L 64 -82.586 -17.112 13.120 1.00 33.13 C
ATOM 3854 O PRO L 64 -83.300 -17.600 13.998 1.00 41.94 O
ATOM 3855 N SER L 65 -82.874 -17.150 11.831 1.00 35.02 N
ATOM 3856 CA SER L 65 -84.127 -17.666 11.307 1.00 37.43 C
ATOM 3857 CB SER L 65 -84.269 -17.354 9.814 1.00 40.29 C
ATOM 3858 OG SER L 65 -83.269 -18.010 9.075 1.00 39.12 O
ATOM 3859 C SER L 65 -84.292 -19.140 11.578 1.00 35.94 C
ATOM 3860 O SER L 65 -85.400 -19.633 11.572 1.00 35.22 O
ATOM 3861 N ARG L 66 -83.211 -19.841 11.908 1.00 33.88 N
ATOM 3862 CA ARG L 66 -83.354 -21.232 12.291 1.00 34.88 C
ATOM 3863 CB ARG L 66 -81.981 -21.931 12.354 1.00 37.73 C
ATOM 3864 CG ARG L 66 -81.006 -21.406 13.408 1.00 38.53 C
ATOM 3865 CD ARG L 66 -79.730 -22.244 13.442 1.00 38.23 C
ATOM 3866 NE ARG L 66 -78.832 -21.760 14.478 1.00 38.21 N
ATOM 3867 CZ ARG L 66 -78.045 -20.665 14.370 1.00 40.04 C
ATOM 3868 NH1 ARG L 66 -78.009 -19.923 13.244 1.00 33.21 N
ATOM 3869 NH2 ARG L 66 -77.290 -20.291 15.421 1.00 35.19 N
ATOM 3870 C ARG L 66 -84.158 -21.494 13.582 1.00 37.56 C
ATOM 3871 O ARG L 66 -84.580 -22.638 13.802 1.00 34.31 O
ATOM 3872 N PHE L 67 -84.327 -20.485 14.442 1.00 34.73 N
ATOM 3873 CA PHE L 67 -85.207 -20.602 15.624 1.00 33.53 C
ATOM 3874 CB PHE L 67 -84.726 -19.678 16.767 1.00 32.03 C
ATOM 3875 CG PHE L 67 -83.382 -20.054 17.314 1.00 30.13 C
ATOM 3876 CD1 PHE L 67 -83.266 -21.033 18.261 1.00 29.45 C
ATOM 3877 CE1 PHE L 67 -82.016 -21.410 18.716 1.00 30.31 C
ATOM 3878 CZ PHE L 67 -80.885 -20.752 18.267 1.00 27.44 C
ATOM 3879 CE2 PHE L 67 -80.989 -19.799 17.317 1.00 25.46 C
ATOM 3880 CD2 PHE L 67 -82.222 -19.423 16.862 1.00 29.99 C
ATOM 3881 C PHE L 67 -86.660 -20.232 15.261 1.00 32.61 C
ATOM 3882 O PHE L 67 -86.908 -19.221 14.651 1.00 33.31 O
ATOM 3883 N SER L 68 -87.622 -21.056 15.645 1.00 32.22 N
ATOM 3884 CA SER L 68 -89.010 -20.705 15.439 1.00 32.82 C
ATOM 3885 CB SER L 68 -89.529 -21.137 14.042 1.00 32.56 C

ATOM 3886 OG SER L 68 -89.494 -22.562 13.903 1.00 40.86 O
ATOM 3887 C SER L 68 -89.852 -21.265 16.561 1.00 31.77 C
ATOM 3888 O SER L 68 -89.482 -22.226 17.220 1.00 31.13 O
ATOM 3889 N GLY L 69 -90.963 -20.601 16.792 1.00 32.94 N
ATOM 3890 CA GLY L 69 -91.866 -20.935 17.852 1.00 35.22 C
ATOM 3891 C GLY L 69 -93.230 -21.284 17.276 1.00 34.87 C
ATOM 3892 O GLY L 69 -93.670 -20.664 16.329 1.00 35.46 O
ATOM 3893 N SER L 70 -93.920 -22.234 17.873 1.00 32.67 N
ATOM 3894 CA SER L 70 -95.346 -22.374 17.558 1.00 36.10 C
ATOM 3895 CB SER L 70 -95.574 -23.324 16.377 1.00 32.87 C
ATOM 3896 OG SER L 70 -95.223 -24.646 16.763 1.00 36.54 O
ATOM 3897 C SER L 70 -96.073 -22.901 18.762 1.00 32.62 C
ATOM 3898 O SER L 70 -95.455 -23.234 19.788 1.00 31.10 O
ATOM 3899 N GLY L 71 -97.396 -22.894 18.621 1.00 32.96 N
ATOM 3900 CA GLY L 71 -98.331 -23.654 19.480 1.00 34.93 C
ATOM 3901 C GLY L 71 -99.550 -22.862 19.909 1.00 35.13 C
ATOM 3902 O GLY L 71 -99.796 -21.745 19.427 1.00 29.94 O
ATOM 3903 N SER L 72 -100.270 -23.460 20.862 1.00 37.12 N
ATOM 3904 CA SER L 72 -101.562 -22.954 21.398 1.00 39.60 C
ATOM 3905 CB SER L 72 -102.675 -22.878 20.299 1.00 41.14 C
ATOM 3906 OG SER L 72 -102.913 -24.163 19.708 1.00 45.23 O
ATOM 3907 C SER L 72 -102.006 -23.856 22.580 1.00 39.49 C
ATOM 3908 O SER L 72 -101.376 -24.906 22.905 1.00 43.04 O
ATOM 3909 N GLY L 73 -103.054 -23.414 23.258 1.00 42.20 N
ATOM 3910 CA GLY L 73 -103.614 -24.130 24.412 1.00 38.78 C
ATOM 3911 C GLY L 73 -102.612 -24.320 25.525 1.00 37.44 C
ATOM 3912 O GLY L 73 -102.183 -23.385 26.131 1.00 39.54 O
ATOM 3913 N THR L 74 -102.234 -25.564 25.755 1.00 40.09 N
ATOM 3914 CA THR L 74 -101.256 -25.910 26.739 1.00 41.20 C
ATOM 3915 CB THR L 74 -101.828 -26.928 27.806 1.00 43.28 C
ATOM 3916 OG1 THR L 74 -102.357 -28.129 27.196 1.00 40.00 O
ATOM 3917 CG2 THR L 74 -102.884 -26.253 28.668 1.00 45.74 C
ATOM 3918 C THR L 74 -100.011 -26.491 26.137 1.00 38.43 C
ATOM 3919 O THR L 74 -99.243 -27.134 26.873 1.00 43.97 O
ATOM 3920 N ASP L 75 -99.791 -26.332 24.834 1.00 39.65 N
ATOM 3921 CA ASP L 75 -98.546 -26.870 24.221 1.00 42.74 C
ATOM 3922 CB ASP L 75 -98.778 -28.174 23.497 1.00 47.08 C

ATOM 3923 CG ASP L 75 -98.991 -29.304 24.473 1.00 57.43 C
ATOM 3924 OD1 ASP L 75 -97.956 -29.784 25.016 1.00 54.03 O
ATOM 3925 OD2 ASP L 75 -100.198 -29.634 24.733 1.00 51.67 O
ATOM 3926 C ASP L 75 -97.917 -25.924 23.276 1.00 37.38 C
ATOM 3927 O ASP L 75 -98.584 -25.360 22.417 1.00 35.52 O
ATOM 3928 N PHE L 76 -96.622 -25.714 23.488 1.00 35.24 N
ATOM 3929 CA PHE L 76 -95.851 -24.746 22.696 1.00 34.83 C
ATOM 3930 CB PHE L 76 -95.711 -23.431 23.445 1.00 33.62 C
ATOM 3931 CG PHE L 76 -97.016 -22.820 23.794 1.00 33.54 C
ATOM 3932 CD1 PHE L 76 -97.645 -23.162 24.970 1.00 34.48 C
ATOM 3933 CE1 PHE L 76 -98.877 -22.629 25.292 1.00 36.93 C
ATOM 3934 CZ PHE L 76 -99.511 -21.789 24.407 1.00 35.39 C
ATOM 3935 CE2 PHE L 76 -98.887 -21.456 23.203 1.00 37.26 C
ATOM 3936 CD2 PHE L 76 -97.668 -22.007 22.890 1.00 33.59 C
ATOM 3937 C PHE L 76 -94.524 -25.376 22.394 1.00 31.77 C
ATOM 3938 O PHE L 76 -94.009 -26.152 23.204 1.00 30.97 O
ATOM 3939 N THR L 77 -93.998 -25.071 21.220 1.00 28.37 N
ATOM 3940 CA THR L 77 -92.828 -25.798 20.725 1.00 31.30 C
ATOM 3941 CB THR L 77 -93.176 -26.830 19.626 1.00 32.41 C
ATOM 3942 OG1 THR L 77 -94.184 -27.704 20.109 1.00 36.47 O
ATOM 3943 CG2 THR L 77 -91.940 -27.637 19.212 1.00 33.27 C
ATOM 3944 C THR L 77 -91.871 -24.824 20.106 1.00 30.95 C
ATOM 3945 O THR L 77 -92.266 -24.027 19.225 1.00 28.86 O
ATOM 3946 N LEU L 78 -90.625 -24.951 20.567 1.00 30.18 N
ATOM 3947 CA LEU L 78 -89.481 -24.327 19.937 1.00 32.30 C
ATOM 3948 CB LEU L 78 -88.413 -23.986 20.992 1.00 31.42 C
ATOM 3949 CG LEU L 78 -87.151 -23.347 20.449 1.00 30.95 C
ATOM 3950 CD1 LEU L 78 -87.453 -21.967 19.917 1.00 33.82 C
ATOM 3951 CD2 LEU L 78 -86.072 -23.294 21.525 1.00 32.92 C
ATOM 3952 C LEU L 78 -88.895 -25.302 18.944 1.00 29.71 C
ATOM 3953 O LEU L 78 -88.610 -26.430 19.299 1.00 33.47 O
ATOM 3954 N THR L 79 -88.680 -24.854 17.719 1.00 30.47 N
ATOM 3955 CA THR L 79 -87.976 -25.636 16.700 1.00 29.63 C
ATOM 3956 CB THR L 79 -88.883 -25.804 15.467 1.00 31.08 C
ATOM 3957 OG1 THR L 79 -90.074 -26.483 15.885 1.00 36.44 O
ATOM 3958 CG2 THR L 79 -88.197 -26.594 14.320 1.00 28.51 C
ATOM 3959 C THR L 79 -86.683 -24.950 16.293 1.00 29.30 C

ATOM 3960 O THR L 79 -86.632 -23.752 16.000 1.00 28.87 O
ATOM 3961 N ILE L 80 -85.618 -25.723 16.267 1.00 31.58 N
ATOM 3962 CA ILE L 80 -84.363 -25.246 15.759 1.00 31.62 C
ATOM 3963 CB ILE L 80 -83.201 -25.454 16.769 1.00 31.41 C
ATOM 3964 CG1 ILE L 80 -83.489 -24.756 18.107 1.00 33.12 C
ATOM 3965 CD1 ILE L 80 -82.468 -25.108 19.212 1.00 31.95 C
ATOM 3966 CG2 ILE L 80 -81.882 -24.988 16.148 1.00 31.80 C
ATOM 3967 C ILE L 80 -84.103 -26.089 14.531 1.00 29.57 C
ATOM 3968 O ILE L 80 -83.800 -27.269 14.642 1.00 33.78 O
ATOM 3969 N SER L 81 -84.116 -25.466 13.373 1.00 35.06 N
ATOM 3970 CA SER L 81 -84.143 -26.208 12.101 1.00 36.11 C
ATOM 3971 CB SER L 81 -84.731 -25.327 11.012 1.00 33.07 C
ATOM 3972 OG SER L 81 -83.881 -24.230 10.783 1.00 35.38 O
ATOM 3973 C SER L 81 -82.770 -26.743 11.673 1.00 35.16 C
ATOM 3974 O SER L 81 -82.680 -27.775 11.014 1.00 41.30 O
ATOM 3975 N SER L 82 -81.694 -26.061 12.021 1.00 36.23 N
ATOM 3976 CA SER L 82 -80.352 -26.584 11.713 1.00 35.16 C
ATOM 3977 CB SER L 82 -79.869 -26.066 10.384 1.00 34.95 C
ATOM 3978 OG SER L 82 -78.587 -26.558 10.089 1.00 36.59 O
ATOM 3979 C SER L 82 -79.408 -26.161 12.795 1.00 35.77 C
ATOM 3980 O SER L 82 -79.000 -25.022 12.831 1.00 36.07 O
ATOM 3981 N LEU L 83 -79.054 -27.097 13.660 1.00 36.77 N
ATOM 3982 CA LEU L 83 -78.335 -26.772 14.891 1.00 38.51 C
ATOM 3983 CB LEU L 83 -78.273 -28.013 15.779 1.00 40.31 C
ATOM 3984 CG LEU L 83 -78.667 -28.102 17.229 1.00 41.78 C
ATOM 3985 CD1 LEU L 83 -79.575 -26.984 17.686 1.00 43.17 C
ATOM 3986 CD2 LEU L 83 -79.314 -29.474 17.478 1.00 45.63 C
ATOM 3987 C LEU L 83 -76.928 -26.332 14.521 1.00 38.38 C
ATOM 3988 O LEU L 83 -76.275 -26.973 13.697 1.00 37.81 O
ATOM 3989 N GLN L 84 -76.492 -25.211 15.081 1.00 39.33 N
ATOM 3990 CA GLN L 84 -75.128 -24.723 14.890 1.00 40.55 C
ATOM 3991 CB GLN L 84 -75.168 -23.257 14.512 1.00 40.68 C
ATOM 3992 CG GLN L 84 -75.866 -22.972 13.194 1.00 44.13 C
ATOM 3993 CD GLN L 84 -75.203 -23.616 11.995 1.00 50.78 C
ATOM 3994 OE1 GLN L 84 -75.729 -24.583 11.414 1.00 71.31 O
ATOM 3995 NE2 GLN L 84 -74.047 -23.119 11.630 1.00 46.80 N
ATOM 3996 C GLN L 84 -74.281 -24.980 16.155 1.00 38.01 C

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ATOM  3997  O   GLN L  84    -74.810 -25.271  17.204  1.00 36.78           O
ATOM  3998  N   PRO L  85    -72.957 -24.898  16.058  1.00 38.71           N
ATOM  3999  CA  PRO L  85    -72.201 -25.241  17.300  1.00 37.52           C
ATOM  4000  CB  PRO L  85    -70.730 -25.208  16.870  1.00 40.76           C
ATOM  4001  CG  PRO L  85    -70.732 -25.152  15.341  1.00 40.82           C
ATOM  4002  CD  PRO L  85    -72.084 -24.598  14.899  1.00 38.49           C
ATOM  4003  C   PRO L  85    -72.473 -24.291  18.473  1.00 38.91           C
ATOM  4004  O   PRO L  85    -72.510 -24.723  19.617  1.00 39.85           O
ATOM  4005  N   GLU L  86    -72.778 -23.031  18.178  1.00 41.30           N
ATOM  4006  CA  GLU L  86    -73.197 -22.082  19.210  1.00 37.04           C
ATOM  4007  CB  GLU L  86    -73.096 -20.631  18.704  1.00 37.67           C
ATOM  4008  CG  GLU L  86    -73.992 -20.190  17.537  1.00 43.49           C
ATOM  4009  CD  GLU L  86    -73.392 -20.416  16.118  1.00 51.10           C
ATOM  4010  OE1 GLU L  86    -72.568 -21.365  15.937  1.00 47.37           O
ATOM  4011  OE2 GLU L  86    -73.773 -19.645  15.173  1.00 51.19           O
ATOM  4012  C   GLU L  86    -74.546 -22.391  19.859  1.00 38.57           C
ATOM  4013  O   GLU L  86    -74.827 -21.875  20.899  1.00 33.26           O
ATOM  4014  N   ASP L  87    -75.381 -23.256  19.282  1.00 40.68           N
ATOM  4015  CA  ASP L  87    -76.739 -23.503  19.850  1.00 36.19           C
ATOM  4016  CB  ASP L  87    -77.669 -23.999  18.776  1.00 37.71           C
ATOM  4017  CG  ASP L  87    -77.781 -23.045  17.625  1.00 41.53           C
ATOM  4018  OD1 ASP L  87    -77.442 -21.851  17.793  1.00 39.29           O
ATOM  4019  OD2 ASP L  87    -78.204 -23.506  16.533  1.00 39.93           O
ATOM  4020  C   ASP L  87    -76.844 -24.486  20.990  1.00 32.58           C
ATOM  4021  O   ASP L  87    -77.897 -24.561  21.649  1.00 33.08           O
ATOM  4022  N   PHE L  88    -75.797 -25.251  21.208  1.00 29.14           N
ATOM  4023  CA  PHE L  88    -75.777 -26.214  22.301  1.00 37.36           C
ATOM  4024  CB  PHE L  88    -74.638 -27.236  22.069  1.00 34.65           C
ATOM  4025  CG  PHE L  88    -74.881 -28.060  20.839  1.00 41.61           C
ATOM  4026  CD1 PHE L  88    -75.732 -29.146  20.882  1.00 40.19           C
ATOM  4027  CE1 PHE L  88    -76.000 -29.891  19.754  1.00 45.29           C
ATOM  4028  CZ  PHE L  88    -75.471 -29.511  18.541  1.00 47.23           C
ATOM  4029  CE2 PHE L  88    -74.638 -28.405  18.471  1.00 50.89           C
ATOM  4030  CD2 PHE L  88    -74.366 -27.670  19.611  1.00 46.03           C
ATOM  4031  C   PHE L  88    -75.693 -25.456  23.656  1.00 41.09           C
ATOM  4032  O   PHE L  88    -74.702 -24.799  23.937  1.00 48.81           O
ATOM  4033  N   ALA L  89    -76.778 -25.509  24.427  1.00 39.92           N
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ATOM 4034 CA ALA L 89 -77.021 -24.600 25.572 1.00 41.99 C
ATOM 4035 CB ALA L 89 -77.256 -23.166 25.073 1.00 45.79 C
ATOM 4036 C ALA L 89 -78.267 -25.095 26.277 1.00 38.92 C
ATOM 4037 O ALA L 89 -78.793 -26.154 25.906 1.00 40.21 O
ATOM 4038 N THR L 90 -78.759 -24.338 27.259 1.00 32.39 N
ATOM 4039 CA THR L 90 -80.032 -24.663 27.906 1.00 30.71 C
ATOM 4040 CB THR L 90 -79.844 -24.651 29.411 1.00 32.01 C
ATOM 4041 OG1 THR L 90 -78.863 -25.647 29.734 1.00 38.79 O
ATOM 4042 CG2 THR L 90 -81.170 -24.970 30.205 1.00 32.60 C
ATOM 4043 C THR L 90 -81.096 -23.702 27.341 1.00 29.29 C
ATOM 4044 O THR L 90 -80.748 -22.626 26.859 1.00 30.76 O
ATOM 4045 N TYR L 91 -82.346 -24.162 27.253 1.00 28.75 N
ATOM 4046 CA TYR L 91 -83.482 -23.404 26.663 1.00 29.13 C
ATOM 4047 CB TYR L 91 -83.958 -24.009 25.321 1.00 28.74 C
ATOM 4048 CG TYR L 91 -82.958 -23.772 24.247 1.00 27.90 C
ATOM 4049 CD1 TYR L 91 -82.956 -22.591 23.525 1.00 26.10 C
ATOM 4050 CE1 TYR L 91 -81.968 -22.336 22.576 1.00 26.41 C
ATOM 4051 CZ TYR L 91 -80.980 -23.279 22.347 1.00 28.02 C
ATOM 4052 OH TYR L 91 -79.968 -23.047 21.404 1.00 29.30 O
ATOM 4053 CE2 TYR L 91 -80.979 -24.467 23.051 1.00 28.38 C
ATOM 4054 CD2 TYR L 91 -81.959 -24.701 24.000 1.00 29.00 C
ATOM 4055 C TYR L 91 -84.608 -23.355 27.692 1.00 29.03 C
ATOM 4056 O TYR L 91 -84.866 -24.353 28.321 1.00 28.32 O
ATOM 4057 N TYR L 92 -85.211 -22.188 27.911 1.00 28.00 N
ATOM 4058 CA TYR L 92 -86.362 -22.081 28.780 1.00 28.86 C
ATOM 4059 CB TYR L 92 -86.093 -21.145 30.026 1.00 31.59 C
ATOM 4060 CG TYR L 92 -84.984 -21.604 30.914 1.00 26.50 C
ATOM 4061 CD1 TYR L 92 -83.680 -21.277 30.672 1.00 27.63 C
ATOM 4062 CE1 TYR L 92 -82.654 -21.733 31.498 1.00 27.92 C
ATOM 4063 CZ TYR L 92 -82.947 -22.533 32.569 1.00 26.19 C
ATOM 4064 OH TYR L 92 -81.992 -23.011 33.424 1.00 30.42 O
ATOM 4065 CE2 TYR L 92 -84.219 -22.883 32.815 1.00 27.59 C
ATOM 4066 CD2 TYR L 92 -85.242 -22.408 31.986 1.00 31.91 C
ATOM 4067 C TYR L 92 -87.513 -21.497 28.038 1.00 28.03 C
ATOM 4068 O TYR L 92 -87.350 -20.556 27.255 1.00 35.06 O
ATOM 4069 N CYS L 93 -88.696 -21.971 28.360 1.00 28.24 N
ATOM 4070 CA CYS L 93 -89.921 -21.256 28.034 1.00 28.91 C

ATOM 4071 CB CYS L 93 -91.047 -22.202 27.607 1.00 32.89 C
ATOM 4072 SG CYS L 93 -91.540 -23.523 28.737 1.00 40.09 S
ATOM 4073 C CYS L 93 -90.343 -20.368 29.184 1.00 26.67 C
ATOM 4074 O CYS L 93 -89.878 -20.514 30.312 1.00 28.21 O
ATOM 4075 N PHE L 94 -91.233 -19.442 28.887 1.00 27.00 N
ATOM 4076 CA PHE L 94 -91.696 -18.442 29.820 1.00 27.96 C
ATOM 4077 CB PHE L 94 -90.731 -17.237 29.790 1.00 30.27 C
ATOM 4078 CG PHE L 94 -91.243 -16.009 30.507 1.00 30.51 C
ATOM 4079 CD1 PHE L 94 -92.030 -15.086 29.833 1.00 30.89 C
ATOM 4080 CE1 PHE L 94 -92.507 -13.958 30.471 1.00 28.71 C
ATOM 4081 CZ PHE L 94 -92.168 -13.718 31.792 1.00 32.14 C
ATOM 4082 CE2 PHE L 94 -91.363 -14.624 32.477 1.00 30.39 C
ATOM 4083 CD2 PHE L 94 -90.894 -15.753 31.827 1.00 29.23 C
ATOM 4084 C PHE L 94 -93.070 -18.029 29.396 1.00 29.68 C
ATOM 4085 O PHE L 94 -93.347 -17.923 28.195 1.00 35.56 O
ATOM 4086 N GLN L 95 -93.924 -17.760 30.378 1.00 32.04 N
ATOM 4087 CA GLN L 95 -95.230 -17.185 30.152 1.00 32.49 C
ATOM 4088 CB GLN L 95 -96.352 -18.231 30.423 1.00 31.73 C
ATOM 4089 CG GLN L 95 -96.646 -18.562 31.894 1.00 33.56 C
ATOM 4090 CD GLN L 95 -97.457 -17.494 32.588 1.00 32.95 C
ATOM 4091 OE1 GLN L 95 -98.192 -16.744 31.918 1.00 32.92 O
ATOM 4092 NE2 GLN L 95 -97.302 -17.377 33.945 1.00 28.22 N
ATOM 4093 C GLN L 95 -95.400 -15.911 31.000 1.00 34.63 C
ATOM 4094 O GLN L 95 -95.144 -15.895 32.241 1.00 32.79 O
ATOM 4095 N GLY L 96 -95.876 -14.870 30.329 1.00 32.67 N
ATOM 4096 CA GLY L 96 -96.133 -13.585 30.926 1.00 35.64 C
ATOM 4097 C GLY L 96 -97.590 -13.211 30.814 1.00 37.64 C
ATOM 4098 O GLY L 96 -97.919 -12.042 30.854 1.00 38.74 O
ATOM 4099 N SER L 97 -98.468 -14.199 30.710 1.00 38.80 N
ATOM 4100 CA SER L 97 -99.877 -13.951 30.513 1.00 40.40 C
ATOM 4101 CB SER L 97 -100.460 -15.054 29.640 1.00 40.62 C
ATOM 4102 OG SER L 97 -99.846 -15.068 28.387 1.00 41.25 O
ATOM 4103 C SER L 97 -100.701 -13.875 31.815 1.00 42.49 C
ATOM 4104 O SER L 97 -101.720 -13.204 31.836 1.00 43.87 O
ATOM 4105 N HIS L 98 -100.308 -14.620 32.848 1.00 39.84 N
ATOM 4106 CA HIS L 98 -101.016 -14.627 34.135 1.00 41.68 C
ATOM 4107 CB HIS L 98 -101.813 -15.940 34.373 1.00 39.02 C

ATOM 4108 CG HIS L 98 -102.833 -16.246 33.329 1.00 44.51 C
ATOM 4109 ND1 HIS L 98 -103.889 -15.408 33.052 1.00 49.28 N
ATOM 4110 CE1 HIS L 98 -104.644 -15.956 32.112 1.00 49.64 C
ATOM 4111 NE2 HIS L 98 -104.127 -17.131 31.784 1.00 43.21 N
ATOM 4112 CD2 HIS L 98 -102.999 -17.340 32.539 1.00 43.64 C
ATOM 4113 C HIS L 98 -100.020 -14.510 35.290 1.00 36.76 C
ATOM 4114 O HIS L 98 -99.213 -15.386 35.517 1.00 43.87 O
ATOM 4115 N VAL L 99 -100.128 -13.445 36.039 1.00 39.92 N
ATOM 4116 CA VAL L 99 -99.274 -13.158 37.201 1.00 36.57 C
ATOM 4117 CB VAL L 99 -99.722 -11.771 37.725 1.00 39.05 C
ATOM 4118 CG1 VAL L 99 -99.270 -11.486 39.138 1.00 47.95 C
ATOM 4119 CG2 VAL L 99 -99.224 -10.670 36.753 1.00 39.25 C
ATOM 4120 C VAL L 99 -99.409 -14.334 38.227 1.00 38.77 C
ATOM 4121 O VAL L 99 -100.539 -14.812 38.485 1.00 34.72 O
ATOM 4122 N PRO L 100 -98.307 -14.835 38.798 1.00 36.11 N
ATOM 4123 CA PRO L 100 -96.949 -14.363 38.543 1.00 35.53 C
ATOM 4124 CB PRO L 100 -96.134 -14.923 39.728 1.00 35.56 C
ATOM 4125 CG PRO L 100 -96.963 -16.016 40.307 1.00 35.71 C
ATOM 4126 CD PRO L 100 -98.391 -15.533 40.095 1.00 35.13 C
ATOM 4127 C PRO L 100 -96.411 -14.966 37.292 1.00 32.34 C
ATOM 4128 O PRO L 100 -96.701 -16.102 37.048 1.00 37.38 O
ATOM 4129 N VAL L 101 -95.604 -14.210 36.551 1.00 30.39 N
ATOM 4130 CA VAL L 101 -94.897 -14.703 35.401 1.00 32.11 C
ATOM 4131 CB VAL L 101 -94.117 -13.550 34.666 1.00 39.21 C
ATOM 4132 CG1 VAL L 101 -95.071 -12.413 34.200 1.00 34.03 C
ATOM 4133 CG2 VAL L 101 -92.976 -12.977 35.534 1.00 41.03 C
ATOM 4134 C VAL L 101 -93.978 -15.841 35.818 1.00 31.82 C
ATOM 4135 O VAL L 101 -93.347 -15.789 36.913 1.00 34.45 O
ATOM 4136 N THR L 102 -93.919 -16.874 34.987 1.00 28.07 N
ATOM 4137 CA THR L 102 -93.168 -18.076 35.302 1.00 27.92 C
ATOM 4138 CB THR L 102 -94.094 -19.228 35.822 1.00 32.15 C
ATOM 4139 OG1 THR L 102 -95.311 -19.342 35.042 1.00 30.03 O
ATOM 4140 CG2 THR L 102 -94.452 -18.986 37.323 1.00 32.44 C
ATOM 4141 C THR L 102 -92.380 -18.593 34.127 1.00 29.23 C
ATOM 4142 O THR L 102 -92.712 -18.312 32.961 1.00 26.14 O
ATOM 4143 N PHE L 103 -91.366 -19.401 34.473 1.00 29.40 N
ATOM 4144 CA PHE L 103 -90.432 -20.029 33.547 1.00 32.86 C

ATOM 4145 CB PHE L 103 -88.944 -19.680 33.853 1.00 31.79 C
ATOM 4146 CG PHE L 103 -88.567 -18.226 33.650 1.00 33.72 C
ATOM 4147 CD1 PHE L 103 -88.829 -17.283 34.608 1.00 34.33 C
ATOM 4148 CE1 PHE L 103 -88.428 -15.959 34.426 1.00 36.49 C
ATOM 4149 CZ PHE L 103 -87.762 -15.568 33.276 1.00 34.18 C
ATOM 4150 CE2 PHE L 103 -87.482 -16.493 32.328 1.00 35.28 C
ATOM 4151 CD2 PHE L 103 -87.870 -17.823 32.516 1.00 35.45 C
ATOM 4152 C PHE L 103 -90.548 -21.537 33.695 1.00 34.76 C
ATOM 4153 O PHE L 103 -90.814 -22.058 34.805 1.00 30.98 O
ATOM 4154 N GLY L 104 -90.289 -22.237 32.595 1.00 33.40 N
ATOM 4155 CA GLY L 104 -90.114 -23.679 32.675 1.00 37.41 C
ATOM 4156 C GLY L 104 -88.798 -24.081 33.330 1.00 38.93 C
ATOM 4157 O GLY L 104 -87.899 -23.302 33.421 1.00 44.41 O
ATOM 4158 N GLN L 105 -88.673 -25.339 33.699 1.00 40.78 N
ATOM 4159 CA GLN L 105 -87.492 -25.868 34.354 1.00 39.64 C
ATOM 4160 CB GLN L 105 -87.856 -27.175 35.071 1.00 41.01 C
ATOM 4161 CG GLN L 105 -87.639 -28.538 34.360 1.00 45.29 C
ATOM 4162 CD GLN L 105 -88.561 -28.856 33.142 1.00 49.88 C
ATOM 4163 OE1 GLN L 105 -89.453 -28.069 32.773 1.00 41.46 O
ATOM 4164 NE2 GLN L 105 -88.315 -30.037 32.501 1.00 45.21 N
ATOM 4165 C GLN L 105 -86.243 -26.006 33.436 1.00 41.09 C
ATOM 4166 O GLN L 105 -85.129 -26.239 33.913 1.00 38.13 O
ATOM 4167 N GLY L 106 -86.417 -25.845 32.131 1.00 38.66 N
ATOM 4168 CA GLY L 106 -85.292 -25.846 31.211 1.00 36.16 C
ATOM 4169 C GLY L 106 -84.966 -27.179 30.532 1.00 35.02 C
ATOM 4170 O GLY L 106 -85.264 -28.252 31.077 1.00 30.73 O
ATOM 4171 N THR L 107 -84.340 -27.068 29.344 1.00 34.32 N
ATOM 4172 CA THR L 107 -83.972 -28.198 28.480 1.00 35.10 C
ATOM 4173 CB THR L 107 -84.900 -28.330 27.235 1.00 34.53 C
ATOM 4174 OG1 THR L 107 -86.238 -28.673 27.628 1.00 33.68 O
ATOM 4175 CG2 THR L 107 -84.415 -29.469 26.322 1.00 33.81 C
ATOM 4176 C THR L 107 -82.553 -28.028 27.950 1.00 34.08 C
ATOM 4177 O THR L 107 -82.289 -27.122 27.235 1.00 29.89 O
ATOM 4178 N LYS L 108 -81.674 -28.979 28.217 1.00 36.03 N
ATOM 4179 CA LYS L 108 -80.274 -28.863 27.867 1.00 36.43 C
ATOM 4180 CB LYS L 108 -79.527 -29.587 28.962 1.00 39.28 C
ATOM 4181 CG LYS L 108 -78.034 -29.337 29.046 1.00 47.42 C

ATOM 4182 CD LYS L 108 -77.666 -29.508 30.528 1.00 51.32 C
ATOM 4183 CE LYS L 108 -76.214 -29.834 30.717 1.00 54.01 C
ATOM 4184 NZ LYS L 108 -75.878 -29.946 32.173 1.00 51.40 N
ATOM 4185 C LYS L 108 -80.065 -29.568 26.545 1.00 35.62 C
ATOM 4186 O LYS L 108 -80.472 -30.695 26.439 1.00 38.98 O
ATOM 4187 N VAL L 109 -79.463 -28.922 25.551 1.00 34.28 N
ATOM 4188 CA VAL L 109 -79.186 -29.517 24.257 1.00 33.52 C
ATOM 4189 CB VAL L 109 -79.630 -28.608 23.086 1.00 34.67 C
ATOM 4190 CG1 VAL L 109 -79.313 -29.245 21.762 1.00 36.78 C
ATOM 4191 CG2 VAL L 109 -81.111 -28.334 23.116 1.00 33.18 C
ATOM 4192 C VAL L 109 -77.692 -29.823 24.141 1.00 35.02 C
ATOM 4193 O VAL L 109 -76.873 -28.923 24.212 1.00 36.91 O
ATOM 4194 N GLU L 110 -77.335 -31.099 23.961 1.00 36.80 N
ATOM 4195 CA GLU L 110 -75.914 -31.533 23.920 1.00 37.37 C
ATOM 4196 CB GLU L 110 -75.558 -32.436 25.105 1.00 38.17 C
ATOM 4197 CG GLU L 110 -75.826 -31.797 26.473 1.00 44.03 C
ATOM 4198 CD GLU L 110 -75.478 -32.687 27.678 1.00 46.66 C
ATOM 4199 OE1 GLU L 110 -76.316 -33.478 28.160 1.00 49.25 O
ATOM 4200 OE2 GLU L 110 -74.347 -32.567 28.177 1.00 52.36 O
ATOM 4201 C GLU L 110 -75.598 -32.216 22.604 1.00 37.26 C
ATOM 4202 O GLU L 110 -76.480 -32.586 21.850 1.00 44.07 O
ATOM 4203 N ILE L 111 -74.323 -32.368 22.341 1.00 40.27 N
ATOM 4204 CA ILE L 111 -73.828 -32.947 21.129 1.00 41.83 C
ATOM 4205 CB ILE L 111 -72.490 -32.347 20.757 1.00 48.75 C
ATOM 4206 CG1 ILE L 111 -72.557 -30.823 20.844 1.00 51.35 C
ATOM 4207 CD1 ILE L 111 -71.547 -30.042 19.986 1.00 58.35 C
ATOM 4208 CG2 ILE L 111 -72.126 -32.743 19.325 1.00 57.74 C
ATOM 4209 C ILE L 111 -73.709 -34.450 21.239 1.00 43.20 C
ATOM 4210 O ILE L 111 -73.093 -34.954 22.177 1.00 46.60 O
ATOM 4211 N LYS L 112 -74.360 -35.159 20.307 1.00 51.52 N
ATOM 4212 CA LYS L 112 -74.130 -36.611 20.036 1.00 54.01 C
ATOM 4213 CB LYS L 112 -75.166 -37.193 19.065 1.00 61.33 C
ATOM 4214 CG LYS L 112 -76.071 -38.240 19.672 1.00 69.88 C
ATOM 4215 CD LYS L 112 -77.086 -38.783 18.669 1.00 67.87 C
ATOM 4216 CE LYS L 112 -78.435 -39.063 19.351 1.00 74.52 C
ATOM 4217 NZ LYS L 112 -79.222 -40.155 18.705 1.00 78.08 N
ATOM 4218 C LYS L 112 -72.762 -36.883 19.416 1.00 50.10 C

ATOM 4219 O LYS L 112 -72.186 -36.063 18.735 1.00 48.43 O
ATOM 4220 N ARG L 113 -72.274 -38.096 19.596 1.00 56.45 N
ATOM 4221 CA ARG L 113 -70.861 -38.366 19.428 1.00 48.55 C
ATOM 4222 CB ARG L 113 -70.238 -37.667 20.599 1.00 58.11 C
ATOM 4223 CG ARG L 113 -68.783 -37.533 20.544 1.00 55.11 C
ATOM 4224 CD ARG L 113 -68.223 -37.915 21.879 1.00 47.95 C
ATOM 4225 NE ARG L 113 -66.840 -37.614 21.653 1.00 59.19 N
ATOM 4226 CZ ARG L 113 -65.971 -38.382 21.010 1.00 49.05 C
ATOM 4227 NH1 ARG L 113 -66.283 -39.605 20.624 1.00 50.93 N
ATOM 4228 NH2 ARG L 113 -64.758 -37.913 20.817 1.00 45.56 N
ATOM 4229 C ARG L 113 -70.623 -39.862 19.566 1.00 46.83 C
ATOM 4230 O ARG L 113 -71.453 -40.584 20.160 1.00 45.09 O
ATOM 4231 N THR L 114 -69.517 -40.367 19.038 1.00 51.63 N
ATOM 4232 CA THR L 114 -69.244 -41.807 19.187 1.00 55.84 C
ATOM 4233 CB THR L 114 -68.162 -42.331 18.218 1.00 54.26 C
ATOM 4234 OG1 THR L 114 -66.945 -41.601 18.402 1.00 51.55 O
ATOM 4235 CG2 THR L 114 -68.635 -42.203 16.777 1.00 53.68 C
ATOM 4236 C THR L 114 -68.805 -42.130 20.604 1.00 57.70 C
ATOM 4237 O THR L 114 -68.321 -41.251 21.336 1.00 57.21 O
ATOM 4238 N VAL L 115 -68.966 -43.400 20.967 1.00 60.07 N
ATOM 4239 CA VAL L 115 -68.487 -43.917 22.243 1.00 60.38 C
ATOM 4240 CB VAL L 115 -68.897 -45.390 22.451 1.00 63.94 C
ATOM 4241 CG1 VAL L 115 -68.205 -45.981 23.683 1.00 66.82 C
ATOM 4242 CG2 VAL L 115 -70.430 -45.506 22.571 1.00 61.97 C
ATOM 4243 C VAL L 115 -66.965 -43.741 22.332 1.00 60.30 C
ATOM 4244 O VAL L 115 -66.243 -44.005 21.349 1.00 62.72 O
ATOM 4245 N ALA L 116 -66.506 -43.212 23.471 1.00 52.23 N
ATOM 4246 CA ALA L 116 -65.055 -43.039 23.758 1.00 50.51 C
ATOM 4247 CB ALA L 116 -64.552 -41.629 23.505 1.00 50.49 C
ATOM 4248 C ALA L 116 -64.745 -43.430 25.170 1.00 50.57 C
ATOM 4249 O ALA L 116 -65.454 -43.063 26.132 1.00 51.33 O
ATOM 4250 N ALA L 117 -63.678 -44.203 25.285 1.00 55.94 N
ATOM 4251 CA ALA L 117 -63.284 -44.809 26.546 1.00 58.03 C
ATOM 4252 CB ALA L 117 -62.453 -46.073 26.300 1.00 59.80 C
ATOM 4253 C ALA L 117 -62.478 -43.791 27.334 1.00 48.29 C
ATOM 4254 O ALA L 117 -61.682 -43.054 26.740 1.00 47.15 O
ATOM 4255 N PRO L 118 -62.665 -43.759 28.662 1.00 46.62 N

ATOM 4256 CA PRO L 118 -61.824 -42.915 29.456 1.00 50.12 C
ATOM 4257 CB PRO L 118 -62.395 -43.096 30.848 1.00 48.46 C
ATOM 4258 CG PRO L 118 -62.918 -44.461 30.838 1.00 48.59 C
ATOM 4259 CD PRO L 118 -63.572 -44.536 29.515 1.00 48.49 C
ATOM 4260 C PRO L 118 -60.376 -43.355 29.450 1.00 54.41 C
ATOM 4261 O PRO L 118 -60.079 -44.545 29.328 1.00 62.79 O
ATOM 4262 N SER L 119 -59.494 -42.378 29.573 1.00 54.59 N
ATOM 4263 CA SER L 119 -58.146 -42.592 30.081 1.00 50.70 C
ATOM 4264 CB SER L 119 -57.177 -41.659 29.368 1.00 50.65 C
ATOM 4265 OG SER L 119 -57.516 -41.615 27.993 1.00 57.98 O
ATOM 4266 C SER L 119 -58.192 -42.296 31.603 1.00 50.87 C
ATOM 4267 O SER L 119 -58.603 -41.184 32.042 1.00 45.85 O
ATOM 4268 N VAL L 120 -57.767 -43.300 32.373 1.00 49.99 N
ATOM 4269 CA VAL L 120 -57.728 -43.286 33.833 1.00 48.93 C
ATOM 4270 CB VAL L 120 -58.197 -44.628 34.373 1.00 47.54 C
ATOM 4271 CG1 VAL L 120 -58.432 -44.566 35.876 1.00 51.49 C
ATOM 4272 CG2 VAL L 120 -59.468 -45.041 33.658 1.00 50.04 C
ATOM 4273 C VAL L 120 -56.327 -42.952 34.404 1.00 49.48 C
ATOM 4274 O VAL L 120 -55.327 -43.521 33.997 1.00 50.23 O
ATOM 4275 N PHE L 121 -56.299 -41.992 35.328 1.00 53.40 N
ATOM 4276 CA PHE L 121 -55.113 -41.575 36.092 1.00 51.51 C
ATOM 4277 CB PHE L 121 -54.713 -40.171 35.698 1.00 54.14 C
ATOM 4278 CG PHE L 121 -54.519 -40.008 34.227 1.00 59.80 C
ATOM 4279 CD1 PHE L 121 -53.267 -40.188 33.656 1.00 54.72 C
ATOM 4280 CE1 PHE L 121 -53.100 -40.059 32.284 1.00 54.82 C
ATOM 4281 CZ PHE L 121 -54.180 -39.720 31.478 1.00 49.78 C
ATOM 4282 CE2 PHE L 121 -55.429 -39.525 32.047 1.00 52.42 C
ATOM 4283 CD2 PHE L 121 -55.601 -39.666 33.404 1.00 55.44 C
ATOM 4284 C PHE L 121 -55.425 -41.566 37.585 1.00 50.26 C
ATOM 4285 O PHE L 121 -56.458 -41.060 37.974 1.00 49.76 O
ATOM 4286 N ILE L 122 -54.529 -42.089 38.420 1.00 53.05 N
ATOM 4287 CA ILE L 122 -54.730 -42.062 39.885 1.00 46.95 C
ATOM 4288 CB ILE L 122 -54.805 -43.458 40.493 1.00 49.85 C
ATOM 4289 CG1 ILE L 122 -55.083 -43.380 41.989 1.00 46.16 C
ATOM 4290 CD1 ILE L 122 -55.469 -44.717 42.579 1.00 46.76 C
ATOM 4291 CG2 ILE L 122 -53.536 -44.279 40.210 1.00 56.92 C
ATOM 4292 C ILE L 122 -53.647 -41.216 40.493 1.00 46.12 C

ATOM 4293 O ILE L 122 -52.529 -41.264 40.027 1.00 47.75 O
ATOM 4294 N PHE L 123 -54.012 -40.389 41.480 1.00 48.81 N
ATOM 4295 CA PHE L 123 -53.095 -39.430 42.131 1.00 47.45 C
ATOM 4296 CB PHE L 123 -53.472 -37.965 41.882 1.00 46.57 C
ATOM 4297 CG PHE L 123 -53.440 -37.525 40.427 1.00 46.97 C
ATOM 4298 CD1 PHE L 123 -54.575 -37.661 39.616 1.00 45.72 C
ATOM 4299 CE1 PHE L 123 -54.577 -37.225 38.308 1.00 44.43 C
ATOM 4300 CZ PHE L 123 -53.440 -36.648 37.781 1.00 46.73 C
ATOM 4301 CE2 PHE L 123 -52.310 -36.466 38.592 1.00 48.65 C
ATOM 4302 CD2 PHE L 123 -52.323 -36.894 39.907 1.00 43.63 C
ATOM 4303 C PHE L 123 -53.077 -39.627 43.657 1.00 52.15 C
ATOM 4304 O PHE L 123 -54.119 -39.525 44.324 1.00 48.05 O
ATOM 4305 N PRO L 124 -51.889 -39.872 44.232 1.00 56.70 N
ATOM 4306 CA PRO L 124 -51.810 -39.939 45.690 1.00 54.94 C
ATOM 4307 CB PRO L 124 -50.392 -40.487 45.922 1.00 60.08 C
ATOM 4308 CG PRO L 124 -49.617 -39.995 44.749 1.00 62.40 C
ATOM 4309 CD PRO L 124 -50.578 -40.143 43.605 1.00 62.26 C
ATOM 4310 C PRO L 124 -51.934 -38.567 46.325 1.00 46.77 C
ATOM 4311 O PRO L 124 -51.704 -37.572 45.647 1.00 48.83 O
ATOM 4312 N PRO L 125 -52.280 -38.502 47.616 1.00 48.17 N
ATOM 4313 CA PRO L 125 -52.164 -37.234 48.295 1.00 51.30 C
ATOM 4314 CB PRO L 125 -52.569 -37.565 49.741 1.00 50.80 C
ATOM 4315 CG PRO L 125 -52.235 -38.986 49.892 1.00 51.44 C
ATOM 4316 CD PRO L 125 -52.601 -39.582 48.570 1.00 54.50 C
ATOM 4317 C PRO L 125 -50.714 -36.795 48.269 1.00 52.94 C
ATOM 4318 O PRO L 125 -49.825 -37.625 48.430 1.00 58.03 O
ATOM 4319 N SER L 126 -50.505 -35.508 48.036 1.00 51.25 N
ATOM 4320 CA SER L 126 -49.208 -34.855 48.142 1.00 53.39 C
ATOM 4321 CB SER L 126 -49.382 -33.361 47.858 1.00 55.68 C
ATOM 4322 OG SER L 126 -50.432 -32.820 48.655 1.00 59.72 O
ATOM 4323 C SER L 126 -48.621 -34.969 49.527 1.00 55.86 C
ATOM 4324 O SER L 126 -49.360 -35.113 50.492 1.00 62.21 O
ATOM 4325 N ASP L 127 -47.297 -34.851 49.638 1.00 65.28 N
ATOM 4326 CA ASP L 127 -46.659 -34.704 50.967 1.00 68.27 C
ATOM 4327 CB ASP L 127 -45.118 -34.594 50.880 1.00 72.28 C
ATOM 4328 CG ASP L 127 -44.446 -35.879 50.360 1.00 81.34 C
ATOM 4329 OD1 ASP L 127 -44.897 -37.002 50.718 1.00 66.76 O

ATOM 4330 OD2 ASP L 127 -43.457 -35.748 49.583 1.00 89.62 O
ATOM 4331 C ASP L 127 -47.225 -33.486 51.722 1.00 64.03 C
ATOM 4332 O ASP L 127 -47.479 -33.594 52.907 1.00 59.47 O
ATOM 4333 N GLU L 128 -47.447 -32.361 51.026 1.00 63.71 N
ATOM 4334 CA GLU L 128 -47.897 -31.106 51.677 1.00 70.16 C
ATOM 4335 CB GLU L 128 -48.058 -29.942 50.686 1.00 73.17 C
ATOM 4336 CG GLU L 128 -46.980 -29.831 49.607 1.00 82.40 C
ATOM 4337 CD GLU L 128 -47.069 -28.547 48.797 1.00 93.82 C
ATOM 4338 OE1 GLU L 128 -47.785 -27.603 49.222 1.00102.22 O
ATOM 4339 OE2 GLU L 128 -46.418 -28.481 47.725 1.00 97.45 O
ATOM 4340 C GLU L 128 -49.215 -31.278 52.434 1.00 76.34 C
ATOM 4341 O GLU L 128 -49.350 -30.753 53.531 1.00 81.60 O
ATOM 4342 N GLN L 129 -50.182 -32.000 51.845 1.00 75.36 N
ATOM 4343 CA GLN L 129 -51.501 -32.244 52.491 1.00 68.13 C
ATOM 4344 CB GLN L 129 -52.522 -32.864 51.505 1.00 59.76 C
ATOM 4345 CG GLN L 129 -53.986 -32.870 51.984 1.00 57.48 C
ATOM 4346 CD GLN L 129 -54.920 -33.677 51.069 1.00 55.66 C
ATOM 4347 OE1 GLN L 129 -54.489 -34.316 50.106 1.00 54.39 O
ATOM 4348 NE2 GLN L 129 -56.203 -33.660 51.388 1.00 52.96 N
ATOM 4349 C GLN L 129 -51.376 -33.157 53.702 1.00 57.84 C
ATOM 4350 O GLN L 129 -52.023 -32.924 54.709 1.00 54.52 O
ATOM 4351 N LEU L 130 -50.593 -34.222 53.554 1.00 63.25 N
ATOM 4352 CA LEU L 130 -50.384 -35.209 54.619 1.00 69.41 C
ATOM 4353 CB LEU L 130 -49.366 -36.269 54.192 1.00 71.43 C
ATOM 4354 CG LEU L 130 -49.817 -37.351 53.217 1.00 70.16 C
ATOM 4355 CD1 LEU L 130 -48.645 -38.278 52.850 1.00 71.14 C
ATOM 4356 CD2 LEU L 130 -50.991 -38.131 53.784 1.00 66.24 C
ATOM 4357 C LEU L 130 -49.924 -34.597 55.935 1.00 69.59 C
ATOM 4358 O LEU L 130 -50.348 -35.060 56.997 1.00 70.19 O
ATOM 4359 N LYS L 131 -49.073 -33.571 55.851 1.00 70.42 N
ATOM 4360 CA LYS L 131 -48.579 -32.824 57.030 1.00 86.69 C
ATOM 4361 CB LYS L 131 -47.700 -31.609 56.627 1.00 94.46 C
ATOM 4362 CG LYS L 131 -46.255 -31.882 56.209 1.00 92.61 C
ATOM 4363 CD LYS L 131 -45.425 -30.588 56.185 1.00 97.80 C
ATOM 4364 CE LYS L 131 -45.900 -29.601 55.109 1.00 99.98 C
ATOM 4365 NZ LYS L 131 -45.089 -28.354 55.003 1.00 93.98 N
ATOM 4366 C LYS L 131 -49.728 -32.289 57.875 1.00 81.96 C

ATOM 4367 O LYS L 131 -49.722 -32.423 59.103 1.00 76.39 O
ATOM 4368 N SER L 132 -50.702 -31.678 57.200 1.00 80.50 N
ATOM 4369 CA SER L 132 -51.825 -31.005 57.870 1.00 81.21 C
ATOM 4370 CB SER L 132 -52.343 -29.848 57.000 1.00 81.33 C
ATOM 4371 OG SER L 132 -52.103 -30.090 55.618 1.00 85.79 O
ATOM 4372 C SER L 132 -52.965 -31.950 58.322 1.00 70.31 C
ATOM 4373 O SER L 132 -53.976 -31.473 58.834 1.00 74.24 O
ATOM 4374 N GLY L 133 -52.808 -33.268 58.143 1.00 59.04 N
ATOM 4375 CA GLY L 133 -53.687 -34.248 58.787 1.00 63.25 C
ATOM 4376 C GLY L 133 -54.740 -34.985 57.956 1.00 73.12 C
ATOM 4377 O GLY L 133 -55.464 -35.838 58.503 1.00 69.14 O
ATOM 4378 N THR L 134 -54.843 -34.684 56.652 1.00 73.74 N
ATOM 4379 CA THR L 134 -55.770 -35.408 55.772 1.00 67.24 C
ATOM 4380 CB THR L 134 -56.967 -34.520 55.389 1.00 72.71 C
ATOM 4381 OG1 THR L 134 -57.126 -33.469 56.355 1.00 74.97 O
ATOM 4382 CG2 THR L 134 -58.262 -35.354 55.319 1.00 76.03 C
ATOM 4383 C THR L 134 -55.071 -35.912 54.509 1.00 66.57 C
ATOM 4384 O THR L 134 -54.039 -35.381 54.111 1.00 64.64 O
ATOM 4385 N ALA L 135 -55.638 -36.962 53.913 1.00 60.69 N
ATOM 4386 CA ALA L 135 -55.200 -37.516 52.629 1.00 56.94 C
ATOM 4387 CB ALA L 135 -54.647 -38.922 52.817 1.00 54.81 C
ATOM 4388 C ALA L 135 -56.376 -37.563 51.653 1.00 55.13 C
ATOM 4389 O ALA L 135 -57.401 -38.203 51.937 1.00 49.24 O
ATOM 4390 N SER L 136 -56.237 -36.881 50.513 1.00 52.64 N
ATOM 4391 CA SER L 136 -57.220 -36.984 49.433 1.00 44.15 C
ATOM 4392 CB SER L 136 -57.586 -35.604 48.955 1.00 42.39 C
ATOM 4393 OG SER L 136 -58.219 -34.926 50.015 1.00 42.84 O
ATOM 4394 C SER L 136 -56.565 -37.742 48.328 1.00 43.50 C
ATOM 4395 O SER L 136 -55.461 -37.362 47.899 1.00 48.28 O
ATOM 4396 N VAL L 137 -57.214 -38.821 47.895 1.00 41.65 N
ATOM 4397 CA VAL L 137 -56.769 -39.633 46.763 1.00 45.70 C
ATOM 4398 CB VAL L 137 -56.763 -41.159 47.084 1.00 51.76 C
ATOM 4399 CG1 VAL L 137 -55.791 -41.888 46.154 1.00 47.67 C
ATOM 4400 CG2 VAL L 137 -56.402 -41.425 48.551 1.00 54.85 C
ATOM 4401 C VAL L 137 -57.735 -39.394 45.593 1.00 45.15 C
ATOM 4402 O VAL L 137 -58.926 -39.649 45.734 1.00 37.60 O
ATOM 4403 N VAL L 138 -57.198 -38.918 44.459 1.00 44.85 N

ATOM 4404 CA VAL L 138 -57.961 -38.547 43.286 1.00 45.58 C
ATOM 4405 CB VAL L 138 -57.570 -37.128 42.786 1.00 50.21 C
ATOM 4406 CG1 VAL L 138 -58.442 -36.694 41.605 1.00 50.56 C
ATOM 4407 CG2 VAL L 138 -57.708 -36.077 43.898 1.00 50.28 C
ATOM 4408 C VAL L 138 -57.810 -39.594 42.166 1.00 49.75 C
ATOM 4409 O VAL L 138 -56.709 -40.031 41.869 1.00 52.05 O
ATOM 4410 N CYS L 139 -58.931 -39.990 41.562 1.00 44.87 N
ATOM 4411 CA CYS L 139 -58.954 -40.799 40.359 1.00 46.82 C
ATOM 4412 CB CYS L 139 -59.690 -42.074 40.690 1.00 53.35 C
ATOM 4413 SG CYS L 139 -59.901 -43.295 39.390 1.00 57.96 S
ATOM 4414 C CYS L 139 -59.681 -39.996 39.246 1.00 49.05 C
ATOM 4415 O CYS L 139 -60.877 -39.686 39.340 1.00 47.17 O
ATOM 4416 N LEU L 140 -58.931 -39.627 38.217 1.00 46.26 N
ATOM 4417 CA LEU L 140 -59.451 -38.960 37.062 1.00 43.95 C
ATOM 4418 CB LEU L 140 -58.408 -37.991 36.513 1.00 47.57 C
ATOM 4419 CG LEU L 140 -58.712 -37.322 35.157 1.00 45.77 C
ATOM 4420 CD1 LEU L 140 -59.930 -36.425 35.313 1.00 44.54 C
ATOM 4421 CD2 LEU L 140 -57.502 -36.520 34.703 1.00 49.23 C
ATOM 4422 C LEU L 140 -59.840 -39.975 35.962 1.00 52.58 C
ATOM 4423 O LEU L 140 -59.010 -40.834 35.559 1.00 42.73 O
ATOM 4424 N LEU L 141 -61.083 -39.833 35.470 1.00 47.06 N
ATOM 4425 CA LEU L 141 -61.562 -40.515 34.283 1.00 44.94 C
ATOM 4426 CB LEU L 141 -62.949 -41.103 34.510 1.00 45.01 C
ATOM 4427 CG LEU L 141 -63.082 -42.384 35.331 1.00 44.50 C
ATOM 4428 CD1 LEU L 141 -62.565 -42.240 36.749 1.00 42.74 C
ATOM 4429 CD2 LEU L 141 -64.555 -42.758 35.354 1.00 47.85 C
ATOM 4430 C LEU L 141 -61.654 -39.411 33.259 1.00 49.51 C
ATOM 4431 O LEU L 141 -62.514 -38.506 33.401 1.00 48.98 O
ATOM 4432 N ASN L 142 -60.797 -39.460 32.229 1.00 47.96 N
ATOM 4433 CA ASN L 142 -60.672 -38.331 31.309 1.00 47.66 C
ATOM 4434 CB ASN L 142 -59.228 -37.887 31.300 1.00 49.70 C
ATOM 4435 CG ASN L 142 -59.073 -36.454 30.893 1.00 46.63 C
ATOM 4436 OD1 ASN L 142 -58.225 -36.116 30.077 1.00 48.70 O
ATOM 4437 ND2 ASN L 142 -59.892 -35.604 31.460 1.00 47.36 N
ATOM 4438 C ASN L 142 -61.161 -38.527 29.843 1.00 49.78 C
ATOM 4439 O ASN L 142 -60.897 -39.557 29.223 1.00 47.42 O
ATOM 4440 N ASN L 143 -61.868 -37.506 29.325 1.00 51.10 N

ATOM 4441 CA ASN L 143 -62.374 -37.427 27.934 1.00 46.73 C
ATOM 4442 CB ASN L 143 -61.227 -37.078 27.013 1.00 47.99 C
ATOM 4443 CG ASN L 143 -60.490 -35.818 27.415 1.00 48.49 C
ATOM 4444 OD1 ASN L 143 -60.777 -35.132 28.395 1.00 43.52 O
ATOM 4445 ND2 ASN L 143 -59.476 -35.545 26.657 1.00 57.94 N
ATOM 4446 C ASN L 143 -63.057 -38.702 27.391 1.00 50.05 C
ATOM 4447 O ASN L 143 -62.572 -39.316 26.427 1.00 47.96 O
ATOM 4448 N PHE L 144 -64.180 -39.060 28.015 1.00 48.18 N
ATOM 4449 CA PHE L 144 -65.011 -40.186 27.650 1.00 47.57 C
ATOM 4450 CB PHE L 144 -65.111 -41.168 28.826 1.00 46.21 C
ATOM 4451 CG PHE L 144 -65.781 -40.626 30.065 1.00 44.96 C
ATOM 4452 CD1 PHE L 144 -65.037 -39.966 31.080 1.00 49.07 C
ATOM 4453 CE1 PHE L 144 -65.630 -39.511 32.258 1.00 37.84 C
ATOM 4454 CZ PHE L 144 -66.964 -39.748 32.454 1.00 41.70 C
ATOM 4455 CE2 PHE L 144 -67.713 -40.400 31.457 1.00 40.47 C
ATOM 4456 CD2 PHE L 144 -67.115 -40.839 30.286 1.00 44.17 C
ATOM 4457 C PHE L 144 -66.422 -39.782 27.233 1.00 49.25 C
ATOM 4458 O PHE L 144 -66.855 -38.670 27.467 1.00 47.40 O
ATOM 4459 N TYR L 145 -67.151 -40.732 26.659 1.00 49.35 N
ATOM 4460 CA TYR L 145 -68.519 -40.511 26.201 1.00 49.27 C
ATOM 4461 CB TYR L 145 -68.522 -39.786 24.841 1.00 52.13 C
ATOM 4462 CG TYR L 145 -69.924 -39.413 24.388 1.00 55.34 C
ATOM 4463 CD1 TYR L 145 -70.763 -40.347 23.758 1.00 54.87 C
ATOM 4464 CE1 TYR L 145 -72.067 -40.015 23.415 1.00 52.55 C
ATOM 4465 CZ TYR L 145 -72.539 -38.738 23.673 1.00 51.58 C
ATOM 4466 OH TYR L 145 -73.823 -38.387 23.316 1.00 51.99 O
ATOM 4467 CE2 TYR L 145 -71.733 -37.804 24.301 1.00 48.85 C
ATOM 4468 CD2 TYR L 145 -70.434 -38.137 24.639 1.00 53.06 C
ATOM 4469 C TYR L 145 -69.197 -41.848 26.027 1.00 50.75 C
ATOM 4470 O TYR L 145 -68.591 -42.766 25.479 1.00 56.54 O
ATOM 4471 N PRO L 146 -70.443 -42.000 26.426 1.00 50.13 N
ATOM 4472 CA PRO L 146 -71.281 -41.024 27.094 1.00 54.86 C
ATOM 4473 CB PRO L 146 -72.674 -41.644 26.944 1.00 52.92 C
ATOM 4474 CG PRO L 146 -72.439 -43.085 26.969 1.00 49.96 C
ATOM 4475 CD PRO L 146 -71.074 -43.317 26.354 1.00 49.72 C
ATOM 4476 C PRO L 146 -70.925 -40.863 28.567 1.00 56.25 C
ATOM 4477 O PRO L 146 -69.950 -41.430 29.020 1.00 53.55 O

ATOM 4478 N ARG L 147 -71.703 -40.089 29.313 1.00 63.55 N
ATOM 4479 CA ARG L 147 -71.251 -39.629 30.628 1.00 61.15 C
ATOM 4480 CB ARG L 147 -71.891 -38.281 31.030 1.00 71.32 C
ATOM 4481 CG ARG L 147 -73.386 -38.326 31.301 1.00 75.70 C
ATOM 4482 CD ARG L 147 -73.813 -37.406 32.450 1.00 80.69 C
ATOM 4483 NE ARG L 147 -73.715 -35.987 32.135 1.00 76.88 N
ATOM 4484 CZ ARG L 147 -74.466 -35.335 31.234 1.00 72.40 C
ATOM 4485 NH1 ARG L 147 -75.411 -35.948 30.479 1.00 71.28 N
ATOM 4486 NH2 ARG L 147 -74.247 -34.038 31.060 1.00 61.97 N
ATOM 4487 C ARG L 147 -71.421 -40.651 31.720 1.00 58.40 C
ATOM 4488 O ARG L 147 -70.830 -40.510 32.804 1.00 64.39 O
ATOM 4489 N GLU L 148 -72.199 -41.694 31.457 1.00 59.30 N
ATOM 4490 CA GLU L 148 -72.417 -42.703 32.482 1.00 54.82 C
ATOM 4491 CB GLU L 148 -73.739 -43.534 32.349 1.00 60.17 C
ATOM 4492 CG GLU L 148 -74.568 -43.480 31.040 1.00 71.65 C
ATOM 4493 CD GLU L 148 -75.221 -42.124 30.652 1.00 73.33 C
ATOM 4494 OE1 GLU L 148 -75.997 -41.486 31.433 1.00 69.45 O
ATOM 4495 OE2 GLU L 148 -74.979 -41.710 29.493 1.00 74.05 O
ATOM 4496 C GLU L 148 -71.116 -43.507 32.630 1.00 50.14 C
ATOM 4497 O GLU L 148 -70.450 -43.906 31.649 1.00 48.17 O
ATOM 4498 N ALA L 149 -70.714 -43.623 33.888 1.00 49.55 N
ATOM 4499 CA ALA L 149 -69.459 -44.235 34.295 1.00 52.64 C
ATOM 4500 CB ALA L 149 -68.307 -43.262 34.152 1.00 55.18 C
ATOM 4501 C ALA L 149 -69.588 -44.663 35.732 1.00 54.10 C
ATOM 4502 O ALA L 149 -70.368 -44.088 36.464 1.00 62.48 O
ATOM 4503 N LYS L 150 -68.857 -45.704 36.116 1.00 56.13 N
ATOM 4504 CA LYS L 150 -68.898 -46.236 37.467 1.00 62.27 C
ATOM 4505 CB LYS L 150 -69.521 -47.638 37.482 1.00 73.86 C
ATOM 4506 CG LYS L 150 -69.957 -48.157 38.862 1.00 85.33 C
ATOM 4507 CD LYS L 150 -69.531 -49.614 39.148 1.00 93.64 C
ATOM 4508 CE LYS L 150 -70.257 -50.668 38.296 1.00 98.11 C
ATOM 4509 NZ LYS L 150 -69.692 -52.049 38.432 1.00 89.78 N
ATOM 4510 C LYS L 150 -67.457 -46.274 37.970 1.00 61.08 C
ATOM 4511 O LYS L 150 -66.537 -46.694 37.256 1.00 57.48 O
ATOM 4512 N VAL L 151 -67.256 -45.861 39.208 1.00 55.80 N
ATOM 4513 CA VAL L 151 -65.927 -45.769 39.725 1.00 60.76 C
ATOM 4514 CB VAL L 151 -65.372 -44.314 39.587 1.00 62.55 C

ATOM 4515 CG1 VAL L 151 -66.014 -43.359 40.577 1.00 67.04 C
ATOM 4516 CG2 VAL L 151 -63.875 -44.292 39.749 1.00 65.40 C
ATOM 4517 C VAL L 151 -65.936 -46.351 41.138 1.00 62.63 C
ATOM 4518 O VAL L 151 -66.642 -45.855 42.016 1.00 64.26 O
ATOM 4519 N GLN L 152 -65.158 -47.424 41.316 1.00 60.90 N
ATOM 4520 CA GLN L 152 -65.083 -48.183 42.553 1.00 68.01 C
ATOM 4521 CB GLN L 152 -65.292 -49.667 42.236 1.00 79.87 C
ATOM 4522 CG GLN L 152 -66.036 -50.456 43.307 1.00 87.55 C
ATOM 4523 CD GLN L 152 -67.468 -50.781 42.924 1.00 89.27 C
ATOM 4524 OE1 GLN L 152 -67.715 -51.355 41.865 1.00 98.87 O
ATOM 4525 NE2 GLN L 152 -68.414 -50.430 43.789 1.00 76.47 N
ATOM 4526 C GLN L 152 -63.702 -47.980 43.183 1.00 60.49 C
ATOM 4527 O GLN L 152 -62.691 -47.959 42.473 1.00 59.67 O
ATOM 4528 N TRP L 153 -63.659 -47.801 44.502 1.00 57.55 N
ATOM 4529 CA TRP L 153 -62.397 -47.683 45.245 1.00 54.92 C
ATOM 4530 CB TRP L 153 -62.425 -46.518 46.216 1.00 53.00 C
ATOM 4531 CG TRP L 153 -62.256 -45.217 45.610 1.00 51.53 C
ATOM 4532 CD1 TRP L 153 -63.247 -44.343 45.278 1.00 55.34 C
ATOM 4533 NE1 TRP L 153 -62.724 -43.224 44.715 1.00 49.61 N
ATOM 4534 CE2 TRP L 153 -61.362 -43.340 44.685 1.00 52.08 C
ATOM 4535 CD2 TRP L 153 -61.036 -44.591 45.247 1.00 49.58 C
ATOM 4536 CE3 TRP L 153 -59.706 -44.960 45.319 1.00 48.50 C
ATOM 4537 CZ3 TRP L 153 -58.732 -44.058 44.849 1.00 52.25 C
ATOM 4538 CH2 TRP L 153 -59.086 -42.822 44.317 1.00 49.11 C
ATOM 4539 CZ2 TRP L 153 -60.392 -42.446 44.221 1.00 51.75 C
ATOM 4540 C TRP L 153 -62.143 -48.964 46.045 1.00 63.22 C
ATOM 4541 O TRP L 153 -63.069 -49.569 46.585 1.00 54.22 O
ATOM 4542 N LYS L 154 -60.873 -49.342 46.133 1.00 73.15 N
ATOM 4543 CA LYS L 154 -60.437 -50.535 46.860 1.00 71.53 C
ATOM 4544 CB LYS L 154 -60.180 -51.689 45.881 1.00 77.24 C
ATOM 4545 CG LYS L 154 -61.433 -52.332 45.308 1.00 86.24 C
ATOM 4546 CD LYS L 154 -61.097 -53.467 44.345 1.00 90.71 C
ATOM 4547 CE LYS L 154 -62.303 -54.360 44.073 1.00 93.92 C
ATOM 4548 NZ LYS L 154 -62.356 -54.842 42.664 1.00 98.64 N
ATOM 4549 C LYS L 154 -59.157 -50.177 47.595 1.00 69.68 C
ATOM 4550 O LYS L 154 -58.175 -49.762 46.973 1.00 73.06 O
ATOM 4551 N VAL L 155 -59.149 -50.313 48.911 1.00 76.61 N

ATOM 4552 CA VAL L 155 -57.917 -50.051 49.634 1.00 80.81 C
ATOM 4553 CB VAL L 155 -58.159 -49.272 50.920 1.00 77.27 C
ATOM 4554 CG1 VAL L 155 -56.868 -49.096 51.693 1.00 74.97 C
ATOM 4555 CG2 VAL L 155 -58.689 -47.897 50.535 1.00 76.31 C
ATOM 4556 C VAL L 155 -57.092 -51.338 49.692 1.00 86.81 C
ATOM 4557 O VAL L 155 -56.478 -51.656 48.672 1.00 99.81 O
ATOM 4558 N ASP L 156 -57.060 -52.120 50.766 1.00 82.94 N
ATOM 4559 CA ASP L 156 -56.210 -53.344 50.697 1.00 86.71 C
ATOM 4560 CB ASP L 156 -55.575 -53.719 52.051 1.00 87.40 C
ATOM 4561 CG ASP L 156 -54.296 -52.927 52.355 1.00 88.64 C
ATOM 4562 OD1 ASP L 156 -53.462 -52.676 51.440 1.00 75.09 O
ATOM 4563 OD2 ASP L 156 -54.118 -52.573 53.543 1.00 96.71 O
ATOM 4564 C ASP L 156 -57.043 -54.474 50.102 1.00 78.65 C
ATOM 4565 O ASP L 156 -57.338 -55.466 50.770 1.00 65.40 O
ATOM 4566 N ASN L 157 -57.402 -54.279 48.828 1.00 74.20 N
ATOM 4567 CA ASN L 157 -58.426 -55.046 48.087 1.00 78.85 C
ATOM 4568 CB ASN L 157 -57.957 -56.506 47.858 1.00 83.74 C
ATOM 4569 CG ASN L 157 -58.626 -57.186 46.660 1.00 86.33 C
ATOM 4570 OD1 ASN L 157 -58.180 -58.240 46.229 1.00 94.15 O
ATOM 4571 ND2 ASN L 157 -59.693 -56.604 46.135 1.00 81.69 N
ATOM 4572 C ASN L 157 -59.845 -54.989 48.705 1.00 79.89 C
ATOM 4573 O ASN L 157 -60.736 -55.722 48.262 1.00 77.04 O
ATOM 4574 N ALA L 158 -60.070 -54.100 49.679 1.00 83.40 N
ATOM 4575 CA ALA L 158 -61.351 -54.015 50.388 1.00 82.70 C
ATOM 4576 CB ALA L 158 -61.114 -53.711 51.864 1.00 79.34 C
ATOM 4577 C ALA L 158 -62.207 -52.909 49.737 1.00 92.33 C
ATOM 4578 O ALA L 158 -61.780 -51.743 49.689 1.00 84.05 O
ATOM 4579 N LEU L 159 -63.393 -53.281 49.234 1.00 87.12 N
ATOM 4580 CA LEU L 159 -64.335 -52.334 48.604 1.00 80.30 C
ATOM 4581 CB LEU L 159 -65.621 -53.067 48.185 1.00 85.17 C
ATOM 4582 CG LEU L 159 -66.824 -52.213 47.755 1.00 87.29 C
ATOM 4583 CD1 LEU L 159 -66.442 -51.373 46.544 1.00 87.28 C
ATOM 4584 CD2 LEU L 159 -68.059 -53.065 47.472 1.00 86.59 C
ATOM 4585 C LEU L 159 -64.719 -51.176 49.535 1.00 70.71 C
ATOM 4586 O LEU L 159 -65.240 -51.419 50.617 1.00 66.34 O
ATOM 4587 N GLN L 160 -64.501 -49.931 49.104 1.00 65.47 N
ATOM 4588 CA GLN L 160 -64.907 -48.765 49.910 1.00 63.60 C

ATOM 4589 CB GLN L 160 -64.018 -47.568 49.642 1.00 63.52 C
ATOM 4590 CG GLN L 160 -62.537 -47.846 49.784 1.00 65.60 C
ATOM 4591 CD GLN L 160 -62.139 -48.212 51.198 1.00 58.52 C
ATOM 4592 OE1 GLN L 160 -61.734 -49.340 51.456 1.00 64.38 O
ATOM 4593 NE2 GLN L 160 -62.240 -47.260 52.113 1.00 52.82 N
ATOM 4594 C GLN L 160 -66.338 -48.345 49.660 1.00 58.77 C
ATOM 4595 O GLN L 160 -66.907 -48.625 48.598 1.00 61.56 O
ATOM 4596 N SER L 161 -66.902 -47.651 50.645 1.00 60.60 N
ATOM 4597 CA SER L 161 -68.234 -47.031 50.527 1.00 61.37 C
ATOM 4598 CB SER L 161 -69.273 -48.105 50.790 1.00 59.89 C
ATOM 4599 OG SER L 161 -69.082 -48.609 52.096 1.00 65.50 O
ATOM 4600 C SER L 161 -68.420 -45.825 51.508 1.00 59.91 C
ATOM 4601 O SER L 161 -67.830 -45.821 52.577 1.00 53.27 O
ATOM 4602 N GLY L 162 -69.224 -44.820 51.124 1.00 59.10 N
ATOM 4603 CA GLY L 162 -69.514 -43.618 51.958 1.00 52.66 C
ATOM 4604 C GLY L 162 -68.336 -42.658 52.118 1.00 53.69 C
ATOM 4605 O GLY L 162 -68.323 -41.763 52.958 1.00 49.01 O
ATOM 4606 N ASN L 163 -67.363 -42.836 51.253 1.00 51.81 N
ATOM 4607 CA ASN L 163 -66.006 -42.427 51.454 1.00 53.09 C
ATOM 4608 CB ASN L 163 -65.191 -43.745 51.392 1.00 55.19 C
ATOM 4609 CG ASN L 163 -64.181 -43.814 52.466 1.00 63.79 C
ATOM 4610 OD1 ASN L 163 -63.489 -44.829 52.656 1.00 66.35 O
ATOM 4611 ND2 ASN L 163 -64.086 -42.718 53.212 1.00 63.59 N
ATOM 4612 C ASN L 163 -65.454 -41.456 50.375 1.00 53.55 C
ATOM 4613 O ASN L 163 -64.450 -40.754 50.588 1.00 52.64 O
ATOM 4614 N SER L 164 -66.053 -41.485 49.190 1.00 51.22 N
ATOM 4615 CA SER L 164 -65.595 -40.696 48.077 1.00 53.11 C
ATOM 4616 CB SER L 164 -65.190 -41.620 46.927 1.00 52.74 C
ATOM 4617 OG SER L 164 -66.161 -42.614 46.689 1.00 48.56 O
ATOM 4618 C SER L 164 -66.660 -39.724 47.642 1.00 52.44 C
ATOM 4619 O SER L 164 -67.824 -39.793 48.088 1.00 50.96 O
ATOM 4620 N GLN L 165 -66.255 -38.791 46.792 1.00 51.58 N
ATOM 4621 CA GLN L 165 -67.208 -37.917 46.093 1.00 47.74 C
ATOM 4622 CB GLN L 165 -67.312 -36.571 46.825 1.00 44.75 C
ATOM 4623 CG GLN L 165 -68.028 -36.630 48.186 1.00 42.16 C
ATOM 4624 CD GLN L 165 -68.190 -35.239 48.830 1.00 46.92 C
ATOM 4625 OE1 GLN L 165 -67.197 -34.592 49.227 1.00 50.20 O

ATOM 4626 NE2 GLN L 165 -69.430 -34.759 48.915 1.00 42.44 N
ATOM 4627 C GLN L 165 -66.814 -37.737 44.609 1.00 50.14 C
ATOM 4628 O GLN L 165 -65.620 -37.724 44.250 1.00 52.99 O
ATOM 4629 N GLU L 166 -67.820 -37.621 43.742 1.00 54.13 N
ATOM 4630 CA GLU L 166 -67.601 -37.481 42.292 1.00 50.38 C
ATOM 4631 CB GLU L 166 -68.397 -38.515 41.499 1.00 56.28 C
ATOM 4632 CG GLU L 166 -67.986 -39.980 41.678 1.00 64.44 C
ATOM 4633 CD GLU L 166 -68.953 -40.928 40.964 1.00 75.24 C
ATOM 4634 OE1 GLU L 166 -69.979 -40.449 40.387 1.00 79.12 O
ATOM 4635 OE2 GLU L 166 -68.694 -42.155 40.971 1.00 75.18 O
ATOM 4636 C GLU L 166 -68.057 -36.120 41.841 1.00 43.98 C
ATOM 4637 O GLU L 166 -69.007 -35.580 42.347 1.00 43.02 O
ATOM 4638 N SER L 167 -67.393 -35.606 40.835 1.00 43.21 N
ATOM 4639 CA SER L 167 -67.820 -34.407 40.120 1.00 42.38 C
ATOM 4640 CB SER L 167 -66.913 -33.240 40.539 1.00 41.44 C
ATOM 4641 OG SER L 167 -67.357 -31.998 40.063 1.00 42.86 O
ATOM 4642 C SER L 167 -67.582 -34.737 38.655 1.00 38.99 C
ATOM 4643 O SER L 167 -66.626 -35.449 38.342 1.00 36.65 O
ATOM 4644 N VAL L 168 -68.401 -34.175 37.776 1.00 39.09 N
ATOM 4645 CA VAL L 168 -68.346 -34.418 36.343 1.00 38.51 C
ATOM 4646 CB VAL L 168 -69.591 -35.202 35.841 1.00 42.30 C
ATOM 4647 CG1 VAL L 168 -69.302 -35.803 34.487 1.00 45.61 C
ATOM 4648 CG2 VAL L 168 -69.954 -36.318 36.793 1.00 50.10 C
ATOM 4649 C VAL L 168 -68.378 -33.086 35.640 1.00 34.97 C
ATOM 4650 O VAL L 168 -69.163 -32.250 36.051 1.00 35.31 O
ATOM 4651 N THR L 169 -67.550 -32.882 34.603 1.00 30.68 N
ATOM 4652 CA THR L 169 -67.657 -31.669 33.803 1.00 33.59 C
ATOM 4653 CB THR L 169 -66.404 -31.375 32.969 1.00 35.48 C
ATOM 4654 OG1 THR L 169 -66.035 -32.512 32.173 1.00 36.64 O
ATOM 4655 CG2 THR L 169 -65.275 -31.038 33.858 1.00 42.90 C
ATOM 4656 C THR L 169 -68.846 -31.788 32.805 1.00 39.93 C
ATOM 4657 O THR L 169 -69.363 -32.893 32.536 1.00 40.36 O
ATOM 4658 N GLU L 170 -69.259 -30.625 32.321 1.00 37.12 N
ATOM 4659 CA GLU L 170 -70.094 -30.440 31.148 1.00 43.85 C
ATOM 4660 CB GLU L 170 -70.465 -28.924 31.043 1.00 41.52 C
ATOM 4661 CG GLU L 170 -71.403 -28.490 32.168 1.00 42.14 C
ATOM 4662 CD GLU L 170 -72.661 -29.347 32.157 1.00 43.03 C

ATOM 4663 OE1 GLU L 170 -73.381 -29.316 31.150 1.00 51.19 O
ATOM 4664 OE2 GLU L 170 -72.916 -30.098 33.096 1.00 52.22 O
ATOM 4665 C GLU L 170 -69.315 -30.837 29.900 1.00 41.62 C
ATOM 4666 O GLU L 170 -68.126 -30.983 29.994 1.00 40.02 O
ATOM 4667 N GLN L 171 -69.968 -30.950 28.737 1.00 42.03 N
ATOM 4668 CA GLN L 171 -69.274 -31.334 27.490 1.00 43.75 C
ATOM 4669 CB GLN L 171 -70.201 -31.466 26.241 1.00 42.85 C
ATOM 4670 CG GLN L 171 -71.004 -32.746 26.177 1.00 50.26 C
ATOM 4671 CD GLN L 171 -71.464 -33.103 24.766 1.00 49.45 C
ATOM 4672 OE1 GLN L 171 -72.124 -32.319 24.135 1.00 45.89 O
ATOM 4673 NE2 GLN L 171 -71.108 -34.292 24.283 1.00 46.16 N
ATOM 4674 C GLN L 171 -68.192 -30.350 27.118 1.00 43.07 C
ATOM 4675 O GLN L 171 -68.437 -29.156 27.030 1.00 42.47 O
ATOM 4676 N ASP L 172 -67.032 -30.899 26.796 1.00 47.50 N
ATOM 4677 CA ASP L 172 -65.910 -30.167 26.229 1.00 51.45 C
ATOM 4678 CB ASP L 172 -64.741 -31.177 26.077 1.00 58.09 C
ATOM 4679 CG ASP L 172 -63.422 -30.527 25.747 1.00 54.02 C
ATOM 4680 OD1 ASP L 172 -63.268 -30.006 24.629 1.00 63.60 O
ATOM 4681 OD2 ASP L 172 -62.523 -30.584 26.610 1.00 59.18 O
ATOM 4682 C ASP L 172 -66.288 -29.611 24.870 1.00 48.93 C
ATOM 4683 O ASP L 172 -66.729 -30.356 24.028 1.00 46.97 O
ATOM 4684 N SER L 173 -66.084 -28.317 24.635 1.00 59.97 N
ATOM 4685 CA SER L 173 -66.513 -27.694 23.360 1.00 66.25 C
ATOM 4686 CB SER L 173 -66.317 -26.178 23.379 1.00 66.47 C
ATOM 4687 OG SER L 173 -64.947 -25.899 23.552 1.00 72.96 O
ATOM 4688 C SER L 173 -65.789 -28.258 22.146 1.00 69.20 C
ATOM 4689 O SER L 173 -66.416 -28.371 21.097 1.00 70.98 O
ATOM 4690 N LYS L 174 -64.496 -28.607 22.289 1.00 66.63 N
ATOM 4691 CA LYS L 174 -63.678 -29.134 21.163 1.00 67.16 C
ATOM 4692 CB LYS L 174 -62.177 -28.824 21.335 1.00 74.16 C
ATOM 4693 CG LYS L 174 -61.810 -27.335 21.191 1.00 85.75 C
ATOM 4694 CD LYS L 174 -61.789 -26.803 19.741 1.00 83.61 C
ATOM 4695 CE LYS L 174 -60.393 -26.824 19.084 1.00 84.14 C
ATOM 4696 NZ LYS L 174 -60.241 -25.941 17.874 1.00 75.91 N
ATOM 4697 C LYS L 174 -63.872 -30.614 20.815 1.00 55.61 C
ATOM 4698 O LYS L 174 -63.925 -30.941 19.649 1.00 51.51 O
ATOM 4699 N ASP L 175 -64.004 -31.507 21.783 1.00 56.36 N

ATOM 4700 CA ASP L 175 -64.141 -32.938 21.440 1.00 51.46 C
ATOM 4701 CB ASP L 175 -62.878 -33.723 21.868 1.00 55.81 C
ATOM 4702 CG ASP L 175 -62.815 -34.043 23.370 1.00 55.51 C
ATOM 4703 OD1 ASP L 175 -63.834 -34.005 24.064 1.00 52.69 O
ATOM 4704 OD2 ASP L 175 -61.712 -34.397 23.856 1.00 64.61 O
ATOM 4705 C ASP L 175 -65.413 -33.604 21.944 1.00 52.38 C
ATOM 4706 O ASP L 175 -65.588 -34.821 21.767 1.00 51.83 O
ATOM 4707 N SER L 176 -66.277 -32.824 22.601 1.00 47.37 N
ATOM 4708 CA SER L 176 -67.582 -33.281 23.065 1.00 40.64 C
ATOM 4709 CB SER L 176 -68.478 -33.672 21.876 1.00 42.61 C
ATOM 4710 OG SER L 176 -68.339 -32.778 20.775 1.00 42.52 O
ATOM 4711 C SER L 176 -67.563 -34.401 24.086 1.00 41.53 C
ATOM 4712 O SER L 176 -68.565 -35.085 24.252 1.00 41.42 O
ATOM 4713 N THR L 177 -66.460 -34.582 24.806 1.00 44.39 N
ATOM 4714 CA THR L 177 -66.434 -35.585 25.885 1.00 45.11 C
ATOM 4715 CB THR L 177 -65.090 -36.289 25.950 1.00 45.70 C
ATOM 4716 OG1 THR L 177 -64.057 -35.293 26.064 1.00 47.75 O
ATOM 4717 CG2 THR L 177 -64.874 -37.101 24.658 1.00 47.44 C
ATOM 4718 C THR L 177 -66.759 -34.984 27.246 1.00 43.74 C
ATOM 4719 O THR L 177 -66.884 -33.765 27.394 1.00 38.79 O
ATOM 4720 N TYR L 178 -66.931 -35.892 28.200 1.00 41.29 N
ATOM 4721 CA TYR L 178 -67.072 -35.620 29.594 1.00 42.80 C
ATOM 4722 CB TYR L 178 -68.268 -36.381 30.146 1.00 41.17 C
ATOM 4723 CG TYR L 178 -69.523 -35.937 29.486 1.00 45.82 C
ATOM 4724 CD1 TYR L 178 -70.209 -34.809 29.925 1.00 42.36 C
ATOM 4725 CE1 TYR L 178 -71.348 -34.381 29.293 1.00 44.40 C
ATOM 4726 CZ TYR L 178 -71.818 -35.091 28.185 1.00 52.01 C
ATOM 4727 OH TYR L 178 -72.927 -34.710 27.474 1.00 50.17 O
ATOM 4728 CE2 TYR L 178 -71.144 -36.196 27.728 1.00 54.62 C
ATOM 4729 CD2 TYR L 178 -70.009 -36.620 28.386 1.00 52.30 C
ATOM 4730 C TYR L 178 -65.820 -36.090 30.329 1.00 43.47 C
ATOM 4731 O TYR L 178 -65.134 -36.979 29.867 1.00 42.32 O
ATOM 4732 N SER L 179 -65.560 -35.498 31.494 1.00 39.31 N
ATOM 4733 CA SER L 179 -64.526 -35.950 32.392 1.00 38.50 C
ATOM 4734 CB SER L 179 -63.337 -35.023 32.341 1.00 38.93 C
ATOM 4735 OG SER L 179 -62.516 -35.308 31.223 1.00 42.78 O
ATOM 4736 C SER L 179 -65.107 -36.025 33.790 1.00 40.94 C

ATOM 4737 O SER L 179 -66.072 -35.347 34.080 1.00 44.37 O
ATOM 4738 N LEU L 180 -64.486 -36.841 34.647 1.00 42.15 N
ATOM 4739 CA LEU L 180 -64.976 -37.117 36.001 1.00 43.56 C
ATOM 4740 CB LEU L 180 -65.841 -38.346 35.936 1.00 41.35 C
ATOM 4741 CG LEU L 180 -66.602 -38.867 37.127 1.00 45.79 C
ATOM 4742 CD1 LEU L 180 -67.863 -39.591 36.652 1.00 44.93 C
ATOM 4743 CD2 LEU L 180 -65.750 -39.803 37.991 1.00 49.02 C
ATOM 4744 C LEU L 180 -63.812 -37.345 36.981 1.00 49.27 C
ATOM 4745 O LEU L 180 -62.781 -37.908 36.619 1.00 54.50 O
ATOM 4746 N SER L 181 -63.983 -36.908 38.217 1.00 46.81 N
ATOM 4747 CA SER L 181 -63.018 -37.170 39.265 1.00 46.37 C
ATOM 4748 CB SER L 181 -62.409 -35.873 39.772 1.00 45.14 C
ATOM 4749 OG SER L 181 -63.412 -35.047 40.245 1.00 44.47 O
ATOM 4750 C SER L 181 -63.744 -37.824 40.406 1.00 44.73 C
ATOM 4751 O SER L 181 -64.826 -37.383 40.731 1.00 39.28 O
ATOM 4752 N SER L 182 -63.160 -38.872 40.985 1.00 42.28 N
ATOM 4753 CA SER L 182 -63.657 -39.445 42.240 1.00 42.75 C
ATOM 4754 CB SER L 182 -63.899 -40.948 42.145 1.00 43.71 C
ATOM 4755 OG SER L 182 -64.615 -41.426 43.275 1.00 48.34 O
ATOM 4756 C SER L 182 -62.599 -39.192 43.260 1.00 46.43 C
ATOM 4757 O SER L 182 -61.421 -39.468 43.017 1.00 52.67 O
ATOM 4758 N THR L 183 -63.004 -38.665 44.404 1.00 47.47 N
ATOM 4759 CA THR L 183 -62.045 -38.275 45.426 1.00 46.36 C
ATOM 4760 CB THR L 183 -62.123 -36.782 45.626 1.00 46.55 C
ATOM 4761 OG1 THR L 183 -61.749 -36.166 44.390 1.00 48.80 O
ATOM 4762 CG2 THR L 183 -61.190 -36.318 46.727 1.00 50.71 C
ATOM 4763 C THR L 183 -62.292 -39.081 46.702 1.00 43.55 C
ATOM 4764 O THR L 183 -63.374 -39.018 47.245 1.00 48.20 O
ATOM 4765 N LEU L 184 -61.322 -39.919 47.081 1.00 45.28 N
ATOM 4766 CA LEU L 184 -61.354 -40.694 48.329 1.00 48.74 C
ATOM 4767 CB LEU L 184 -60.590 -42.014 48.184 1.00 55.52 C
ATOM 4768 CG LEU L 184 -60.633 -42.971 49.390 1.00 53.90 C
ATOM 4769 CD1 LEU L 184 -62.021 -43.588 49.521 1.00 53.12 C
ATOM 4770 CD2 LEU L 184 -59.567 -44.045 49.223 1.00 56.77 C
ATOM 4771 C LEU L 184 -60.702 -39.865 49.403 1.00 46.11 C
ATOM 4772 O LEU L 184 -59.567 -39.459 49.238 1.00 51.80 O
ATOM 4773 N THR L 185 -61.443 -39.588 50.476 1.00 49.66 N

ATOM 4774 CA THR L 185 -61.004 -38.721 51.569 1.00 51.48 C
ATOM 4775 CB THR L 185 -62.068 -37.656 51.856 1.00 53.73 C
ATOM 4776 OG1 THR L 185 -62.107 -36.727 50.761 1.00 59.96 O
ATOM 4777 CG2 THR L 185 -61.760 -36.901 53.130 1.00 56.31 C
ATOM 4778 C THR L 185 -60.755 -39.577 52.810 1.00 54.31 C
ATOM 4779 O THR L 185 -61.581 -40.437 53.138 1.00 49.59 O
ATOM 4780 N LEU L 186 -59.613 -39.367 53.471 1.00 56.24 N
ATOM 4781 CA LEU L 186 -59.239 -40.148 54.686 1.00 58.03 C
ATOM 4782 CB LEU L 186 -58.476 -41.408 54.325 1.00 56.94 C
ATOM 4783 CG LEU L 186 -59.169 -42.523 53.550 1.00 66.34 C
ATOM 4784 CD1 LEU L 186 -58.114 -43.446 52.941 1.00 69.31 C
ATOM 4785 CD2 LEU L 186 -60.152 -43.315 54.417 1.00 69.38 C
ATOM 4786 C LEU L 186 -58.364 -39.359 55.635 1.00 56.46 C
ATOM 4787 O LEU L 186 -57.634 -38.441 55.221 1.00 57.26 O
ATOM 4788 N SER L 187 -58.417 -39.722 56.917 1.00 62.79 N
ATOM 4789 CA SER L 187 -57.472 -39.154 57.904 1.00 65.04 C
ATOM 4790 CB SER L 187 -57.844 -39.536 59.338 1.00 63.37 C
ATOM 4791 OG SER L 187 -57.832 -40.943 59.481 1.00 67.77 O
ATOM 4792 C SER L 187 -56.070 -39.671 57.563 1.00 59.22 C
ATOM 4793 O SER L 187 -55.927 -40.769 56.996 1.00 53.24 O
ATOM 4794 N LYS L 188 -55.059 -38.864 57.870 1.00 62.41 N
ATOM 4795 CA LYS L 188 -53.657 -39.270 57.722 1.00 72.01 C
ATOM 4796 CB LYS L 188 -52.728 -38.254 58.389 1.00 78.73 C
ATOM 4797 CG LYS L 188 -51.242 -38.464 58.134 1.00 80.46 C
ATOM 4798 CD LYS L 188 -50.441 -37.524 59.028 1.00 88.14 C
ATOM 4799 CE LYS L 188 -48.963 -37.447 58.663 1.00 97.18 C
ATOM 4800 NZ LYS L 188 -48.181 -38.521 59.340 1.00101.89 N
ATOM 4801 C LYS L 188 -53.427 -40.644 58.332 1.00 67.92 C
ATOM 4802 O LYS L 188 -52.832 -41.527 57.697 1.00 67.17 O
ATOM 4803 N ALA L 189 -53.935 -40.829 59.545 1.00 65.92 N
ATOM 4804 CA ALA L 189 -53.747 -42.089 60.261 1.00 75.34 C
ATOM 4805 CB ALA L 189 -54.427 -42.034 61.635 1.00 77.71 C
ATOM 4806 C ALA L 189 -54.232 -43.285 59.427 1.00 72.53 C
ATOM 4807 O ALA L 189 -53.460 -44.219 59.164 1.00 75.74 O
ATOM 4808 N ASP L 190 -55.489 -43.234 58.979 1.00 79.17 N
ATOM 4809 CA ASP L 190 -56.108 -44.363 58.232 1.00 77.86 C
ATOM 4810 CB ASP L 190 -57.609 -44.127 57.980 1.00 83.43 C

ATOM 4811 CG ASP L 190 -58.487 -44.782 59.027 1.00 81.74 C
ATOM 4812 OD1 ASP L 190 -58.686 -46.022 58.934 1.00 83.54 O
ATOM 4813 OD2 ASP L 190 -58.977 -44.052 59.919 1.00 68.42 O
ATOM 4814 C ASP L 190 -55.419 -44.676 56.908 1.00 76.05 C
ATOM 4815 O ASP L 190 -55.336 -45.851 56.499 1.00 77.76 O
ATOM 4816 N TYR L 191 -54.940 -43.625 56.244 1.00 70.30 N
ATOM 4817 CA TYR L 191 -54.170 -43.773 55.011 1.00 70.98 C
ATOM 4818 CB TYR L 191 -53.817 -42.390 54.442 1.00 66.03 C
ATOM 4819 CG TYR L 191 -52.951 -42.405 53.206 1.00 64.28 C
ATOM 4820 CD1 TYR L 191 -53.401 -42.967 52.012 1.00 61.70 C
ATOM 4821 CE1 TYR L 191 -52.609 -42.955 50.867 1.00 63.83 C
ATOM 4822 CZ TYR L 191 -51.332 -42.378 50.920 1.00 66.29 C
ATOM 4823 OH TYR L 191 -50.490 -42.345 49.835 1.00 69.47 O
ATOM 4824 CE2 TYR L 191 -50.870 -41.828 52.096 1.00 67.76 C
ATOM 4825 CD2 TYR L 191 -51.678 -41.842 53.228 1.00 68.93 C
ATOM 4826 C TYR L 191 -52.905 -44.605 55.258 1.00 72.30 C
ATOM 4827 O TYR L 191 -52.589 -45.516 54.490 1.00 74.30 O
ATOM 4828 N GLU L 192 -52.206 -44.296 56.350 1.00 80.51 N
ATOM 4829 CA GLU L 192 -50.976 -45.015 56.730 1.00 85.63 C
ATOM 4830 CB GLU L 192 -50.252 -44.303 57.879 1.00 88.13 C
ATOM 4831 CG GLU L 192 -49.480 -43.058 57.441 1.00 88.40 C
ATOM 4832 CD GLU L 192 -49.161 -42.112 58.591 1.00 95.02 C
ATOM 4833 OE1 GLU L 192 -49.227 -42.521 59.784 1.00 91.56 O
ATOM 4834 OE2 GLU L 192 -48.840 -40.941 58.294 1.00 90.25 O
ATOM 4835 C GLU L 192 -51.187 -46.498 57.059 1.00 81.59 C
ATOM 4836 O GLU L 192 -50.295 -47.305 56.794 1.00 74.50 O
ATOM 4837 N LYS L 193 -52.357 -46.864 57.585 1.00 75.84 N
ATOM 4838 CA LYS L 193 -52.640 -48.292 57.863 1.00 82.56 C
ATOM 4839 CB LYS L 193 -53.955 -48.470 58.632 1.00 86.48 C
ATOM 4840 CG LYS L 193 -53.847 -48.140 60.120 1.00 94.12 C
ATOM 4841 CD LYS L 193 -55.058 -48.628 60.915 1.00 97.01 C
ATOM 4842 CE LYS L 193 -56.363 -48.031 60.400 1.00 97.60 C
ATOM 4843 NZ LYS L 193 -57.318 -47.691 61.490 1.00 98.80 N
ATOM 4844 C LYS L 193 -52.627 -49.228 56.642 1.00 82.79 C
ATOM 4845 O LYS L 193 -52.419 -50.438 56.789 1.00 76.83 O
ATOM 4846 N HIS L 194 -52.831 -48.690 55.442 1.00 87.18 N
ATOM 4847 CA HIS L 194 -52.945 -49.533 54.249 1.00 78.77 C

ATOM 4848 CB HIS L 194 -54.352 -49.419 53.695 1.00 77.90 C
ATOM 4849 CG HIS L 194 -55.437 -49.573 54.721 1.00 81.06 C
ATOM 4850 ND1 HIS L 194 -55.981 -48.496 55.394 1.00 85.38 N
ATOM 4851 CE1 HIS L 194 -56.935 -48.921 56.205 1.00 94.16 C
ATOM 4852 NE2 HIS L 194 -57.037 -50.234 56.076 1.00 95.04 N
ATOM 4853 CD2 HIS L 194 -56.116 -50.665 55.151 1.00 89.86 C
ATOM 4854 C HIS L 194 -51.890 -49.163 53.196 1.00 75.19 C
ATOM 4855 O HIS L 194 -51.241 -48.122 53.298 1.00 69.20 O
ATOM 4856 N LYS L 195 -51.717 -50.027 52.198 1.00 71.04 N
ATOM 4857 CA LYS L 195 -50.610 -49.901 51.250 1.00 72.57 C
ATOM 4858 CB LYS L 195 -49.745 -51.173 51.301 1.00 80.06 C
ATOM 4859 CG LYS L 195 -48.296 -50.954 50.845 1.00 89.61 C
ATOM 4860 CD LYS L 195 -47.752 -52.105 50.001 1.00 94.41 C
ATOM 4861 CE LYS L 195 -47.655 -53.420 50.770 1.00 95.84 C
ATOM 4862 NZ LYS L 195 -47.290 -54.528 49.847 1.00 91.36 N
ATOM 4863 C LYS L 195 -51.043 -49.639 49.791 1.00 75.30 C
ATOM 4864 O LYS L 195 -50.503 -48.718 49.112 1.00 66.52 O
ATOM 4865 N VAL L 196 -51.987 -50.453 49.313 1.00 66.64 N
ATOM 4866 CA VAL L 196 -52.316 -50.501 47.893 1.00 73.72 C
ATOM 4867 CB VAL L 196 -52.332 -51.950 47.316 1.00 81.60 C
ATOM 4868 CG1 VAL L 196 -52.904 -52.969 48.295 1.00 92.56 C
ATOM 4869 CG2 VAL L 196 -53.070 -52.017 45.977 1.00 82.95 C
ATOM 4870 C VAL L 196 -53.632 -49.743 47.673 1.00 74.56 C
ATOM 4871 O VAL L 196 -54.683 -50.205 48.099 1.00 72.57 O
ATOM 4872 N TYR L 197 -53.558 -48.565 47.044 1.00 66.06 N
ATOM 4873 CA TYR L 197 -54.764 -47.791 46.707 1.00 67.46 C
ATOM 4874 CB TYR L 197 -54.597 -46.348 47.127 1.00 65.20 C
ATOM 4875 CG TYR L 197 -54.602 -46.206 48.622 1.00 67.15 C
ATOM 4876 CD1 TYR L 197 -53.452 -46.466 49.366 1.00 73.08 C
ATOM 4877 CE1 TYR L 197 -53.446 -46.331 50.745 1.00 71.94 C
ATOM 4878 CZ TYR L 197 -54.602 -45.952 51.390 1.00 69.08 C
ATOM 4879 OH TYR L 197 -54.597 -45.810 52.747 1.00 68.79 O
ATOM 4880 CE2 TYR L 197 -55.752 -45.697 50.672 1.00 68.72 C
ATOM 4881 CD2 TYR L 197 -55.747 -45.834 49.297 1.00 63.49 C
ATOM 4882 C TYR L 197 -55.116 -47.892 45.227 1.00 61.66 C
ATOM 4883 O TYR L 197 -54.300 -47.531 44.366 1.00 62.35 O
ATOM 4884 N ALA L 198 -56.327 -48.393 44.971 1.00 54.90 N

ATOM 4885 CA ALA L 198 -56.808 -48.718 43.640 1.00 55.52 C
ATOM 4886 CB ALA L 198 -56.880 -50.217 43.481 1.00 54.13 C
ATOM 4887 C ALA L 198 -58.194 -48.150 43.387 1.00 59.89 C
ATOM 4888 O ALA L 198 -59.124 -48.342 44.227 1.00 51.93 O
ATOM 4889 N CYS L 199 -58.343 -47.478 42.236 1.00 52.94 N
ATOM 4890 CA CYS L 199 -59.662 -47.155 41.698 1.00 54.40 C
ATOM 4891 CB CYS L 199 -59.840 -45.632 41.478 1.00 53.54 C
ATOM 4892 SG CYS L 199 -58.970 -45.003 40.043 1.00 61.56 S
ATOM 4893 C CYS L 199 -59.937 -48.012 40.424 1.00 54.90 C
ATOM 4894 O CYS L 199 -59.074 -48.179 39.557 1.00 50.63 O
ATOM 4895 N GLU L 200 -61.147 -48.567 40.366 1.00 54.07 N
ATOM 4896 CA GLU L 200 -61.616 -49.429 39.296 1.00 59.45 C
ATOM 4897 CB GLU L 200 -62.203 -50.728 39.889 1.00 65.89 C
ATOM 4898 CG GLU L 200 -62.526 -51.801 38.842 1.00 74.41 C
ATOM 4899 CD GLU L 200 -62.988 -53.128 39.434 1.00 78.61 C
ATOM 4900 OE1 GLU L 200 -64.114 -53.547 39.110 1.00 78.43 O
ATOM 4901 OE2 GLU L 200 -62.238 -53.749 40.224 1.00 86.00 O
ATOM 4902 C GLU L 200 -62.716 -48.706 38.535 1.00 58.06 C
ATOM 4903 O GLU L 200 -63.630 -48.180 39.160 1.00 53.21 O
ATOM 4904 N VAL L 201 -62.647 -48.739 37.199 1.00 59.33 N
ATOM 4905 CA VAL L 201 -63.542 -47.964 36.330 1.00 59.15 C
ATOM 4906 CB VAL L 201 -62.770 -46.922 35.497 1.00 54.53 C
ATOM 4907 CG1 VAL L 201 -63.714 -46.186 34.541 1.00 55.82 C
ATOM 4908 CG2 VAL L 201 -62.054 -45.930 36.402 1.00 57.48 C
ATOM 4909 C VAL L 201 -64.293 -48.837 35.339 1.00 59.50 C
ATOM 4910 O VAL L 201 -63.671 -49.559 34.574 1.00 61.48 O
ATOM 4911 N THR L 202 -65.615 -48.702 35.308 1.00 57.97 N
ATOM 4912 CA THR L 202 -66.428 -49.302 34.263 1.00 62.16 C
ATOM 4913 CB THR L 202 -67.396 -50.274 34.913 1.00 64.35 C
ATOM 4914 OG1 THR L 202 -66.621 -51.206 35.656 1.00 74.30 O
ATOM 4915 CG2 THR L 202 -68.225 -51.038 33.862 1.00 69.21 C
ATOM 4916 C THR L 202 -67.196 -48.295 33.376 1.00 60.61 C
ATOM 4917 O THR L 202 -67.798 -47.360 33.854 1.00 67.99 O
ATOM 4918 N HIS L 203 -67.191 -48.529 32.073 1.00 62.76 N
ATOM 4919 CA HIS L 203 -67.764 -47.608 31.104 1.00 58.43 C
ATOM 4920 CB HIS L 203 -66.767 -46.483 30.812 1.00 56.83 C
ATOM 4921 CG HIS L 203 -67.182 -45.545 29.707 1.00 55.15 C

ATOM 4922 ND1 HIS L 203 -68.251 -44.681 29.811 1.00 59.41 N
ATOM 4923 CE1 HIS L 203 -68.346 -43.965 28.707 1.00 61.20 C
ATOM 4924 NE2 HIS L 203 -67.372 -44.323 27.894 1.00 62.92 N
ATOM 4925 CD2 HIS L 203 -66.625 -45.301 28.502 1.00 57.22 C
ATOM 4926 C HIS L 203 -68.078 -48.392 29.835 1.00 64.55 C
ATOM 4927 O HIS L 203 -67.337 -49.303 29.482 1.00 66.00 O
ATOM 4928 N GLN L 204 -69.161 -48.015 29.156 1.00 72.78 N
ATOM 4929 CA GLN L 204 -69.633 -48.692 27.946 1.00 72.59 C
ATOM 4930 CB GLN L 204 -70.747 -47.864 27.285 1.00 80.11 C
ATOM 4931 CG GLN L 204 -71.525 -48.528 26.144 1.00 85.61 C
ATOM 4932 CD GLN L 204 -72.453 -47.547 25.425 1.00 83.86 C
ATOM 4933 OE1 GLN L 204 -73.043 -46.658 26.053 1.00 89.09 O
ATOM 4934 NE2 GLN L 204 -72.581 -47.698 24.112 1.00 72.72 N
ATOM 4935 C GLN L 204 -68.495 -48.971 26.955 1.00 69.21 C
ATOM 4936 O GLN L 204 -68.446 -50.034 26.380 1.00 69.71 O
ATOM 4937 N GLY L 205 -67.556 -48.047 26.790 1.00 65.28 N
ATOM 4938 CA GLY L 205 -66.461 -48.220 25.832 1.00 60.62 C
ATOM 4939 C GLY L 205 -65.265 -49.060 26.274 1.00 63.68 C
ATOM 4940 O GLY L 205 -64.196 -48.967 25.662 1.00 57.67 O
ATOM 4941 N LEU L 206 -65.428 -49.872 27.321 1.00 63.81 N
ATOM 4942 CA LEU L 206 -64.333 -50.643 27.907 1.00 62.51 C
ATOM 4943 CB LEU L 206 -64.007 -50.096 29.295 1.00 60.26 C
ATOM 4944 CG LEU L 206 -63.128 -48.881 29.488 1.00 56.80 C
ATOM 4945 CD1 LEU L 206 -62.994 -48.688 30.982 1.00 52.81 C
ATOM 4946 CD2 LEU L 206 -61.767 -49.019 28.805 1.00 60.67 C
ATOM 4947 C LEU L 206 -64.730 -52.101 28.102 1.00 63.59 C
ATOM 4948 O LEU L 206 -65.652 -52.364 28.896 1.00 52.35 O
ATOM 4949 N SER L 207 -63.976 -53.022 27.470 1.00 68.89 N
ATOM 4950 CA SER L 207 -64.273 -54.484 27.467 1.00 72.65 C
ATOM 4951 CB SER L 207 -63.145 -55.291 26.817 1.00 73.89 C
ATOM 4952 OG SER L 207 -62.350 -54.492 25.969 1.00 76.49 O
ATOM 4953 C SER L 207 -64.479 -55.044 28.862 1.00 74.77 C
ATOM 4954 O SER L 207 -65.387 -55.854 29.089 1.00 63.74 O
ATOM 4955 N SER L 208 -63.612 -54.610 29.779 1.00 84.53 N
ATOM 4956 CA SER L 208 -63.685 -54.975 31.210 1.00 87.13 C
ATOM 4957 CB SER L 208 -62.866 -56.255 31.483 1.00 81.94 C
ATOM 4958 OG SER L 208 -61.656 -56.257 30.738 1.00 74.07 O

ATOM 4959 C SER L 208 -63.169 -53.808 32.075 1.00 82.28 C
ATOM 4960 O SER L 208 -62.507 -52.902 31.559 1.00 66.79 O
ATOM 4961 N PRO L 209 -63.458 -53.835 33.393 1.00 80.24 N
ATOM 4962 CA PRO L 209 -62.962 -52.776 34.270 1.00 78.14 C
ATOM 4963 CB PRO L 209 -63.262 -53.324 35.661 1.00 81.14 C
ATOM 4964 CG PRO L 209 -64.528 -54.090 35.468 1.00 80.28 C
ATOM 4965 CD PRO L 209 -64.397 -54.725 34.105 1.00 81.56 C
ATOM 4966 C PRO L 209 -61.477 -52.489 34.100 1.00 66.44 C
ATOM 4967 O PRO L 209 -60.727 -53.410 33.862 1.00 66.67 O
ATOM 4968 N VAL L 210 -61.101 -51.210 34.148 1.00 60.90 N
ATOM 4969 CA VAL L 210 -59.706 -50.775 34.088 1.00 57.69 C
ATOM 4970 CB VAL L 210 -59.413 -49.737 32.963 1.00 64.01 C
ATOM 4971 CG1 VAL L 210 -60.272 -48.503 33.085 1.00 72.79 C
ATOM 4972 CG2 VAL L 210 -57.953 -49.307 32.953 1.00 64.05 C
ATOM 4973 C VAL L 210 -59.361 -50.282 35.486 1.00 58.09 C
ATOM 4974 O VAL L 210 -60.139 -49.568 36.113 1.00 59.26 O
ATOM 4975 N THR L 211 -58.222 -50.733 35.998 1.00 56.25 N
ATOM 4976 CA THR L 211 -57.840 -50.461 37.381 1.00 59.26 C
ATOM 4977 CB THR L 211 -57.724 -51.761 38.225 1.00 60.26 C
ATOM 4978 OG1 THR L 211 -58.866 -52.609 37.998 1.00 61.96 O
ATOM 4979 CG2 THR L 211 -57.672 -51.447 39.701 1.00 63.52 C
ATOM 4980 C THR L 211 -56.529 -49.718 37.322 1.00 57.99 C
ATOM 4981 O THR L 211 -55.664 -50.042 36.515 1.00 61.42 O
ATOM 4982 N LYS L 212 -56.415 -48.662 38.107 1.00 60.37 N
ATOM 4983 CA LYS L 212 -55.151 -47.959 38.289 1.00 58.24 C
ATOM 4984 CB LYS L 212 -55.229 -46.525 37.805 1.00 61.48 C
ATOM 4985 CG LYS L 212 -55.361 -46.389 36.296 1.00 68.88 C
ATOM 4986 CD LYS L 212 -54.133 -46.860 35.518 1.00 70.48 C
ATOM 4987 CE LYS L 212 -54.154 -46.280 34.104 1.00 72.27 C
ATOM 4988 NZ LYS L 212 -53.423 -47.027 33.046 1.00 70.05 N
ATOM 4989 C LYS L 212 -54.871 -48.000 39.773 1.00 58.15 C
ATOM 4990 O LYS L 212 -55.809 -48.057 40.561 1.00 60.34 O
ATOM 4991 N SER L 213 -53.592 -48.012 40.147 1.00 57.33 N
ATOM 4992 CA SER L 213 -53.208 -48.142 41.549 1.00 60.16 C
ATOM 4993 CB SER L 213 -53.325 -49.600 42.005 1.00 60.64 C
ATOM 4994 OG SER L 213 -52.805 -50.478 41.021 1.00 67.30 O
ATOM 4995 C SER L 213 -51.831 -47.601 41.865 1.00 58.37 C

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ATOM   4996  O   SER L 213     -51.035 -47.291  40.972  1.00 56.38           O
ATOM   4997  N   PHE L 214     -51.585 -47.428  43.153  1.00 55.97           N
ATOM   4998  CA  PHE L 214     -50.223 -47.204  43.625  1.00 64.93           C
ATOM   4999  CB  PHE L 214     -49.919 -45.707  43.689  1.00 64.22           C
ATOM   5000  CG  PHE L 214     -50.738 -44.958  44.709  1.00 68.93           C
ATOM   5001  CD1 PHE L 214     -51.990 -44.440  44.379  1.00 68.75           C
ATOM   5002  CE1 PHE L 214     -52.739 -43.746  45.314  1.00 67.57           C
ATOM   5003  CZ  PHE L 214     -52.250 -43.556  46.589  1.00 67.43           C
ATOM   5004  CE2 PHE L 214     -51.013 -44.077  46.934  1.00 72.00           C
ATOM   5005  CD2 PHE L 214     -50.264 -44.770  45.995  1.00 67.75           C
ATOM   5006  C   PHE L 214     -49.982 -47.878  44.977  1.00 70.79           C
ATOM   5007  O   PHE L 214     -50.906 -48.455  45.558  1.00 67.88           O
ATOM   5008  N   ASN L 215     -48.730 -47.824  45.443  1.00 83.64           N
ATOM   5009  CA  ASN L 215     -48.352 -48.193  46.823  1.00 83.21           C
ATOM   5010  CB  ASN L 215     -47.324 -49.312  46.825  1.00 86.22           C
ATOM   5011  CG  ASN L 215     -47.913 -50.639  46.442  1.00 89.25           C
ATOM   5012  OD1 ASN L 215     -47.333 -51.363  45.644  1.00 91.43           O
ATOM   5013  ND2 ASN L 215     -49.070 -50.971  47.010  1.00 94.89           N
ATOM   5014  C   ASN L 215     -47.740 -47.006  47.543  1.00 80.30           C
ATOM   5015  O   ASN L 215     -47.014 -46.224  46.934  1.00 81.64           O
ATOM   5016  N   ARG L 216     -48.000 -46.894  48.843  1.00 83.90           N
ATOM   5017  CA  ARG L 216     -47.331 -45.874  49.668  1.00 85.85           C
ATOM   5018  CB  ARG L 216     -47.931 -45.883  51.053  1.00 88.90           C
ATOM   5019  CG  ARG L 216     -49.420 -45.571  51.121  1.00 79.96           C
ATOM   5020  CD  ARG L 216     -49.892 -45.392  52.556  1.00 77.88           C
ATOM   5021  NE  ARG L 216     -48.835 -44.971  53.481  1.00 87.55           N
ATOM   5022  CZ  ARG L 216     -48.053 -45.782  54.216  1.00 90.47           C
ATOM   5023  NH1 ARG L 216     -48.167 -47.126  54.167  1.00 80.46           N
ATOM   5024  NH2 ARG L 216     -47.127 -45.232  55.009  1.00 80.63           N
ATOM   5025  C   ARG L 216     -45.795 -46.051  49.805  1.00 80.37           C
ATOM   5026  O   ARG L 216     -45.000 -45.248  49.284  1.00 76.27           O
TER    5027      ARG L 216
ATOM   5028  N   ASP M   1     -28.552  -1.905  29.724  1.00 80.99           N
ATOM   5029  CA  ASP M   1     -29.504  -1.273  28.758  1.00 82.05           C
ATOM   5030  CB  ASP M   1     -30.329  -0.147  29.407  1.00 81.93           C
ATOM   5031  CG  ASP M   1     -31.615  -0.643  30.065  1.00 83.35           C
ATOM   5032  OD1 ASP M   1     -31.574  -1.672  30.777  1.00 82.41           O
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ATOM 5033 OD2 ASP M 1 -32.673 0.014 29.885 1.00 78.97 O
ATOM 5034 C ASP M 1 -28.744 -0.701 27.570 1.00 83.93 C
ATOM 5035 O ASP M 1 -27.525 -0.479 27.634 1.00 84.47 O
ATOM 5036 N ILE M 2 -29.487 -0.475 26.492 1.00 77.07 N
ATOM 5037 CA ILE M 2 -28.980 0.209 25.319 1.00 69.20 C
ATOM 5038 CB ILE M 2 -29.115 -0.672 24.067 1.00 66.17 C
ATOM 5039 CG1 ILE M 2 -28.021 -1.728 24.109 1.00 63.72 C
ATOM 5040 CD1 ILE M 2 -28.182 -2.832 23.100 1.00 69.97 C
ATOM 5041 CG2 ILE M 2 -28.975 0.148 22.788 1.00 71.03 C
ATOM 5042 C ILE M 2 -29.709 1.524 25.177 1.00 62.90 C
ATOM 5043 O ILE M 2 -30.895 1.601 25.408 1.00 69.43 O
ATOM 5044 N GLN M 3 -28.964 2.563 24.832 1.00 65.97 N
ATOM 5045 CA GLN M 3 -29.533 3.866 24.587 1.00 72.05 C
ATOM 5046 CB GLN M 3 -28.843 4.938 25.452 1.00 82.93 C
ATOM 5047 CG GLN M 3 -29.439 5.069 26.854 1.00 99.62 C
ATOM 5048 CD GLN M 3 -30.943 5.365 26.826 1.00116.38 C
ATOM 5049 OE1 GLN M 3 -31.766 4.576 27.313 1.00117.33 O
ATOM 5050 NE2 GLN M 3 -31.306 6.487 26.210 1.00127.39 N
ATOM 5051 C GLN M 3 -29.431 4.201 23.105 1.00 68.62 C
ATOM 5052 O GLN M 3 -28.410 3.945 22.460 1.00 61.26 O
ATOM 5053 N LEU M 4 -30.516 4.761 22.583 1.00 60.13 N
ATOM 5054 CA LEU M 4 -30.593 5.171 21.213 1.00 64.14 C
ATOM 5055 CB LEU M 4 -31.764 4.457 20.496 1.00 62.82 C
ATOM 5056 CG LEU M 4 -31.748 2.921 20.389 1.00 59.30 C
ATOM 5057 CD1 LEU M 4 -32.820 2.417 19.429 1.00 62.19 C
ATOM 5058 CD2 LEU M 4 -30.399 2.410 19.932 1.00 60.72 C
ATOM 5059 C LEU M 4 -30.799 6.672 21.247 1.00 65.16 C
ATOM 5060 O LEU M 4 -31.805 7.138 21.787 1.00 67.36 O
ATOM 5061 N THR M 5 -29.852 7.421 20.666 1.00 65.74 N
ATOM 5062 CA THR M 5 -29.928 8.887 20.622 1.00 60.99 C
ATOM 5063 CB THR M 5 -28.863 9.584 21.559 1.00 63.84 C
ATOM 5064 OG1 THR M 5 -28.140 10.591 20.842 1.00 61.82 O
ATOM 5065 CG2 THR M 5 -27.867 8.575 22.242 1.00 63.98 C
ATOM 5066 C THR M 5 -30.003 9.431 19.161 1.00 58.71 C
ATOM 5067 O THR M 5 -29.069 9.361 18.374 1.00 57.12 O
ATOM 5068 N GLN M 6 -31.167 9.957 18.827 1.00 54.86 N
ATOM 5069 CA GLN M 6 -31.428 10.560 17.540 1.00 59.46 C

ATOM 5070 CB GLN M 6 -32.949 10.579 17.284 1.00 57.77 C
ATOM 5071 CG GLN M 6 -33.556 9.165 17.294 1.00 56.16 C
ATOM 5072 CD GLN M 6 -35.075 9.141 17.265 1.00 55.14 C
ATOM 5073 OE1 GLN M 6 -35.705 8.338 17.966 1.00 50.66 O
ATOM 5074 NE2 GLN M 6 -35.668 10.017 16.469 1.00 45.64 N
ATOM 5075 C GLN M 6 -30.826 11.966 17.374 1.00 64.18 C
ATOM 5076 O GLN M 6 -30.641 12.692 18.352 1.00 66.22 O
ATOM 5077 N SER M 7 -30.495 12.319 16.131 1.00 64.54 N
ATOM 5078 CA SER M 7 -30.131 13.684 15.751 1.00 64.63 C
ATOM 5079 CB SER M 7 -28.612 13.851 15.626 1.00 60.87 C
ATOM 5080 OG SER M 7 -27.921 13.224 16.680 1.00 64.36 O
ATOM 5081 C SER M 7 -30.777 14.001 14.385 1.00 69.31 C
ATOM 5082 O SER M 7 -30.659 13.195 13.465 1.00 67.69 O
ATOM 5083 N PRO M 8 -31.446 15.143 14.227 1.00 72.79 N
ATOM 5084 CA PRO M 8 -31.709 16.091 15.308 1.00 72.55 C
ATOM 5085 CB PRO M 8 -31.986 17.408 14.558 1.00 66.15 C
ATOM 5086 CG PRO M 8 -32.521 16.979 13.238 1.00 73.03 C
ATOM 5087 CD PRO M 8 -31.798 15.702 12.905 1.00 71.39 C
ATOM 5088 C PRO M 8 -32.904 15.646 16.157 1.00 72.00 C
ATOM 5089 O PRO M 8 -33.515 14.593 15.888 1.00 69.20 O
ATOM 5090 N SER M 9 -33.199 16.436 17.185 1.00 71.42 N
ATOM 5091 CA SER M 9 -34.397 16.262 18.000 1.00 70.69 C
ATOM 5092 CB SER M 9 -34.238 16.922 19.372 1.00 75.86 C
ATOM 5093 OG SER M 9 -33.145 16.376 20.082 1.00 69.92 O
ATOM 5094 C SER M 9 -35.598 16.864 17.316 1.00 69.63 C
ATOM 5095 O SER M 9 -36.725 16.367 17.488 1.00 67.39 O
ATOM 5096 N SER M 10 -35.396 17.966 16.593 1.00 64.46 N
ATOM 5097 CA SER M 10 -36.469 18.500 15.745 1.00 69.85 C
ATOM 5098 CB SER M 10 -37.285 19.589 16.453 1.00 70.53 C
ATOM 5099 OG SER M 10 -36.518 20.758 16.668 1.00 75.86 O
ATOM 5100 C SER M 10 -35.883 19.019 14.456 1.00 72.86 C
ATOM 5101 O SER M 10 -34.670 19.142 14.340 1.00 66.71 O
ATOM 5102 N LEU M 11 -36.746 19.286 13.476 1.00 74.12 N
ATOM 5103 CA LEU M 11 -36.299 19.891 12.205 1.00 75.62 C
ATOM 5104 CB LEU M 11 -35.404 18.950 11.368 1.00 71.19 C
ATOM 5105 CG LEU M 11 -36.111 17.811 10.614 1.00 68.55 C
ATOM 5106 CD1 LEU M 11 -36.334 18.185 9.160 1.00 70.13 C

ATOM 5107 CD2 LEU M 11 -35.306 16.527 10.668 1.00 68.94 C
ATOM 5108 C LEU M 11 -37.491 20.326 11.388 1.00 75.96 C
ATOM 5109 O LEU M 11 -38.589 19.742 11.510 1.00 73.28 O
ATOM 5110 N SER M 12 -37.234 21.320 10.531 1.00 76.11 N
ATOM 5111 CA SER M 12 -38.234 21.918 9.647 1.00 70.40 C
ATOM 5112 CB SER M 12 -38.519 23.362 10.089 1.00 70.37 C
ATOM 5113 OG SER M 12 -39.916 23.621 10.149 1.00 69.93 O
ATOM 5114 C SER M 12 -37.704 21.885 8.206 1.00 65.19 C
ATOM 5115 O SER M 12 -36.517 22.088 7.978 1.00 67.91 O
ATOM 5116 N ALA M 13 -38.587 21.619 7.243 1.00 70.19 N
ATOM 5117 CA ALA M 13 -38.208 21.421 5.812 1.00 65.48 C
ATOM 5118 CB ALA M 13 -37.420 20.130 5.625 1.00 69.48 C
ATOM 5119 C ALA M 13 -39.429 21.389 4.918 1.00 58.97 C
ATOM 5120 O ALA M 13 -40.520 20.959 5.336 1.00 62.43 O
ATOM 5121 N SER M 14 -39.253 21.858 3.690 1.00 63.45 N
ATOM 5122 CA SER M 14 -40.372 22.036 2.750 1.00 64.16 C
ATOM 5123 CB SER M 14 -39.995 23.047 1.670 1.00 65.46 C
ATOM 5124 OG SER M 14 -38.584 23.199 1.659 1.00 72.20 O
ATOM 5125 C SER M 14 -40.830 20.729 2.114 1.00 61.45 C
ATOM 5126 O SER M 14 -40.034 19.791 1.948 1.00 56.22 O
ATOM 5127 N VAL M 15 -42.133 20.676 1.803 1.00 61.28 N
ATOM 5128 CA VAL M 15 -42.688 19.689 0.886 1.00 60.93 C
ATOM 5129 CB VAL M 15 -44.036 20.161 0.272 1.00 70.82 C
ATOM 5130 CG1 VAL M 15 -44.592 19.139 -0.727 1.00 71.05 C
ATOM 5131 CG2 VAL M 15 -45.058 20.423 1.379 1.00 80.02 C
ATOM 5132 C VAL M 15 -41.639 19.477 -0.222 1.00 64.55 C
ATOM 5133 O VAL M 15 -41.071 20.445 -0.762 1.00 53.14 O
ATOM 5134 N GLY M 16 -41.318 18.211 -0.484 1.00 67.02 N
ATOM 5135 CA GLY M 16 -40.421 17.833 -1.580 1.00 61.33 C
ATOM 5136 C GLY M 16 -38.949 17.729 -1.240 1.00 55.70 C
ATOM 5137 O GLY M 16 -38.165 17.380 -2.113 1.00 56.68 O
ATOM 5138 N ASP M 17 -38.565 18.029 -0.000 1.00 53.07 N
ATOM 5139 CA ASP M 17 -37.165 18.017 0.387 1.00 58.64 C
ATOM 5140 CB ASP M 17 -36.862 18.938 1.598 1.00 69.94 C
ATOM 5141 CG ASP M 17 -36.944 20.457 1.290 1.00 74.95 C
ATOM 5142 OD1 ASP M 17 -37.088 20.873 0.119 1.00 78.51 O
ATOM 5143 OD2 ASP M 17 -36.835 21.246 2.270 1.00 79.55 O

ATOM 5144 C ASP M 17 -36.780 16.602 0.796 1.00 63.53 C
ATOM 5145 O ASP M 17 -37.621 15.810 1.317 1.00 53.60 O
ATOM 5146 N ARG M 18 -35.492 16.314 0.594 1.00 55.78 N
ATOM 5147 CA ARG M 18 -34.851 15.166 1.196 1.00 53.61 C
ATOM 5148 CB ARG M 18 -33.587 14.827 0.409 1.00 51.20 C
ATOM 5149 CG ARG M 18 -32.889 13.532 0.813 1.00 52.44 C
ATOM 5150 CD ARG M 18 -31.694 13.247 -0.087 1.00 52.13 C
ATOM 5151 NE ARG M 18 -30.517 12.875 0.683 1.00 57.94 N
ATOM 5152 CZ ARG M 18 -30.293 11.669 1.155 1.00 63.41 C
ATOM 5153 NH1 ARG M 18 -31.162 10.696 0.937 1.00 78.85 N
ATOM 5154 NH2 ARG M 18 -29.190 11.416 1.826 1.00 68.32 N
ATOM 5155 C ARG M 18 -34.515 15.467 2.680 1.00 54.27 C
ATOM 5156 O ARG M 18 -33.851 16.452 3.007 1.00 61.73 O
ATOM 5157 N VAL M 19 -34.949 14.570 3.548 1.00 59.66 N
ATOM 5158 CA VAL M 19 -34.864 14.683 4.988 1.00 59.03 C
ATOM 5159 CB VAL M 19 -36.284 14.739 5.624 1.00 60.98 C
ATOM 5160 CG1 VAL M 19 -36.203 14.807 7.147 1.00 63.81 C
ATOM 5161 CG2 VAL M 19 -37.078 15.921 5.098 1.00 64.67 C
ATOM 5162 C VAL M 19 -34.159 13.448 5.555 1.00 56.52 C
ATOM 5163 O VAL M 19 -34.493 12.304 5.229 1.00 49.50 O
ATOM 5164 N THR M 20 -33.275 13.718 6.499 1.00 58.04 N
ATOM 5165 CA THR M 20 -32.419 12.723 7.133 1.00 63.75 C
ATOM 5166 CB THR M 20 -30.984 12.978 6.617 1.00 66.38 C
ATOM 5167 OG1 THR M 20 -30.838 12.295 5.362 1.00 78.04 O
ATOM 5168 CG2 THR M 20 -29.929 12.514 7.539 1.00 70.60 C
ATOM 5169 C THR M 20 -32.571 12.762 8.683 1.00 62.05 C
ATOM 5170 O THR M 20 -32.869 13.796 9.282 1.00 60.99 O
ATOM 5171 N ILE M 21 -32.424 11.603 9.313 1.00 61.63 N
ATOM 5172 CA ILE M 21 -32.619 11.436 10.763 1.00 58.49 C
ATOM 5173 CB ILE M 21 -34.073 11.027 11.160 1.00 56.06 C
ATOM 5174 CG1 ILE M 21 -35.070 12.140 10.831 1.00 57.35 C
ATOM 5175 CD1 ILE M 21 -36.516 11.763 11.024 1.00 60.53 C
ATOM 5176 CG2 ILE M 21 -34.187 10.752 12.654 1.00 55.02 C
ATOM 5177 C ILE M 21 -31.691 10.317 11.127 1.00 59.93 C
ATOM 5178 O ILE M 21 -31.826 9.236 10.566 1.00 61.83 O
ATOM 5179 N THR M 22 -30.768 10.585 12.056 1.00 62.37 N
ATOM 5180 CA THR M 22 -29.714 9.656 12.481 1.00 58.69 C

ATOM 5181 CB THR M 22 -28.347 10.377 12.445 1.00 61.24 C
ATOM 5182 OG1 THR M 22 -27.574 9.796 11.405 1.00 63.62 O
ATOM 5183 CG2 THR M 22 -27.520 10.293 13.751 1.00 69.86 C
ATOM 5184 C THR M 22 -30.087 9.013 13.825 1.00 60.32 C
ATOM 5185 O THR M 22 -30.883 9.566 14.565 1.00 61.66 O
ATOM 5186 N ACYS M 23 -29.525 7.839 14.109 0.40 62.83 N
ATOM 5187 N BCYS M 23 -29.525 7.839 14.106 0.60 62.73 N
ATOM 5188 CA ACYS M 23 -29.830 7.083 15.332 0.40 65.94 C
ATOM 5189 CA BCYS M 23 -29.825 7.079 15.331 0.60 66.41 C
ATOM 5190 CB ACYS M 23 -30.976 6.080 15.093 0.40 64.08 C
ATOM 5191 CB BCYS M 23 -30.972 6.071 15.096 0.60 63.69 C
ATOM 5192 SG ACYS M 23 -31.324 4.906 16.435 0.40 66.15 S
ATOM 5193 SG BCYS M 23 -31.329 4.883 16.426 0.60 66.77 S
ATOM 5194 C ACYS M 23 -28.563 6.375 15.789 0.40 67.13 C
ATOM 5195 C BCYS M 23 -28.549 6.384 15.777 0.60 67.14 C
ATOM 5196 O ACYS M 23 -28.183 5.344 15.235 0.40 71.25 O
ATOM 5197 O BCYS M 23 -28.141 5.381 15.194 0.60 72.70 O
ATOM 5198 N ARG M 24 -27.912 6.959 16.792 1.00 68.11 N
ATOM 5199 CA ARG M 24 -26.657 6.461 17.346 1.00 73.23 C
ATOM 5200 CB ARG M 24 -25.791 7.675 17.746 1.00 81.63 C
ATOM 5201 CG ARG M 24 -24.292 7.420 17.877 1.00 89.30 C
ATOM 5202 CD ARG M 24 -23.489 8.397 17.018 1.00 98.90 C
ATOM 5203 NE ARG M 24 -22.052 8.394 17.313 1.00105.17 N
ATOM 5204 CZ ARG M 24 -21.180 7.431 16.993 1.00111.32 C
ATOM 5205 NH1 ARG M 24 -21.558 6.320 16.359 1.00108.92 N
ATOM 5206 NH2 ARG M 24 -19.898 7.579 17.327 1.00117.26 N
ATOM 5207 C ARG M 24 -27.007 5.594 18.558 1.00 71.31 C
ATOM 5208 O ARG M 24 -27.760 6.035 19.439 1.00 73.46 O
ATOM 5209 N SER M 25 -26.501 4.366 18.607 1.00 66.08 N
ATOM 5210 CA SER M 25 -26.821 3.462 19.720 1.00 66.91 C
ATOM 5211 CB SER M 25 -27.325 2.109 19.208 1.00 59.49 C
ATOM 5212 OG SER M 25 -26.253 1.329 18.729 1.00 62.90 O
ATOM 5213 C SER M 25 -25.594 3.281 20.612 1.00 68.21 C
ATOM 5214 O SER M 25 -24.461 3.348 20.125 1.00 69.59 O
ATOM 5215 N SER M 26 -25.824 3.031 21.900 1.00 70.84 N
ATOM 5216 CA SER M 26 -24.731 3.015 22.892 1.00 76.69 C
ATOM 5217 CB SER M 26 -25.279 3.099 24.316 1.00 83.36 C

ATOM 5218 OG SER M 26 -26.233 2.073 24.579 1.00 87.86 O
ATOM 5219 C SER M 26 -23.831 1.802 22.753 1.00 72.13 C
ATOM 5220 O SER M 26 -22.658 1.878 23.087 1.00 72.20 O
ATOM 5221 N GLN M 27 -24.389 0.686 22.282 1.00 75.62 N
ATOM 5222 CA GLN M 27 -23.585 -0.465 21.836 1.00 79.82 C
ATOM 5223 CB GLN M 27 -23.584 -1.629 22.856 1.00 87.29 C
ATOM 5224 CG GLN M 27 -23.424 -1.321 24.346 1.00 96.33 C
ATOM 5225 CD GLN M 27 -23.711 -2.563 25.216 1.00 95.31 C
ATOM 5226 OE1 GLN M 27 -24.628 -2.568 26.052 1.00 86.52 O
ATOM 5227 NE2 GLN M 27 -22.942 -3.628 24.996 1.00 91.74 N
ATOM 5228 C GLN M 27 -24.096 -1.022 20.493 1.00 76.79 C
ATOM 5229 O GLN M 27 -25.166 -0.637 19.979 1.00 63.05 O
ATOM 5230 N THR M 28 -23.329 -1.971 19.962 1.00 67.25 N
ATOM 5231 CA THR M 28 -23.729 -2.717 18.785 1.00 66.31 C
ATOM 5232 CB THR M 28 -22.627 -3.680 18.323 1.00 63.14 C
ATOM 5233 OG1 THR M 28 -23.011 -4.227 17.056 1.00 71.09 O
ATOM 5234 CG2 THR M 28 -22.364 -4.814 19.342 1.00 59.26 C
ATOM 5235 C THR M 28 -25.046 -3.485 18.958 1.00 69.58 C
ATOM 5236 O THR M 28 -25.345 -4.009 20.037 1.00 71.15 O
ATOM 5237 N ILE M 29 -25.782 -3.575 17.849 1.00 73.94 N
ATOM 5238 CA ILE M 29 -27.172 -4.049 17.802 1.00 72.47 C
ATOM 5239 CB ILE M 29 -28.102 -2.953 17.196 1.00 75.87 C
ATOM 5240 CG1 ILE M 29 -27.911 -1.625 17.886 1.00 75.63 C
ATOM 5241 CD1 ILE M 29 -28.694 -0.535 17.207 1.00 79.36 C
ATOM 5242 CG2 ILE M 29 -29.577 -3.266 17.386 1.00 83.74 C
ATOM 5243 C ILE M 29 -27.295 -5.320 16.945 1.00 67.46 C
ATOM 5244 O ILE M 29 -28.357 -5.606 16.401 1.00 57.22 O
ATOM 5245 N VAL M 30 -26.234 -6.110 16.829 1.00 65.86 N
ATOM 5246 CA VAL M 30 -26.363 -7.401 16.155 1.00 68.59 C
ATOM 5247 CB VAL M 30 -25.064 -7.846 15.415 1.00 67.90 C
ATOM 5248 CG1 VAL M 30 -24.468 -6.678 14.637 1.00 61.31 C
ATOM 5249 CG2 VAL M 30 -24.017 -8.452 16.358 1.00 79.98 C
ATOM 5250 C VAL M 30 -26.859 -8.407 17.210 1.00 72.05 C
ATOM 5251 O VAL M 30 -26.229 -8.598 18.254 1.00 76.90 O
ATOM 5252 N HIS M 31 -28.018 -9.008 16.961 1.00 71.53 N
ATOM 5253 CA HIS M 31 -28.506 -10.125 17.781 1.00 65.94 C
ATOM 5254 CB HIS M 31 -29.934 -10.488 17.343 1.00 64.39 C

ATOM 5255 CG HIS M 31 -30.649 -11.424 18.258 1.00 59.61 C
ATOM 5256 ND1 HIS M 31 -30.473 -12.789 18.210 1.00 60.34 N
ATOM 5257 CE1 HIS M 31 -31.259 -13.363 19.104 1.00 61.68 C
ATOM 5258 NE2 HIS M 31 -31.945 -12.420 19.727 1.00 56.72 N
ATOM 5259 CD2 HIS M 31 -31.590 -11.199 19.206 1.00 57.26 C
ATOM 5260 C HIS M 31 -27.549 -11.293 17.555 1.00 64.91 C
ATOM 5261 O HIS M 31 -26.849 -11.321 16.525 1.00 62.12 O
ATOM 5262 N SER M 32 -27.510 -12.249 18.493 1.00 65.45 N
ATOM 5263 CA SER M 32 -26.680 -13.485 18.350 1.00 64.00 C
ATOM 5264 CB SER M 32 -26.801 -14.340 19.611 1.00 71.15 C
ATOM 5265 OG SER M 32 -28.154 -14.369 20.054 1.00 80.05 O
ATOM 5266 C SER M 32 -27.026 -14.366 17.139 1.00 63.74 C
ATOM 5267 O SER M 32 -26.281 -15.288 16.808 1.00 60.36 O
ATOM 5268 N ASN M 33 -28.165 -14.110 16.494 1.00 56.90 N
ATOM 5269 CA ASN M 33 -28.510 -14.823 15.280 1.00 58.25 C
ATOM 5270 CB ASN M 33 -30.022 -15.135 15.239 1.00 56.58 C
ATOM 5271 CG ASN M 33 -30.898 -13.921 14.941 1.00 54.65 C
ATOM 5272 OD1 ASN M 33 -32.086 -13.925 15.244 1.00 52.46 O
ATOM 5273 ND2 ASN M 33 -30.329 -12.897 14.356 1.00 48.15 N
ATOM 5274 C ASN M 33 -27.979 -14.161 13.992 1.00 57.43 C
ATOM 5275 O ASN M 33 -28.162 -14.717 12.927 1.00 49.88 O
ATOM 5276 N GLY M 34 -27.345 -12.980 14.101 1.00 64.66 N
ATOM 5277 CA GLY M 34 -26.698 -12.277 12.960 1.00 66.65 C
ATOM 5278 C GLY M 34 -27.468 -11.093 12.366 1.00 69.34 C
ATOM 5279 O GLY M 34 -26.878 -10.204 11.740 1.00 66.15 O
ATOM 5280 N ASP M 35 -28.793 -11.126 12.512 1.00 71.43 N
ATOM 5281 CA ASP M 35 -29.682 -10.033 12.135 1.00 65.32 C
ATOM 5282 CB ASP M 35 -31.158 -10.458 12.224 1.00 65.61 C
ATOM 5283 CG ASP M 35 -31.565 -11.542 11.207 1.00 68.00 C
ATOM 5284 OD1 ASP M 35 -30.968 -11.665 10.123 1.00 72.33 O
ATOM 5285 OD2 ASP M 35 -32.553 -12.251 11.492 1.00 67.36 O
ATOM 5286 C ASP M 35 -29.465 -8.834 13.070 1.00 64.42 C
ATOM 5287 O ASP M 35 -29.038 -8.981 14.237 1.00 52.42 O
ATOM 5288 N THR M 36 -29.752 -7.651 12.529 1.00 59.46 N
ATOM 5289 CA THR M 36 -29.723 -6.416 13.272 1.00 53.02 C
ATOM 5290 CB THR M 36 -28.781 -5.362 12.648 1.00 58.04 C
ATOM 5291 OG1 THR M 36 -27.396 -5.787 12.732 1.00 58.01 O

ATOM 5292 CG2 THR M 36 -28.932 -4.024 13.389 1.00 56.37 C
ATOM 5293 C THR M 36 -31.152 -5.911 13.316 1.00 57.16 C
ATOM 5294 O THR M 36 -31.661 -5.332 12.339 1.00 61.23 O
ATOM 5295 N TYR M 37 -31.798 -6.116 14.460 1.00 51.75 N
ATOM 5296 CA TYR M 37 -33.182 -5.714 14.650 1.00 48.84 C
ATOM 5297 CB TYR M 37 -33.809 -6.576 15.773 1.00 49.19 C
ATOM 5298 CG TYR M 37 -33.815 -8.035 15.397 1.00 48.73 C
ATOM 5299 CD1 TYR M 37 -34.549 -8.465 14.309 1.00 43.62 C
ATOM 5300 CE1 TYR M 37 -34.527 -9.784 13.916 1.00 48.58 C
ATOM 5301 CZ TYR M 37 -33.784 -10.689 14.617 1.00 48.26 C
ATOM 5302 OH TYR M 37 -33.800 -11.989 14.209 1.00 46.00 O
ATOM 5303 CE2 TYR M 37 -33.036 -10.298 15.709 1.00 50.32 C
ATOM 5304 CD2 TYR M 37 -33.059 -8.969 16.093 1.00 52.22 C
ATOM 5305 C TYR M 37 -33.317 -4.234 14.941 1.00 50.53 C
ATOM 5306 O TYR M 37 -33.763 -3.851 16.015 1.00 53.98 O
ATOM 5307 N LEU M 38 -32.940 -3.383 13.996 1.00 53.23 N
ATOM 5308 CA LEU M 38 -33.157 -1.961 14.153 1.00 47.96 C
ATOM 5309 CB LEU M 38 -31.987 -1.142 13.623 1.00 52.85 C
ATOM 5310 CG LEU M 38 -32.239 0.347 13.972 1.00 61.06 C
ATOM 5311 CD1 LEU M 38 -31.509 0.723 15.244 1.00 56.93 C
ATOM 5312 CD2 LEU M 38 -31.933 1.311 12.832 1.00 61.74 C
ATOM 5313 C LEU M 38 -34.377 -1.646 13.346 1.00 48.71 C
ATOM 5314 O LEU M 38 -34.486 -2.113 12.223 1.00 55.88 O
ATOM 5315 N GLU M 39 -35.269 -0.819 13.891 1.00 49.86 N
ATOM 5316 CA GLU M 39 -36.546 -0.503 13.265 1.00 49.88 C
ATOM 5317 CB GLU M 39 -37.705 -1.257 13.933 1.00 51.46 C
ATOM 5318 CG GLU M 39 -37.439 -2.740 14.187 1.00 50.51 C
ATOM 5319 CD GLU M 39 -38.626 -3.491 14.763 1.00 49.46 C
ATOM 5320 OE1 GLU M 39 -39.579 -2.867 15.256 1.00 58.19 O
ATOM 5321 OE2 GLU M 39 -38.597 -4.729 14.753 1.00 51.62 O
ATOM 5322 C GLU M 39 -36.810 0.984 13.365 1.00 54.10 C
ATOM 5323 O GLU M 39 -36.239 1.650 14.203 1.00 57.92 O
ATOM 5324 N TRP M 40 -37.687 1.478 12.494 1.00 52.97 N
ATOM 5325 CA TRP M 40 -38.081 2.859 12.471 1.00 53.63 C
ATOM 5326 CB TRP M 40 -37.581 3.516 11.210 1.00 52.36 C
ATOM 5327 CG TRP M 40 -36.148 3.774 11.248 1.00 54.01 C
ATOM 5328 CD1 TRP M 40 -35.168 3.000 10.731 1.00 51.33 C

ATOM 5329 NE1 TRP M 40 -33.949 3.579 10.925 1.00 54.08 N
ATOM 5330 CE2 TRP M 40 -34.124 4.752 11.601 1.00 57.69 C
ATOM 5331 CD2 TRP M 40 -35.508 4.900 11.828 1.00 57.87 C
ATOM 5332 CE3 TRP M 40 -35.966 6.029 12.514 1.00 59.76 C
ATOM 5333 CZ3 TRP M 40 -35.033 6.955 12.958 1.00 59.90 C
ATOM 5334 CH2 TRP M 40 -33.659 6.764 12.745 1.00 60.57 C
ATOM 5335 CZ2 TRP M 40 -33.186 5.669 12.067 1.00 62.45 C
ATOM 5336 C TRP M 40 -39.587 2.985 12.523 1.00 53.84 C
ATOM 5337 O TRP M 40 -40.299 2.292 11.803 1.00 54.78 O
ATOM 5338 N TYR M 41 -40.060 3.903 13.367 1.00 54.29 N
ATOM 5339 CA TYR M 41 -41.491 4.126 13.568 1.00 52.48 C
ATOM 5340 CB TYR M 41 -41.908 3.707 14.977 1.00 47.63 C
ATOM 5341 CG TYR M 41 -41.863 2.227 15.183 1.00 43.16 C
ATOM 5342 CD1 TYR M 41 -40.704 1.596 15.595 1.00 48.48 C
ATOM 5343 CE1 TYR M 41 -40.661 0.215 15.790 1.00 50.41 C
ATOM 5344 CZ TYR M 41 -41.791 -0.547 15.562 1.00 47.66 C
ATOM 5345 OH TYR M 41 -41.761 -1.924 15.746 1.00 48.59 O
ATOM 5346 CE2 TYR M 41 -42.954 0.076 15.153 1.00 45.07 C
ATOM 5347 CD2 TYR M 41 -42.990 1.449 14.985 1.00 42.60 C
ATOM 5348 C TYR M 41 -41.836 5.572 13.304 1.00 50.80 C
ATOM 5349 O TYR M 41 -40.993 6.439 13.406 1.00 60.23 O
ATOM 5350 N GLN M 42 -43.074 5.795 12.917 1.00 53.48 N
ATOM 5351 CA GLN M 42 -43.658 7.105 12.722 1.00 55.62 C
ATOM 5352 CB GLN M 42 -44.264 7.163 11.323 1.00 51.80 C
ATOM 5353 CG GLN M 42 -44.935 8.480 11.009 1.00 55.39 C
ATOM 5354 CD GLN M 42 -45.549 8.545 9.637 1.00 47.05 C
ATOM 5355 OE1 GLN M 42 -46.530 7.887 9.384 1.00 46.61 O
ATOM 5356 NE2 GLN M 42 -45.012 9.405 8.773 1.00 45.88 N
ATOM 5357 C GLN M 42 -44.811 7.234 13.716 1.00 59.39 C
ATOM 5358 O GLN M 42 -45.586 6.284 13.842 1.00 63.49 O
ATOM 5359 N GLN M 43 -44.953 8.396 14.372 1.00 61.30 N
ATOM 5360 CA GLN M 43 -46.081 8.665 15.327 1.00 60.97 C
ATOM 5361 CB GLN M 43 -45.631 8.642 16.818 1.00 60.98 C
ATOM 5362 CG GLN M 43 -46.806 8.850 17.811 1.00 62.82 C
ATOM 5363 CD GLN M 43 -46.610 8.226 19.204 1.00 59.31 C
ATOM 5364 OE1 GLN M 43 -45.553 8.354 19.842 1.00 51.51 O
ATOM 5365 NE2 GLN M 43 -47.640 7.538 19.671 1.00 56.07 N

ATOM 5366 C GLN M 43 -46.758 9.987 15.011 1.00 57.30 C
ATOM 5367 O GLN M 43 -46.142 11.044 15.108 1.00 61.31 O
ATOM 5368 N LYS M 44 -48.012 9.916 14.596 1.00 57.62 N
ATOM 5369 CA LYS M 44 -48.819 11.095 14.341 1.00 65.14 C
ATOM 5370 CB LYS M 44 -49.846 10.790 13.250 1.00 69.38 C
ATOM 5371 CG LYS M 44 -49.240 10.194 11.982 1.00 71.59 C
ATOM 5372 CD LYS M 44 -49.834 10.739 10.679 1.00 70.77 C
ATOM 5373 CE LYS M 44 -48.889 10.432 9.515 1.00 72.21 C
ATOM 5374 NZ LYS M 44 -49.543 10.511 8.187 1.00 74.20 N
ATOM 5375 C LYS M 44 -49.538 11.497 15.656 1.00 75.22 C
ATOM 5376 O LYS M 44 -49.776 10.626 16.508 1.00 75.43 O
ATOM 5377 N PRO M 45 -49.870 12.798 15.835 1.00 76.70 N
ATOM 5378 CA PRO M 45 -50.593 13.325 16.999 1.00 79.41 C
ATOM 5379 CB PRO M 45 -51.138 14.655 16.474 1.00 86.93 C
ATOM 5380 CG PRO M 45 -50.075 15.126 15.543 1.00 89.97 C
ATOM 5381 CD PRO M 45 -49.335 13.911 15.030 1.00 89.31 C
ATOM 5382 C PRO M 45 -51.744 12.479 17.542 1.00 69.27 C
ATOM 5383 O PRO M 45 -52.772 12.331 16.881 1.00 56.99 O
ATOM 5384 N GLY M 46 -51.552 11.918 18.734 1.00 65.78 N
ATOM 5385 CA GLY M 46 -52.624 11.197 19.436 1.00 72.04 C
ATOM 5386 C GLY M 46 -52.935 9.829 18.862 1.00 77.22 C
ATOM 5387 O GLY M 46 -54.027 9.295 19.088 1.00 82.09 O
ATOM 5388 N LYS M 47 -51.969 9.276 18.122 1.00 75.95 N
ATOM 5389 CA LYS M 47 -52.072 7.976 17.463 1.00 68.63 C
ATOM 5390 CB LYS M 47 -51.883 8.119 15.945 1.00 73.44 C
ATOM 5391 CG LYS M 47 -53.009 8.834 15.227 1.00 75.15 C
ATOM 5392 CD LYS M 47 -54.207 7.922 15.034 1.00 77.46 C
ATOM 5393 CE LYS M 47 -55.443 8.712 14.638 1.00 83.28 C
ATOM 5394 NZ LYS M 47 -56.504 7.781 14.176 1.00 86.31 N
ATOM 5395 C LYS M 47 -50.992 7.054 18.005 1.00 62.86 C
ATOM 5396 O LYS M 47 -50.023 7.489 18.660 1.00 57.77 O
ATOM 5397 N ALA M 48 -51.153 5.766 17.728 1.00 58.71 N
ATOM 5398 CA ALA M 48 -50.088 4.804 18.009 1.00 57.39 C
ATOM 5399 CB ALA M 48 -50.626 3.385 17.955 1.00 62.59 C
ATOM 5400 C ALA M 48 -48.996 5.002 16.973 1.00 52.44 C
ATOM 5401 O ALA M 48 -49.286 5.555 15.897 1.00 53.62 O
ATOM 5402 N PRO M 49 -47.748 4.567 17.279 1.00 53.90 N

ATOM 5403 CA PRO M 49 -46.733 4.547 16.226 1.00 53.53 C
ATOM 5404 CB PRO M 49 -45.460 4.076 16.958 1.00 55.41 C
ATOM 5405 CG PRO M 49 -45.723 4.305 18.411 1.00 53.33 C
ATOM 5406 CD PRO M 49 -47.200 4.050 18.549 1.00 54.13 C
ATOM 5407 C PRO M 49 -47.099 3.558 15.122 1.00 57.28 C
ATOM 5408 O PRO M 49 -47.829 2.549 15.400 1.00 50.90 O
ATOM 5409 N ASN M 50 -46.633 3.883 13.903 1.00 55.30 N
ATOM 5410 CA ASN M 50 -46.611 2.982 12.729 1.00 55.02 C
ATOM 5411 CB ASN M 50 -47.069 3.719 11.488 1.00 60.36 C
ATOM 5412 CG ASN M 50 -48.528 3.977 11.509 1.00 72.07 C
ATOM 5413 OD1 ASN M 50 -49.327 3.048 11.748 1.00 68.83 O
ATOM 5414 ND2 ASN M 50 -48.912 5.241 11.272 1.00 73.48 N
ATOM 5415 C ASN M 50 -45.214 2.496 12.399 1.00 52.02 C
ATOM 5416 O ASN M 50 -44.245 3.268 12.468 1.00 47.95 O
ATOM 5417 N LEU M 51 -45.124 1.228 11.983 1.00 48.28 N
ATOM 5418 CA LEU M 51 -43.860 0.636 11.543 1.00 45.37 C
ATOM 5419 CB LEU M 51 -43.966 -0.869 11.561 1.00 46.52 C
ATOM 5420 CG LEU M 51 -42.714 -1.599 11.057 1.00 49.79 C
ATOM 5421 CD1 LEU M 51 -41.465 -1.350 11.883 1.00 43.99 C
ATOM 5422 CD2 LEU M 51 -43.043 -3.073 10.982 1.00 51.93 C
ATOM 5423 C LEU M 51 -43.564 1.124 10.133 1.00 43.53 C
ATOM 5424 O LEU M 51 -44.445 1.148 9.330 1.00 40.24 O
ATOM 5425 N LEU M 52 -42.351 1.602 9.902 1.00 48.10 N
ATOM 5426 CA LEU M 52 -41.857 2.024 8.580 1.00 54.70 C
ATOM 5427 CB LEU M 52 -41.192 3.423 8.650 1.00 54.18 C
ATOM 5428 CG LEU M 52 -42.050 4.656 9.035 1.00 50.97 C
ATOM 5429 CD1 LEU M 52 -41.159 5.879 9.246 1.00 51.52 C
ATOM 5430 CD2 LEU M 52 -43.138 4.947 8.029 1.00 45.39 C
ATOM 5431 C LEU M 52 -40.817 1.046 8.034 1.00 54.62 C
ATOM 5432 O LEU M 52 -40.926 0.560 6.914 1.00 62.21 O
ATOM 5433 N ILE M 53 -39.793 0.805 8.828 1.00 49.01 N
ATOM 5434 CA ILE M 53 -38.679 -0.020 8.426 1.00 52.15 C
ATOM 5435 CB ILE M 53 -37.381 0.800 8.285 1.00 48.89 C
ATOM 5436 CG1 ILE M 53 -37.599 2.059 7.466 1.00 50.18 C
ATOM 5437 CD1 ILE M 53 -37.980 1.802 6.035 1.00 53.57 C
ATOM 5438 CG2 ILE M 53 -36.260 -0.058 7.713 1.00 51.18 C
ATOM 5439 C ILE M 53 -38.378 -1.000 9.538 1.00 53.12 C

ATOM 5440 O ILE M 53 -38.530 -0.660 10.704 1.00 52.76 O
ATOM 5441 N ARG M 54 -37.850 -2.159 9.146 1.00 50.62 N
ATOM 5442 CA ARG M 54 -37.364 -3.205 10.043 1.00 48.47 C
ATOM 5443 CB ARG M 54 -38.355 -4.340 10.169 1.00 51.53 C
ATOM 5444 CG ARG M 54 -39.421 -4.313 9.103 1.00 58.42 C
ATOM 5445 CD ARG M 54 -39.837 -5.675 8.682 1.00 59.05 C
ATOM 5446 NE ARG M 54 -40.211 -5.651 7.279 1.00 55.78 N
ATOM 5447 CZ ARG M 54 -41.068 -6.509 6.741 1.00 59.91 C
ATOM 5448 NH1 ARG M 54 -41.701 -7.432 7.487 1.00 52.68 N
ATOM 5449 NH2 ARG M 54 -41.309 -6.443 5.441 1.00 60.66 N
ATOM 5450 C ARG M 54 -36.066 -3.738 9.489 1.00 47.88 C
ATOM 5451 O ARG M 54 -35.696 -3.438 8.358 1.00 47.29 O
ATOM 5452 N LYS M 55 -35.376 -4.510 10.311 1.00 45.61 N
ATOM 5453 CA LYS M 55 -34.074 -5.067 9.989 1.00 51.50 C
ATOM 5454 CB LYS M 55 -34.230 -6.405 9.279 1.00 59.50 C
ATOM 5455 CG LYS M 55 -34.955 -7.440 10.137 1.00 64.85 C
ATOM 5456 CD LYS M 55 -35.690 -8.518 9.329 1.00 66.34 C
ATOM 5457 CE LYS M 55 -34.917 -9.829 9.206 1.00 69.19 C
ATOM 5458 NZ LYS M 55 -35.837 -10.945 9.558 1.00 71.19 N
ATOM 5459 C LYS M 55 -33.227 -4.071 9.196 1.00 48.60 C
ATOM 5460 O LYS M 55 -32.673 -4.386 8.166 1.00 47.99 O
ATOM 5461 N VAL M 56 -33.151 -2.852 9.719 1.00 53.07 N
ATOM 5462 CA VAL M 56 -32.333 -1.749 9.185 1.00 49.58 C
ATOM 5463 CB VAL M 56 -30.864 -2.148 8.970 1.00 47.88 C
ATOM 5464 CG1 VAL M 56 -30.058 -0.933 8.579 1.00 51.22 C
ATOM 5465 CG2 VAL M 56 -30.318 -2.786 10.232 1.00 47.56 C
ATOM 5466 C VAL M 56 -32.885 -1.130 7.913 1.00 49.62 C
ATOM 5467 O VAL M 56 -33.086 0.088 7.894 1.00 47.75 O
ATOM 5468 N SER M 57 -33.089 -1.955 6.864 1.00 50.43 N
ATOM 5469 CA SER M 57 -33.416 -1.450 5.511 1.00 54.83 C
ATOM 5470 CB SER M 57 -32.178 -1.601 4.596 1.00 57.23 C
ATOM 5471 OG SER M 57 -31.611 -2.901 4.683 1.00 59.60 O
ATOM 5472 C SER M 57 -34.669 -2.027 4.825 1.00 51.59 C
ATOM 5473 O SER M 57 -35.038 -1.606 3.739 1.00 51.67 O
ATOM 5474 N ASN M 58 -35.359 -2.938 5.479 1.00 51.12 N
ATOM 5475 CA ASN M 58 -36.445 -3.672 4.848 1.00 51.14 C
ATOM 5476 CB ASN M 58 -36.492 -5.114 5.382 1.00 50.41 C

ATOM 5477 CG ASN M 58 -37.614 -5.920 4.800 1.00 46.92 C
ATOM 5478 OD1 ASN M 58 -38.629 -5.388 4.385 1.00 49.67 O
ATOM 5479 ND2 ASN M 58 -37.463 -7.209 4.818 1.00 47.44 N
ATOM 5480 C ASN M 58 -37.726 -2.931 5.138 1.00 50.25 C
ATOM 5481 O ASN M 58 -38.300 -3.047 6.201 1.00 55.51 O
ATOM 5482 N ARG M 59 -38.177 -2.172 4.164 1.00 50.41 N
ATOM 5483 CA ARG M 59 -39.392 -1.397 4.300 1.00 51.93 C
ATOM 5484 CB ARG M 59 -39.591 -0.542 3.038 1.00 50.52 C
ATOM 5485 CG ARG M 59 -40.468 0.659 3.255 1.00 54.89 C
ATOM 5486 CD ARG M 59 -41.015 1.237 1.959 1.00 55.55 C
ATOM 5487 NE ARG M 59 -40.155 0.956 0.816 1.00 56.76 N
ATOM 5488 CZ ARG M 59 -40.585 0.596 -0.392 1.00 57.17 C
ATOM 5489 NH1 ARG M 59 -41.886 0.454 -0.664 1.00 59.13 N
ATOM 5490 NH2 ARG M 59 -39.694 0.355 -1.341 1.00 59.43 N
ATOM 5491 C ARG M 59 -40.564 -2.348 4.474 1.00 51.36 C
ATOM 5492 O ARG M 59 -40.610 -3.369 3.795 1.00 50.80 O
ATOM 5493 N PHE M 60 -41.507 -2.004 5.353 1.00 47.60 N
ATOM 5494 CA PHE M 60 -42.677 -2.862 5.668 1.00 45.45 C
ATOM 5495 CB PHE M 60 -43.227 -2.415 7.051 1.00 48.66 C
ATOM 5496 CG PHE M 60 -44.523 -3.056 7.463 1.00 45.12 C
ATOM 5497 CD1 PHE M 60 -44.618 -4.438 7.608 1.00 46.13 C
ATOM 5498 CE1 PHE M 60 -45.807 -5.033 8.004 1.00 50.32 C
ATOM 5499 CZ PHE M 60 -46.920 -4.239 8.268 1.00 53.05 C
ATOM 5500 CE2 PHE M 60 -46.824 -2.848 8.143 1.00 48.10 C
ATOM 5501 CD2 PHE M 60 -45.623 -2.274 7.759 1.00 43.39 C
ATOM 5502 C PHE M 60 -43.723 -2.708 4.553 1.00 50.17 C
ATOM 5503 O PHE M 60 -43.858 -1.598 3.995 1.00 47.53 O
ATOM 5504 N SER M 61 -44.455 -3.786 4.222 1.00 52.09 N
ATOM 5505 CA SER M 61 -45.588 -3.733 3.224 1.00 57.15 C
ATOM 5506 CB SER M 61 -46.437 -5.027 3.238 1.00 61.34 C
ATOM 5507 OG SER M 61 -45.677 -6.152 3.631 1.00 70.30 O
ATOM 5508 C SER M 61 -46.556 -2.592 3.514 1.00 57.65 C
ATOM 5509 O SER M 61 -46.946 -2.420 4.672 1.00 59.43 O
ATOM 5510 N GLY M 62 -46.932 -1.822 2.490 1.00 52.70 N
ATOM 5511 CA GLY M 62 -47.833 -0.672 2.658 1.00 50.00 C
ATOM 5512 C GLY M 62 -47.186 0.701 2.827 1.00 52.21 C
ATOM 5513 O GLY M 62 -47.800 1.719 2.520 1.00 52.47 O

ATOM 5514 N VAL M 63 -45.942 0.742 3.287 1.00 52.87 N
ATOM 5515 CA VAL M 63 -45.209 2.010 3.507 1.00 54.63 C
ATOM 5516 CB VAL M 63 -44.026 1.748 4.472 1.00 53.59 C
ATOM 5517 CG1 VAL M 63 -43.181 3.000 4.680 1.00 57.98 C
ATOM 5518 CG2 VAL M 63 -44.532 1.218 5.828 1.00 53.97 C
ATOM 5519 C VAL M 63 -44.712 2.620 2.154 1.00 55.27 C
ATOM 5520 O VAL M 63 -44.322 1.869 1.273 1.00 57.57 O
ATOM 5521 N PRO M 64 -44.725 3.968 1.979 1.00 56.41 N
ATOM 5522 CA PRO M 64 -44.369 4.492 0.658 1.00 53.61 C
ATOM 5523 CB PRO M 64 -44.925 5.928 0.666 1.00 59.47 C
ATOM 5524 CG PRO M 64 -45.938 5.954 1.748 1.00 56.89 C
ATOM 5525 CD PRO M 64 -45.391 5.014 2.784 1.00 60.11 C
ATOM 5526 C PRO M 64 -42.904 4.517 0.410 1.00 58.20 C
ATOM 5527 O PRO M 64 -42.123 4.546 1.372 1.00 55.59 O
ATOM 5528 N SER M 65 -42.555 4.551 -0.886 1.00 58.16 N
ATOM 5529 CA SER M 65 -41.176 4.332 -1.362 1.00 53.71 C
ATOM 5530 CB SER M 65 -41.123 4.202 -2.896 1.00 58.43 C
ATOM 5531 OG SER M 65 -41.463 5.394 -3.559 1.00 56.76 O
ATOM 5532 C SER M 65 -40.194 5.385 -0.879 1.00 49.83 C
ATOM 5533 O SER M 65 -38.994 5.093 -0.661 1.00 46.08 O
ATOM 5534 N ARG M 66 -40.702 6.599 -0.673 1.00 48.51 N
ATOM 5535 CA ARG M 66 -39.888 7.670 -0.073 1.00 46.98 C
ATOM 5536 CB ARG M 66 -40.686 8.962 0.047 1.00 47.33 C
ATOM 5537 CG ARG M 66 -41.895 8.910 0.934 1.00 50.05 C
ATOM 5538 CD ARG M 66 -42.450 10.309 1.084 1.00 50.24 C
ATOM 5539 NE ARG M 66 -43.652 10.294 1.915 1.00 43.84 N
ATOM 5540 CZ ARG M 66 -44.857 9.946 1.501 1.00 45.35 C
ATOM 5541 NH1 ARG M 66 -45.076 9.514 0.240 1.00 45.84 N
ATOM 5542 NH2 ARG M 66 -45.865 9.980 2.387 1.00 45.18 N
ATOM 5543 C ARG M 66 -39.163 7.353 1.257 1.00 47.50 C
ATOM 5544 O ARG M 66 -38.076 7.870 1.460 1.00 50.61 O
ATOM 5545 N PHE M 67 -39.716 6.448 2.086 1.00 47.77 N
ATOM 5546 CA PHE M 67 -39.078 5.973 3.321 1.00 48.82 C
ATOM 5547 CB PHE M 67 -40.122 5.497 4.343 1.00 48.29 C
ATOM 5548 CG PHE M 67 -41.026 6.588 4.776 1.00 51.47 C
ATOM 5549 CD1 PHE M 67 -40.565 7.588 5.634 1.00 53.12 C
ATOM 5550 CE1 PHE M 67 -41.389 8.640 6.000 1.00 51.81 C

ATOM 5551 CZ PHE M 67 -42.675 8.721 5.490 1.00 47.67 C
ATOM 5552 CE2 PHE M 67 -43.121 7.752 4.627 1.00 49.16 C
ATOM 5553 CD2 PHE M 67 -42.288 6.694 4.259 1.00 48.52 C
ATOM 5554 C PHE M 67 -38.109 4.841 3.066 1.00 53.17 C
ATOM 5555 O PHE M 67 -38.465 3.841 2.449 1.00 54.47 O
ATOM 5556 N SER M 68 -36.890 5.004 3.572 1.00 50.71 N
ATOM 5557 CA SER M 68 -35.882 3.981 3.509 1.00 47.67 C
ATOM 5558 CB SER M 68 -35.142 4.114 2.186 1.00 42.57 C
ATOM 5559 OG SER M 68 -34.245 5.198 2.247 1.00 47.60 O
ATOM 5560 C SER M 68 -34.897 4.099 4.705 1.00 48.31 C
ATOM 5561 O SER M 68 -34.694 5.193 5.266 1.00 46.63 O
ATOM 5562 N GLY M 69 -34.292 2.972 5.071 1.00 50.48 N
ATOM 5563 CA GLY M 69 -33.327 2.898 6.167 1.00 51.73 C
ATOM 5564 C GLY M 69 -31.998 2.279 5.768 1.00 47.75 C
ATOM 5565 O GLY M 69 -31.981 1.385 4.926 1.00 53.49 O
ATOM 5566 N SER M 70 -30.894 2.776 6.346 1.00 42.29 N
ATOM 5567 CA SER M 70 -29.548 2.179 6.200 1.00 48.53 C
ATOM 5568 CB SER M 70 -28.730 2.953 5.167 1.00 49.08 C
ATOM 5569 OG SER M 70 -28.769 4.352 5.444 1.00 58.44 O
ATOM 5570 C SER M 70 -28.783 2.137 7.525 1.00 48.91 C
ATOM 5571 O SER M 70 -29.266 2.634 8.536 1.00 56.14 O
ATOM 5572 N GLY M 71 -27.610 1.510 7.500 1.00 52.42 N
ATOM 5573 CA GLY M 71 -26.613 1.594 8.561 1.00 54.22 C
ATOM 5574 C GLY M 71 -26.110 0.256 9.074 1.00 64.75 C
ATOM 5575 O GLY M 71 -26.527 -0.839 8.616 1.00 65.93 O
ATOM 5576 N SER M 72 -25.220 0.348 10.059 1.00 65.83 N
ATOM 5577 CA SER M 72 -24.599 -0.832 10.664 1.00 67.71 C
ATOM 5578 CB SER M 72 -23.684 -1.530 9.657 1.00 65.02 C
ATOM 5579 OG SER M 72 -22.779 -0.574 9.148 1.00 63.50 O
ATOM 5580 C SER M 72 -23.791 -0.361 11.848 1.00 69.75 C
ATOM 5581 O SER M 72 -23.633 0.848 12.040 1.00 63.63 O
ATOM 5582 N GLY M 73 -23.272 -1.317 12.623 1.00 80.90 N
ATOM 5583 CA GLY M 73 -22.556 -1.034 13.877 1.00 76.78 C
ATOM 5584 C GLY M 73 -23.454 -0.281 14.855 1.00 78.31 C
ATOM 5585 O GLY M 73 -24.427 -0.848 15.397 1.00 74.65 O
ATOM 5586 N THR M 74 -23.144 1.008 15.023 1.00 71.29 N
ATOM 5587 CA THR M 74 -23.855 1.919 15.927 1.00 73.34 C

ATOM 5588 CB THR M 74 -22.915 2.404 17.078 1.00 76.64 C
ATOM 5589 OG1 THR M 74 -21.618 2.777 16.573 1.00 71.00 O
ATOM 5590 CG2 THR M 74 -22.728 1.300 18.105 1.00 75.03 C
ATOM 5591 C THR M 74 -24.510 3.126 15.210 1.00 73.23 C
ATOM 5592 O THR M 74 -25.145 3.969 15.864 1.00 69.53 O
ATOM 5593 N ASP M 75 -24.414 3.174 13.879 1.00 67.91 N
ATOM 5594 CA ASP M 75 -24.902 4.316 13.104 1.00 69.80 C
ATOM 5595 CB ASP M 75 -23.727 5.030 12.438 1.00 67.71 C
ATOM 5596 CG ASP M 75 -22.818 5.650 13.453 1.00 75.90 C
ATOM 5597 OD1 ASP M 75 -23.231 6.722 13.974 1.00 71.02 O
ATOM 5598 OD2 ASP M 75 -21.757 5.030 13.783 1.00 71.44 O
ATOM 5599 C ASP M 75 -25.965 3.903 12.080 1.00 69.28 C
ATOM 5600 O ASP M 75 -25.707 3.091 11.164 1.00 66.82 O
ATOM 5601 N PHE M 76 -27.156 4.476 12.258 1.00 58.58 N
ATOM 5602 CA PHE M 76 -28.320 4.157 11.444 1.00 55.07 C
ATOM 5603 CB PHE M 76 -29.270 3.259 12.224 1.00 55.95 C
ATOM 5604 CG PHE M 76 -28.639 1.974 12.672 1.00 56.78 C
ATOM 5605 CD1 PHE M 76 -28.536 0.900 11.805 1.00 59.13 C
ATOM 5606 CE1 PHE M 76 -27.923 -0.279 12.210 1.00 62.89 C
ATOM 5607 CZ PHE M 76 -27.393 -0.386 13.492 1.00 61.70 C
ATOM 5608 CE2 PHE M 76 -27.476 0.684 14.355 1.00 59.31 C
ATOM 5609 CD2 PHE M 76 -28.100 1.857 13.949 1.00 58.68 C
ATOM 5610 C PHE M 76 -29.011 5.430 11.032 1.00 55.61 C
ATOM 5611 O PHE M 76 -28.951 6.426 11.745 1.00 59.35 O
ATOM 5612 N THR M 77 -29.653 5.398 9.866 1.00 57.88 N
ATOM 5613 CA THR M 77 -30.262 6.583 9.272 1.00 55.14 C
ATOM 5614 CB THR M 77 -29.393 7.145 8.138 1.00 56.77 C
ATOM 5615 OG1 THR M 77 -28.037 7.272 8.572 1.00 56.67 O
ATOM 5616 CG2 THR M 77 -29.924 8.508 7.664 1.00 58.76 C
ATOM 5617 C THR M 77 -31.591 6.260 8.638 1.00 54.61 C
ATOM 5618 O THR M 77 -31.715 5.259 7.933 1.00 58.83 O
ATOM 5619 N LEU M 78 -32.567 7.128 8.864 1.00 53.39 N
ATOM 5620 CA LEU M 78 -33.829 7.097 8.130 1.00 54.10 C
ATOM 5621 CB LEU M 78 -34.999 7.455 9.034 1.00 48.76 C
ATOM 5622 CG LEU M 78 -36.383 7.511 8.414 1.00 52.12 C
ATOM 5623 CD1 LEU M 78 -36.855 6.141 7.948 1.00 52.40 C
ATOM 5624 CD2 LEU M 78 -37.377 8.075 9.418 1.00 56.10 C

ATOM 5625 C LEU M 78 -33.712 8.151 7.082 1.00 57.66 C
ATOM 5626 O LEU M 78 -33.202 9.216 7.377 1.00 63.61 O
ATOM 5627 N THR M 79 -34.189 7.867 5.864 1.00 59.06 N
ATOM 5628 CA THR M 79 -34.245 8.873 4.813 1.00 51.62 C
ATOM 5629 CB THR M 79 -33.305 8.534 3.656 1.00 51.92 C
ATOM 5630 OG1 THR M 79 -31.952 8.588 4.124 1.00 54.17 O
ATOM 5631 CG2 THR M 79 -33.455 9.535 2.506 1.00 52.81 C
ATOM 5632 C THR M 79 -35.648 9.021 4.301 1.00 49.27 C
ATOM 5633 O THR M 79 -36.319 8.040 4.076 1.00 52.85 O
ATOM 5634 N ILE M 80 -36.078 10.256 4.098 1.00 54.09 N
ATOM 5635 CA ILE M 80 -37.322 10.534 3.412 1.00 53.82 C
ATOM 5636 CB ILE M 80 -38.291 11.356 4.283 1.00 53.46 C
ATOM 5637 CG1 ILE M 80 -38.291 10.822 5.728 1.00 56.35 C
ATOM 5638 CD1 ILE M 80 -39.416 11.336 6.611 1.00 60.01 C
ATOM 5639 CG2 ILE M 80 -39.689 11.321 3.667 1.00 55.44 C
ATOM 5640 C ILE M 80 -36.903 11.294 2.163 1.00 56.11 C
ATOM 5641 O ILE M 80 -36.459 12.406 2.246 1.00 57.49 O
ATOM 5642 N SER M 81 -37.017 10.673 1.005 1.00 60.15 N
ATOM 5643 CA SER M 81 -36.438 11.235 -0.222 1.00 58.66 C
ATOM 5644 CB SER M 81 -36.431 10.168 -1.343 1.00 50.44 C
ATOM 5645 OG SER M 81 -37.738 9.657 -1.555 1.00 49.76 O
ATOM 5646 C SER M 81 -37.186 12.497 -0.658 1.00 56.96 C
ATOM 5647 O SER M 81 -36.571 13.444 -1.127 1.00 58.35 O
ATOM 5648 N SER M 82 -38.507 12.506 -0.485 1.00 55.75 N
ATOM 5649 CA SER M 82 -39.351 13.645 -0.871 1.00 59.02 C
ATOM 5650 CB SER M 82 -39.952 13.420 -2.270 1.00 59.45 C
ATOM 5651 OG SER M 82 -41.113 14.217 -2.475 1.00 64.08 O
ATOM 5652 C SER M 82 -40.456 13.855 0.178 1.00 59.65 C
ATOM 5653 O SER M 82 -41.581 13.341 0.018 1.00 55.82 O
ATOM 5654 N LEU M 83 -40.120 14.617 1.233 1.00 58.42 N
ATOM 5655 CA LEU M 83 -41.024 14.866 2.365 1.00 57.42 C
ATOM 5656 CB LEU M 83 -40.421 15.896 3.320 1.00 60.42 C
ATOM 5657 CG LEU M 83 -41.283 16.213 4.551 1.00 62.25 C
ATOM 5658 CD1 LEU M 83 -41.361 14.972 5.422 1.00 59.79 C
ATOM 5659 CD2 LEU M 83 -40.734 17.418 5.324 1.00 61.45 C
ATOM 5660 C LEU M 83 -42.375 15.379 1.904 1.00 58.67 C
ATOM 5661 O LEU M 83 -42.414 16.330 1.134 1.00 59.76 O

ATOM 5662 N GLN M 84 -43.453 14.721 2.335 1.00 52.84 N
ATOM 5663 CA GLN M 84 -44.829 15.125 2.027 1.00 59.93 C
ATOM 5664 CB GLN M 84 -45.665 13.890 1.622 1.00 60.06 C
ATOM 5665 CG GLN M 84 -45.221 13.226 0.333 1.00 65.71 C
ATOM 5666 CD GLN M 84 -45.282 14.156 -0.874 1.00 64.13 C
ATOM 5667 OE1 GLN M 84 -44.231 14.474 -1.474 1.00 60.30 O
ATOM 5668 NE2 GLN M 84 -46.501 14.639 -1.212 1.00 53.40 N
ATOM 5669 C GLN M 84 -45.512 15.817 3.241 1.00 64.80 C
ATOM 5670 O GLN M 84 -45.051 15.673 4.372 1.00 68.95 O
ATOM 5671 N PRO M 85 -46.628 16.544 3.007 1.00 67.85 N
ATOM 5672 CA PRO M 85 -47.328 17.198 4.115 1.00 68.67 C
ATOM 5673 CB PRO M 85 -48.495 17.942 3.435 1.00 71.50 C
ATOM 5674 CG PRO M 85 -48.506 17.520 2.010 1.00 71.55 C
ATOM 5675 CD PRO M 85 -47.135 17.006 1.701 1.00 69.27 C
ATOM 5676 C PRO M 85 -47.837 16.241 5.179 1.00 65.58 C
ATOM 5677 O PRO M 85 -47.748 16.553 6.366 1.00 70.45 O
ATOM 5678 N GLU M 86 -48.306 15.068 4.771 1.00 61.15 N
ATOM 5679 CA GLU M 86 -48.796 14.067 5.749 1.00 55.89 C
ATOM 5680 CB GLU M 86 -49.828 13.094 5.138 1.00 62.82 C
ATOM 5681 CG GLU M 86 -49.362 12.205 3.976 1.00 64.46 C
ATOM 5682 CD GLU M 86 -49.308 12.905 2.625 1.00 68.23 C
ATOM 5683 OE1 GLU M 86 -49.798 14.064 2.468 1.00 65.26 O
ATOM 5684 OE2 GLU M 86 -48.736 12.282 1.706 1.00 79.60 O
ATOM 5685 C GLU M 86 -47.664 13.320 6.496 1.00 53.60 C
ATOM 5686 O GLU M 86 -47.947 12.480 7.366 1.00 54.73 O
ATOM 5687 N ASP M 87 -46.398 13.661 6.232 1.00 48.43 N
ATOM 5688 CA ASP M 87 -45.285 13.113 7.026 1.00 55.86 C
ATOM 5689 CB ASP M 87 -44.046 12.953 6.130 1.00 56.66 C
ATOM 5690 CG ASP M 87 -44.317 12.124 4.869 1.00 60.35 C
ATOM 5691 OD1 ASP M 87 -45.407 11.503 4.732 1.00 58.55 O
ATOM 5692 OD2 ASP M 87 -43.428 12.118 3.985 1.00 60.66 O
ATOM 5693 C ASP M 87 -44.936 13.954 8.281 1.00 56.58 C
ATOM 5694 O ASP M 87 -43.912 13.721 8.918 1.00 56.25 O
ATOM 5695 N PHE M 88 -45.744 14.968 8.591 1.00 59.90 N
ATOM 5696 CA PHE M 88 -45.653 15.651 9.854 1.00 61.49 C
ATOM 5697 CB PHE M 88 -46.711 16.754 9.974 1.00 68.42 C
ATOM 5698 CG PHE M 88 -47.046 17.129 11.402 1.00 71.28 C

ATOM 5699 CD1 PHE M 88 -46.064 17.685 12.243 1.00 70.19 C
ATOM 5700 CE1 PHE M 88 -46.351 18.020 13.554 1.00 67.29 C
ATOM 5701 CZ PHE M 88 -47.637 17.808 14.044 1.00 67.08 C
ATOM 5702 CE2 PHE M 88 -48.631 17.263 13.228 1.00 73.09 C
ATOM 5703 CD2 PHE M 88 -48.337 16.924 11.911 1.00 72.04 C
ATOM 5704 C PHE M 88 -45.857 14.598 10.927 1.00 57.82 C
ATOM 5705 O PHE M 88 -46.929 13.961 10.997 1.00 51.63 O
ATOM 5706 N ALA M 89 -44.819 14.419 11.745 1.00 51.33 N
ATOM 5707 CA ALA M 89 -44.878 13.466 12.830 1.00 51.45 C
ATOM 5708 CB ALA M 89 -45.159 12.066 12.260 1.00 61.15 C
ATOM 5709 C ALA M 89 -43.613 13.464 13.685 1.00 49.29 C
ATOM 5710 O ALA M 89 -42.651 14.203 13.432 1.00 56.98 O
ATOM 5711 N THR M 90 -43.636 12.616 14.695 1.00 48.69 N
ATOM 5712 CA THR M 90 -42.463 12.249 15.460 1.00 56.13 C
ATOM 5713 CB THR M 90 -42.800 12.306 16.969 1.00 57.11 C
ATOM 5714 OG1 THR M 90 -43.398 13.576 17.252 1.00 59.80 O
ATOM 5715 CG2 THR M 90 -41.554 12.150 17.823 1.00 59.69 C
ATOM 5716 C THR M 90 -42.010 10.835 15.015 1.00 57.41 C
ATOM 5717 O THR M 90 -42.838 9.961 14.729 1.00 56.27 O
ATOM 5718 N TYR M 91 -40.699 10.628 14.940 1.00 54.40 N
ATOM 5719 CA TYR M 91 -40.130 9.408 14.394 1.00 52.03 C
ATOM 5720 CB TYR M 91 -39.402 9.683 13.049 1.00 55.08 C
ATOM 5721 CG TYR M 91 -40.324 10.127 11.931 1.00 50.78 C
ATOM 5722 CD1 TYR M 91 -40.667 11.465 11.773 1.00 53.03 C
ATOM 5723 CE1 TYR M 91 -41.531 11.888 10.760 1.00 56.35 C
ATOM 5724 CZ TYR M 91 -42.083 10.948 9.895 1.00 57.24 C
ATOM 5725 OH TYR M 91 -42.936 11.340 8.911 1.00 51.99 O
ATOM 5726 CE2 TYR M 91 -41.790 9.598 10.048 1.00 55.35 C
ATOM 5727 CD2 TYR M 91 -40.898 9.196 11.061 1.00 55.54 C
ATOM 5728 C TYR M 91 -39.141 8.857 15.386 1.00 59.51 C
ATOM 5729 O TYR M 91 -38.242 9.572 15.833 1.00 59.76 O
ATOM 5730 N TYR M 92 -39.294 7.576 15.703 1.00 58.52 N
ATOM 5731 CA TYR M 92 -38.478 6.911 16.699 1.00 58.65 C
ATOM 5732 CB TYR M 92 -39.366 6.329 17.808 1.00 58.24 C
ATOM 5733 CG TYR M 92 -40.227 7.323 18.577 1.00 56.83 C
ATOM 5734 CD1 TYR M 92 -41.492 7.740 18.088 1.00 54.13 C
ATOM 5735 CE1 TYR M 92 -42.279 8.663 18.809 1.00 61.83 C

ATOM 5736 CZ TYR M 92 -41.800 9.159 20.068 1.00 60.34 C
ATOM 5737 OH TYR M 92 -42.536 10.042 20.829 1.00 53.30 O
ATOM 5738 CE2 TYR M 92 -40.559 8.743 20.557 1.00 52.77 C
ATOM 5739 CD2 TYR M 92 -39.782 7.843 19.822 1.00 54.61 C
ATOM 5740 C TYR M 92 -37.730 5.759 16.050 1.00 57.11 C
ATOM 5741 O TYR M 92 -38.339 4.922 15.394 1.00 53.52 O
ATOM 5742 N CYS M 93 -36.418 5.698 16.249 1.00 56.17 N
ATOM 5743 CA CYS M 93 -35.715 4.453 16.052 1.00 56.33 C
ATOM 5744 CB CYS M 93 -34.250 4.674 15.764 1.00 65.17 C
ATOM 5745 SG CYS M 93 -33.213 5.375 17.058 1.00 63.40 S
ATOM 5746 C CYS M 93 -35.923 3.513 17.236 1.00 58.48 C
ATOM 5747 O CYS M 93 -36.405 3.896 18.303 1.00 57.14 O
ATOM 5748 N PHE M 94 -35.583 2.257 17.022 1.00 55.45 N
ATOM 5749 CA PHE M 94 -35.911 1.230 17.966 1.00 54.57 C
ATOM 5750 CB PHE M 94 -37.357 0.810 17.739 1.00 59.51 C
ATOM 5751 CG PHE M 94 -37.744 -0.480 18.418 1.00 57.25 C
ATOM 5752 CD1 PHE M 94 -37.456 -1.700 17.836 1.00 53.36 C
ATOM 5753 CE1 PHE M 94 -37.786 -2.879 18.459 1.00 59.61 C
ATOM 5754 CZ PHE M 94 -38.446 -2.851 19.674 1.00 61.67 C
ATOM 5755 CE2 PHE M 94 -38.751 -1.631 20.259 1.00 63.09 C
ATOM 5756 CD2 PHE M 94 -38.397 -0.458 19.630 1.00 64.49 C
ATOM 5757 C PHE M 94 -34.942 0.080 17.766 1.00 59.76 C
ATOM 5758 O PHE M 94 -34.516 -0.178 16.652 1.00 71.67 O
ATOM 5759 N GLN M 95 -34.559 -0.574 18.855 1.00 56.96 N
ATOM 5760 CA GLN M 95 -33.772 -1.760 18.766 1.00 53.97 C
ATOM 5761 CB GLN M 95 -32.323 -1.547 19.240 1.00 55.68 C
ATOM 5762 CG GLN M 95 -32.129 -1.435 20.746 1.00 57.70 C
ATOM 5763 CD GLN M 95 -32.062 -2.766 21.449 1.00 56.26 C
ATOM 5764 OE1 GLN M 95 -31.646 -3.767 20.873 1.00 58.52 O
ATOM 5765 NE2 GLN M 95 -32.498 -2.789 22.700 1.00 52.00 N
ATOM 5766 C GLN M 95 -34.482 -2.842 19.528 1.00 54.57 C
ATOM 5767 O GLN M 95 -35.137 -2.574 20.534 1.00 54.87 O
ATOM 5768 N GLY M 96 -34.355 -4.061 18.999 1.00 58.32 N
ATOM 5769 CA GLY M 96 -34.933 -5.261 19.581 1.00 57.12 C
ATOM 5770 C GLY M 96 -34.049 -6.481 19.513 1.00 54.58 C
ATOM 5771 O GLY M 96 -34.567 -7.591 19.501 1.00 56.39 O
ATOM 5772 N SER M 97 -32.727 -6.281 19.509 1.00 54.90 N

ATOM 5773 CA SER M 97 -31.762 -7.381 19.549 1.00 58.16 C
ATOM 5774 CB SER M 97 -30.639 -7.123 18.563 1.00 57.87 C
ATOM 5775 OG SER M 97 -30.646 -5.784 18.238 1.00 56.58 O
ATOM 5776 C SER M 97 -31.163 -7.698 20.926 1.00 60.03 C
ATOM 5777 O SER M 97 -30.634 -8.798 21.129 1.00 56.30 O
ATOM 5778 N HIS M 98 -31.214 -6.747 21.849 1.00 62.83 N
ATOM 5779 CA HIS M 98 -30.703 -6.979 23.200 1.00 63.64 C
ATOM 5780 CB HIS M 98 -29.360 -6.313 23.382 1.00 62.92 C
ATOM 5781 CG HIS M 98 -28.314 -6.824 22.453 1.00 67.18 C
ATOM 5782 ND1 HIS M 98 -27.882 -8.132 22.471 1.00 72.11 N
ATOM 5783 CE1 HIS M 98 -26.965 -8.302 21.535 1.00 74.56 C
ATOM 5784 NE2 HIS M 98 -26.784 -7.146 20.918 1.00 78.34 N
ATOM 5785 CD2 HIS M 98 -27.618 -6.207 21.470 1.00 70.42 C
ATOM 5786 C HIS M 98 -31.686 -6.449 24.220 1.00 62.85 C
ATOM 5787 O HIS M 98 -31.948 -5.249 24.278 1.00 65.47 O
ATOM 5788 N VAL M 99 -32.243 -7.371 24.998 1.00 65.53 N
ATOM 5789 CA VAL M 99 -33.204 -7.061 26.046 1.00 71.70 C
ATOM 5790 CB VAL M 99 -33.770 -8.386 26.681 1.00 77.33 C
ATOM 5791 CG1 VAL M 99 -34.404 -8.180 28.059 1.00 84.73 C
ATOM 5792 CG2 VAL M 99 -34.788 -9.032 25.729 1.00 73.05 C
ATOM 5793 C VAL M 99 -32.503 -6.128 27.056 1.00 69.45 C
ATOM 5794 O VAL M 99 -31.296 -6.275 27.277 1.00 64.33 O
ATOM 5795 N PRO M 100 -33.212 -5.141 27.621 1.00 68.89 N
ATOM 5796 CA PRO M 100 -34.568 -4.785 27.241 1.00 62.73 C
ATOM 5797 CB PRO M 100 -35.056 -3.887 28.382 1.00 66.93 C
ATOM 5798 CG PRO M 100 -33.859 -3.600 29.206 1.00 69.77 C
ATOM 5799 CD PRO M 100 -32.953 -4.776 29.021 1.00 70.93 C
ATOM 5800 C PRO M 100 -34.605 -4.021 25.947 1.00 62.19 C
ATOM 5801 O PRO M 100 -33.759 -3.170 25.678 1.00 70.48 O
ATOM 5802 N VAL M 101 -35.566 -4.399 25.132 1.00 56.13 N
ATOM 5803 CA VAL M 101 -35.975 -3.651 23.978 1.00 58.93 C
ATOM 5804 CB VAL M 101 -37.306 -4.276 23.489 1.00 55.32 C
ATOM 5805 CG1 VAL M 101 -38.234 -3.251 22.914 1.00 58.39 C
ATOM 5806 CG2 VAL M 101 -37.048 -5.417 22.518 1.00 54.48 C
ATOM 5807 C VAL M 101 -36.088 -2.149 24.322 1.00 57.40 C
ATOM 5808 O VAL M 101 -36.662 -1.792 25.340 1.00 63.84 O
ATOM 5809 N THR M 102 -35.541 -1.288 23.470 1.00 58.86 N

ATOM 5810 CA THR M 102 -35.573 0.176 23.686 1.00 61.86 C
ATOM 5811 CB THR M 102 -34.226 0.656 24.264 1.00 60.61 C
ATOM 5812 OG1 THR M 102 -33.172 -0.053 23.601 1.00 59.30 O
ATOM 5813 CG2 THR M 102 -34.136 0.397 25.796 1.00 53.99 C
ATOM 5814 C THR M 102 -35.830 0.998 22.417 1.00 64.72 C
ATOM 5815 O THR M 102 -35.339 0.658 21.323 1.00 64.07 O
ATOM 5816 N PHE M 103 -36.581 2.089 22.596 1.00 62.10 N
ATOM 5817 CA PHE M 103 -36.800 3.120 21.581 1.00 58.43 C
ATOM 5818 CB PHE M 103 -38.196 3.684 21.717 1.00 61.36 C
ATOM 5819 CG PHE M 103 -39.283 2.737 21.334 1.00 64.14 C
ATOM 5820 CD1 PHE M 103 -39.783 2.734 20.040 1.00 60.16 C
ATOM 5821 CE1 PHE M 103 -40.825 1.892 19.698 1.00 64.23 C
ATOM 5822 CZ PHE M 103 -41.370 1.037 20.656 1.00 60.48 C
ATOM 5823 CE2 PHE M 103 -40.882 1.033 21.941 1.00 53.26 C
ATOM 5824 CD2 PHE M 103 -39.858 1.889 22.287 1.00 60.39 C
ATOM 5825 C PHE M 103 -35.865 4.299 21.755 1.00 57.33 C
ATOM 5826 O PHE M 103 -35.352 4.503 22.824 1.00 65.47 O
ATOM 5827 N GLY M 104 -35.690 5.113 20.718 1.00 60.31 N
ATOM 5828 CA GLY M 104 -34.939 6.384 20.838 1.00 58.61 C
ATOM 5829 C GLY M 104 -35.802 7.494 21.401 1.00 56.53 C
ATOM 5830 O GLY M 104 -36.975 7.283 21.637 1.00 61.06 O
ATOM 5831 N GLN M 105 -35.249 8.685 21.608 1.00 56.83 N
ATOM 5832 CA GLN M 105 -36.025 9.772 22.240 1.00 59.11 C
ATOM 5833 CB GLN M 105 -35.125 10.867 22.854 1.00 60.26 C
ATOM 5834 CG GLN M 105 -34.541 11.935 21.901 1.00 62.08 C
ATOM 5835 CD GLN M 105 -33.308 11.476 21.127 1.00 59.08 C
ATOM 5836 OE1 GLN M 105 -32.917 10.301 21.165 1.00 61.89 O
ATOM 5837 NE2 GLN M 105 -32.698 12.401 20.405 1.00 52.53 N
ATOM 5838 C GLN M 105 -37.033 10.395 21.296 1.00 64.42 C
ATOM 5839 O GLN M 105 -37.990 11.030 21.746 1.00 69.38 O
ATOM 5840 N GLY M 106 -36.788 10.254 19.994 1.00 66.06 N
ATOM 5841 CA GLY M 106 -37.704 10.719 18.955 1.00 68.12 C
ATOM 5842 C GLY M 106 -37.211 11.983 18.252 1.00 72.74 C
ATOM 5843 O GLY M 106 -36.300 12.675 18.759 1.00 66.84 O
ATOM 5844 N THR M 107 -37.791 12.258 17.073 1.00 71.61 N
ATOM 5845 CA THR M 107 -37.425 13.430 16.250 1.00 64.88 C
ATOM 5846 CB THR M 107 -36.427 13.088 15.125 1.00 64.02 C

ATOM 5847 OG1 THR M 107 -35.135 12.718 15.676 1.00 58.98 O
ATOM 5848 CG2 THR M 107 -36.245 14.290 14.201 1.00 67.33 C
ATOM 5849 C THR M 107 -38.677 14.026 15.663 1.00 66.75 C
ATOM 5850 O THR M 107 -39.370 13.360 14.891 1.00 74.42 O
ATOM 5851 N LYS M 108 -38.989 15.263 16.061 1.00 76.16 N
ATOM 5852 CA LYS M 108 -40.173 15.982 15.548 1.00 82.82 C
ATOM 5853 CB LYS M 108 -40.518 17.216 16.402 1.00 92.47 C
ATOM 5854 CG LYS M 108 -40.959 16.945 17.833 1.00100.71 C
ATOM 5855 CD LYS M 108 -40.926 18.231 18.660 1.00109.46 C
ATOM 5856 CE LYS M 108 -41.216 18.001 20.140 1.00113.00 C
ATOM 5857 NZ LYS M 108 -42.668 17.812 20.426 1.00110.07 N
ATOM 5858 C LYS M 108 -39.865 16.444 14.135 1.00 72.44 C
ATOM 5859 O LYS M 108 -38.748 16.899 13.880 1.00 75.64 O
ATOM 5860 N VAL M 109 -40.824 16.306 13.219 1.00 65.13 N
ATOM 5861 CA VAL M 109 -40.645 16.796 11.843 1.00 65.32 C
ATOM 5862 CB VAL M 109 -40.604 15.670 10.768 1.00 65.00 C
ATOM 5863 CG1 VAL M 109 -40.714 16.249 9.352 1.00 65.32 C
ATOM 5864 CG2 VAL M 109 -39.324 14.864 10.878 1.00 65.36 C
ATOM 5865 C VAL M 109 -41.786 17.749 11.562 1.00 66.23 C
ATOM 5866 O VAL M 109 -42.954 17.416 11.746 1.00 63.93 O
ATOM 5867 N GLU M 110 -41.423 18.935 11.094 1.00 75.32 N
ATOM 5868 CA GLU M 110 -42.355 20.011 10.876 1.00 73.20 C
ATOM 5869 CB GLU M 110 -41.975 21.202 11.771 1.00 82.87 C
ATOM 5870 CG GLU M 110 -43.074 22.242 11.977 1.00 88.86 C
ATOM 5871 CD GLU M 110 -42.555 23.590 12.495 1.00 96.93 C
ATOM 5872 OE1 GLU M 110 -42.973 24.624 11.915 1.00 91.55 O
ATOM 5873 OE2 GLU M 110 -41.751 23.620 13.469 1.00 93.78 O
ATOM 5874 C GLU M 110 -42.260 20.370 9.407 1.00 65.77 C
ATOM 5875 O GLU M 110 -41.182 20.482 8.849 1.00 67.66 O
ATOM 5876 N ILE M 111 -43.398 20.578 8.786 1.00 62.45 N
ATOM 5877 CA ILE M 111 -43.414 21.022 7.419 1.00 68.82 C
ATOM 5878 CB ILE M 111 -44.738 20.615 6.727 1.00 64.17 C
ATOM 5879 CG1 ILE M 111 -45.048 19.107 6.924 1.00 67.00 C
ATOM 5880 CD1 ILE M 111 -43.873 18.135 6.853 1.00 65.55 C
ATOM 5881 CG2 ILE M 111 -44.725 21.051 5.268 1.00 63.44 C
ATOM 5882 C ILE M 111 -43.312 22.548 7.409 1.00 74.24 C
ATOM 5883 O ILE M 111 -44.162 23.198 8.002 1.00 66.55 O

ATOM 5884 N LYS M 112 -42.305 23.121 6.731 1.00 76.69 N
ATOM 5885 CA LYS M 112 -42.386 24.552 6.357 1.00 74.01 C
ATOM 5886 CB LYS M 112 -41.060 25.309 6.502 1.00 75.62 C
ATOM 5887 CG LYS M 112 -39.883 24.847 5.684 1.00 78.57 C
ATOM 5888 CD LYS M 112 -38.595 25.545 6.123 1.00 78.27 C
ATOM 5889 CE LYS M 112 -38.607 27.019 5.746 1.00 83.95 C
ATOM 5890 NZ LYS M 112 -37.237 27.598 5.800 1.00 89.28 N
ATOM 5891 C LYS M 112 -43.080 24.827 5.010 1.00 73.43 C
ATOM 5892 O LYS M 112 -42.769 24.233 4.004 1.00 73.28 O
ATOM 5893 N ARG M 113 -44.037 25.746 5.036 1.00 70.91 N
ATOM 5894 CA ARG M 113 -44.864 26.092 3.888 1.00 69.62 C
ATOM 5895 CB ARG M 113 -46.310 25.636 4.129 1.00 70.22 C
ATOM 5896 CG ARG M 113 -46.924 26.227 5.399 1.00 68.59 C
ATOM 5897 CD ARG M 113 -48.404 25.966 5.596 1.00 70.83 C
ATOM 5898 NE ARG M 113 -49.335 26.149 4.470 1.00 76.56 N
ATOM 5899 CZ ARG M 113 -49.558 27.268 3.777 1.00 75.53 C
ATOM 5900 NH1 ARG M 113 -48.876 28.380 4.008 1.00 78.61 N
ATOM 5901 NH2 ARG M 113 -50.468 27.262 2.802 1.00 74.92 N
ATOM 5902 C ARG M 113 -44.775 27.619 3.669 1.00 73.59 C
ATOM 5903 O ARG M 113 -44.009 28.310 4.369 1.00 73.12 O
ATOM 5904 N THR M 114 -45.532 28.139 2.692 1.00 75.61 N
ATOM 5905 CA THR M 114 -45.604 29.591 2.443 1.00 74.49 C
ATOM 5906 CB THR M 114 -46.418 29.925 1.180 1.00 74.52 C
ATOM 5907 OG1 THR M 114 -47.661 29.221 1.226 1.00 68.15 O
ATOM 5908 CG2 THR M 114 -45.659 29.527 -0.089 1.00 78.13 C
ATOM 5909 C THR M 114 -46.271 30.287 3.630 1.00 81.52 C
ATOM 5910 O THR M 114 -47.088 29.676 4.330 1.00 80.14 O
ATOM 5911 N VAL M 115 -45.925 31.554 3.860 1.00 78.05 N
ATOM 5912 CA VAL M 115 -46.517 32.306 4.958 1.00 74.68 C
ATOM 5913 CB VAL M 115 -45.699 33.564 5.319 1.00 77.27 C
ATOM 5914 CG1 VAL M 115 -46.367 34.271 6.484 1.00 79.38 C
ATOM 5915 CG2 VAL M 115 -44.244 33.208 5.704 1.00 73.62 C
ATOM 5916 C VAL M 115 -47.985 32.645 4.643 1.00 75.87 C
ATOM 5917 O VAL M 115 -48.286 33.139 3.559 1.00 73.44 O
ATOM 5918 N ALA M 116 -48.884 32.324 5.583 1.00 78.74 N
ATOM 5919 CA ALA M 116 -50.318 32.656 5.490 1.00 84.36 C
ATOM 5920 CB ALA M 116 -51.121 31.458 5.003 1.00 81.43 C

ATOM 5921 C ALA M 116 -50.851 33.149 6.846 1.00 86.93 C
ATOM 5922 O ALA M 116 -50.347 32.744 7.907 1.00 89.66 O
ATOM 5923 N ALA M 117 -51.877 34.001 6.793 1.00 79.90 N
ATOM 5924 CA ALA M 117 -52.380 34.730 7.969 1.00 82.41 C
ATOM 5925 CB ALA M 117 -52.578 36.200 7.634 1.00 85.14 C
ATOM 5926 C ALA M 117 -53.689 34.141 8.511 1.00 82.84 C
ATOM 5927 O ALA M 117 -54.471 33.559 7.757 1.00 76.09 O
ATOM 5928 N PRO M 118 -53.945 34.317 9.824 1.00 84.59 N
ATOM 5929 CA PRO M 118 -55.139 33.710 10.427 1.00 83.82 C
ATOM 5930 CB PRO M 118 -54.902 33.894 11.936 1.00 78.30 C
ATOM 5931 CG PRO M 118 -54.035 35.102 12.041 1.00 79.62 C
ATOM 5932 CD PRO M 118 -53.180 35.127 10.798 1.00 82.78 C
ATOM 5933 C PRO M 118 -56.418 34.414 10.024 1.00 82.84 C
ATOM 5934 O PRO M 118 -56.411 35.633 9.931 1.00 84.15 O
ATOM 5935 N SER M 119 -57.477 33.649 9.751 1.00 90.91 N
ATOM 5936 CA SER M 119 -58.859 34.154 9.810 1.00 98.42 C
ATOM 5937 CB SER M 119 -59.869 33.168 9.191 1.00 94.95 C
ATOM 5938 OG SER M 119 -59.735 33.054 7.791 1.00 97.94 O
ATOM 5939 C SER M 119 -59.203 34.341 11.293 1.00110.46 C
ATOM 5940 O SER M 119 -59.490 33.360 11.983 1.00121.04 O
ATOM 5941 N VAL M 120 -59.175 35.584 11.776 1.00112.91 N
ATOM 5942 CA VAL M 120 -59.377 35.874 13.202 1.00103.63 C
ATOM 5943 CB VAL M 120 -58.722 37.194 13.667 1.00104.25 C
ATOM 5944 CG1 VAL M 120 -58.753 37.284 15.192 1.00110.93 C
ATOM 5945 CG2 VAL M 120 -57.287 37.309 13.178 1.00102.05 C
ATOM 5946 C VAL M 120 -60.865 35.958 13.503 1.00104.99 C
ATOM 5947 O VAL M 120 -61.636 36.513 12.722 1.00 95.88 O
ATOM 5948 N PHE M 121 -61.256 35.371 14.630 1.00113.83 N
ATOM 5949 CA PHE M 121 -62.604 35.502 15.181 1.00116.53 C
ATOM 5950 CB PHE M 121 -63.402 34.194 15.024 1.00112.35 C
ATOM 5951 CG PHE M 121 -63.873 33.887 13.610 1.00117.57 C
ATOM 5952 CD1 PHE M 121 -62.967 33.539 12.601 1.00116.61 C
ATOM 5953 CE1 PHE M 121 -63.414 33.229 11.315 1.00116.16 C
ATOM 5954 CZ PHE M 121 -64.780 33.233 11.026 1.00115.13 C
ATOM 5955 CE2 PHE M 121 -65.699 33.552 12.019 1.00116.86 C
ATOM 5956 CD2 PHE M 121 -65.249 33.868 13.302 1.00127.00 C
ATOM 5957 C PHE M 121 -62.472 35.859 16.679 1.00122.89 C

ATOM 5958 O PHE M 121 -61.390 35.730 17.277 1.00115.57 O
ATOM 5959 N ILE M 122 -63.573 36.334 17.258 1.00120.91 N
ATOM 5960 CA ILE M 122 -63.710 36.526 18.711 1.00116.45 C
ATOM 5961 CB ILE M 122 -63.180 37.908 19.186 1.00116.27 C
ATOM 5962 CG1 ILE M 122 -63.122 37.991 20.727 1.00112.97 C
ATOM 5963 CD1 ILE M 122 -62.441 39.245 21.262 1.00106.92 C
ATOM 5964 CG2 ILE M 122 -64.005 39.060 18.617 1.00115.32 C
ATOM 5965 C ILE M 122 -65.185 36.340 19.063 1.00120.98 C
ATOM 5966 O ILE M 122 -66.062 36.678 18.257 1.00115.24 O
ATOM 5967 N PHE M 123 -65.452 35.757 20.234 1.00133.03 N
ATOM 5968 CA PHE M 123 -66.831 35.634 20.759 1.00151.41 C
ATOM 5969 CB PHE M 123 -67.559 34.342 20.307 1.00162.83 C
ATOM 5970 CG PHE M 123 -66.668 33.302 19.683 1.00173.87 C
ATOM 5971 CD1 PHE M 123 -65.678 32.675 20.430 1.00181.08 C
ATOM 5972 CE1 PHE M 123 -64.859 31.713 19.855 1.00185.93 C
ATOM 5973 CZ PHE M 123 -65.036 31.352 18.526 1.00182.86 C
ATOM 5974 CE2 PHE M 123 -66.028 31.960 17.773 1.00180.73 C
ATOM 5975 CD2 PHE M 123 -66.839 32.923 18.349 1.00177.73 C
ATOM 5976 C PHE M 123 -66.876 35.761 22.283 1.00142.79 C
ATOM 5977 O PHE M 123 -66.370 34.882 22.993 1.00133.66 O
ATOM 5978 N PRO M 124 -67.476 36.865 22.790 1.00134.60 N
ATOM 5979 CA PRO M 124 -67.777 36.941 24.212 1.00125.48 C
ATOM 5980 CB PRO M 124 -68.435 38.321 24.352 1.00127.69 C
ATOM 5981 CG PRO M 124 -67.828 39.133 23.262 1.00129.03 C
ATOM 5982 CD PRO M 124 -67.713 38.164 22.123 1.00131.66 C
ATOM 5983 C PRO M 124 -68.719 35.817 24.649 1.00112.23 C
ATOM 5984 O PRO M 124 -69.375 35.197 23.801 1.00 95.18 O
ATOM 5985 N PRO M 125 -68.782 35.545 25.963 1.00116.36 N
ATOM 5986 CA PRO M 125 -69.531 34.386 26.449 1.00119.25 C
ATOM 5987 CB PRO M 125 -69.218 34.380 27.948 1.00121.46 C
ATOM 5988 CG PRO M 125 -68.976 35.813 28.269 1.00120.37 C
ATOM 5989 CD PRO M 125 -68.222 36.328 27.081 1.00115.88 C
ATOM 5990 C PRO M 125 -71.040 34.469 26.245 1.00117.70 C
ATOM 5991 O PRO M 125 -71.584 35.506 25.861 1.00113.08 O
ATOM 5992 N SER M 126 -71.697 33.355 26.526 1.00117.46 N
ATOM 5993 CA SER M 126 -73.147 33.262 26.491 1.00120.43 C
ATOM 5994 CB SER M 126 -73.520 31.775 26.479 1.00110.72 C

ATOM 5995 OG SER M 126 -72.964 31.125 27.611 1.00 93.28 O
ATOM 5996 C SER M 126 -73.778 33.981 27.706 1.00125.11 C
ATOM 5997 O SER M 126 -73.100 34.714 28.435 1.00124.53 O
ATOM 5998 N ASP M 127 -75.083 33.788 27.895 1.00133.25 N
ATOM 5999 CA ASP M 127 -75.760 34.110 29.162 1.00125.36 C
ATOM 6000 CB ASP M 127 -77.224 34.517 28.912 1.00124.15 C
ATOM 6001 CG ASP M 127 -77.366 35.616 27.854 1.00119.76 C
ATOM 6002 OD1 ASP M 127 -77.154 35.308 26.657 1.00119.62 O
ATOM 6003 OD2 ASP M 127 -77.699 36.772 28.213 1.00100.49 O
ATOM 6004 C ASP M 127 -75.692 32.924 30.155 1.00114.91 C
ATOM 6005 O ASP M 127 -75.804 33.130 31.363 1.00109.76 O
ATOM 6006 N GLU M 128 -75.498 31.701 29.651 1.00109.25 N
ATOM 6007 CA GLU M 128 -75.430 30.496 30.501 1.00116.43 C
ATOM 6008 CB GLU M 128 -75.662 29.235 29.670 1.00113.61 C
ATOM 6009 CG GLU M 128 -77.022 29.173 28.997 1.00121.74 C
ATOM 6010 CD GLU M 128 -76.948 28.564 27.608 1.00126.67 C
ATOM 6011 OE1 GLU M 128 -77.564 27.497 27.398 1.00123.77 O
ATOM 6012 OE2 GLU M 128 -76.266 29.152 26.730 1.00120.11 O
ATOM 6013 C GLU M 128 -74.124 30.323 31.303 1.00114.77 C
ATOM 6014 O GLU M 128 -74.160 29.810 32.418 1.00124.03 O
ATOM 6015 N GLN M 129 -72.978 30.698 30.738 1.00108.05 N
ATOM 6016 CA GLN M 129 -71.708 30.659 31.487 1.00108.47 C
ATOM 6017 CB GLN M 129 -70.487 30.744 30.551 1.00111.97 C
ATOM 6018 CG GLN M 129 -69.190 30.259 31.202 1.00111.54 C
ATOM 6019 CD GLN M 129 -67.912 30.841 30.619 1.00108.52 C
ATOM 6020 OE1 GLN M 129 -67.919 31.794 29.828 1.00103.31 O
ATOM 6021 NE2 GLN M 129 -66.790 30.275 31.040 1.00 96.27 N
ATOM 6022 C GLN M 129 -71.649 31.803 32.494 1.00100.46 C
ATOM 6023 O GLN M 129 -70.998 31.703 33.529 1.00 99.43 O
ATOM 6024 N LEU M 130 -72.319 32.894 32.148 1.00105.30 N
ATOM 6025 CA LEU M 130 -72.372 34.109 32.953 1.00107.48 C
ATOM 6026 CB LEU M 130 -73.043 35.195 32.096 1.00109.93 C
ATOM 6027 CG LEU M 130 -73.240 36.649 32.523 1.00112.40 C
ATOM 6028 CD1 LEU M 130 -73.107 37.537 31.286 1.00113.81 C
ATOM 6029 CD2 LEU M 130 -74.589 36.866 33.222 1.00108.19 C
ATOM 6030 C LEU M 130 -73.090 33.881 34.306 1.00103.67 C
ATOM 6031 O LEU M 130 -72.622 34.370 35.341 1.00 98.67 O

ATOM 6032 N LYS M 131 -74.196 33.121 34.283 1.00101.41 N
ATOM 6033 CA LYS M 131 -74.963 32.735 35.492 1.00 99.92 C
ATOM 6034 CB LYS M 131 -76.231 31.977 35.108 1.00 98.28 C
ATOM 6035 CG LYS M 131 -77.289 32.826 34.428 1.00110.14 C
ATOM 6036 CD LYS M 131 -78.318 31.967 33.699 1.00120.01 C
ATOM 6037 CE LYS M 131 -79.050 30.993 34.619 1.00122.97 C
ATOM 6038 NZ LYS M 131 -80.115 30.272 33.874 1.00123.79 N
ATOM 6039 C LYS M 131 -74.190 31.867 36.485 1.00103.49 C
ATOM 6040 O LYS M 131 -74.317 32.062 37.699 1.00 98.35 O
ATOM 6041 N SER M 132 -73.423 30.903 35.958 1.00110.73 N
ATOM 6042 CA SER M 132 -72.487 30.053 36.739 1.00112.49 C
ATOM 6043 CB SER M 132 -71.707 29.109 35.811 1.00116.69 C
ATOM 6044 OG SER M 132 -72.573 28.330 35.006 1.00118.48 O
ATOM 6045 C SER M 132 -71.468 30.842 37.576 1.00111.04 C
ATOM 6046 O SER M 132 -70.914 30.300 38.547 1.00100.74 O
ATOM 6047 N GLY M 133 -71.192 32.088 37.166 1.00100.57 N
ATOM 6048 CA GLY M 133 -70.473 33.052 37.990 1.00 93.44 C
ATOM 6049 C GLY M 133 -69.105 33.470 37.498 1.00 98.29 C
ATOM 6050 O GLY M 133 -68.403 34.173 38.225 1.00 95.50 O
ATOM 6051 N THR M 134 -68.705 33.031 36.296 1.00100.79 N
ATOM 6052 CA THR M 134 -67.478 33.534 35.635 1.00100.43 C
ATOM 6053 CB THR M 134 -66.238 32.588 35.802 1.00 98.55 C
ATOM 6054 OG1 THR M 134 -66.649 31.224 35.704 1.00 90.45 O
ATOM 6055 CG2 THR M 134 -65.479 32.808 37.158 1.00 93.22 C
ATOM 6056 C THR M 134 -67.735 33.795 34.146 1.00 98.62 C
ATOM 6057 O THR M 134 -68.761 33.384 33.582 1.00 90.39 O
ATOM 6058 N ALA M 135 -66.787 34.495 33.528 1.00 97.27 N
ATOM 6059 CA ALA M 135 -66.832 34.790 32.099 1.00103.21 C
ATOM 6060 CB ALA M 135 -67.086 36.273 31.887 1.00109.74 C
ATOM 6061 C ALA M 135 -65.531 34.358 31.393 1.00 97.12 C
ATOM 6062 O ALA M 135 -64.413 34.789 31.785 1.00 73.11 O
ATOM 6063 N SER M 136 -65.702 33.511 30.365 1.00 91.37 N
ATOM 6064 CA SER M 136 -64.626 33.122 29.442 1.00 91.82 C
ATOM 6065 CB SER M 136 -64.541 31.597 29.257 1.00 87.36 C
ATOM 6066 OG SER M 136 -63.877 30.943 30.330 1.00 79.06 O
ATOM 6067 C SER M 136 -64.891 33.770 28.084 1.00 94.42 C
ATOM 6068 O SER M 136 -65.884 33.434 27.413 1.00 90.96 O

ATOM 6069 N VAL M 137 -64.024 34.703 27.692 1.00 94.32 N
ATOM 6070 CA VAL M 137 -64.014 35.229 26.321 1.00106.09 C
ATOM 6071 CB VAL M 137 -63.838 36.768 26.278 1.00116.26 C
ATOM 6072 CG1 VAL M 137 -63.985 37.297 24.849 1.00116.28 C
ATOM 6073 CG2 VAL M 137 -64.833 37.465 27.202 1.00117.09 C
ATOM 6074 C VAL M 137 -62.878 34.548 25.529 1.00106.85 C
ATOM 6075 O VAL M 137 -61.721 34.501 25.987 1.00 93.82 O
ATOM 6076 N VAL M 138 -63.219 34.018 24.350 1.00101.61 N
ATOM 6077 CA VAL M 138 -62.277 33.252 23.529 1.00 97.53 C
ATOM 6078 CB VAL M 138 -62.816 31.852 23.175 1.00101.90 C
ATOM 6079 CG1 VAL M 138 -61.790 31.080 22.346 1.00104.02 C
ATOM 6080 CG2 VAL M 138 -63.179 31.073 24.437 1.00108.02 C
ATOM 6081 C VAL M 138 -61.980 33.980 22.233 1.00 90.57 C
ATOM 6082 O VAL M 138 -62.908 34.476 21.567 1.00 72.95 O
ATOM 6083 N CYS M 139 -60.686 34.017 21.893 1.00 94.14 N
ATOM 6084 CA CYS M 139 -60.189 34.538 20.610 1.00 99.75 C
ATOM 6085 CB CYS M 139 -59.165 35.641 20.843 1.00 98.77 C
ATOM 6086 SG CYS M 139 -58.837 36.576 19.334 1.00109.45 S
ATOM 6087 C CYS M 139 -59.545 33.450 19.729 1.00 97.51 C
ATOM 6088 O CYS M 139 -58.582 32.795 20.143 1.00 86.96 O
ATOM 6089 N LEU M 140 -60.048 33.313 18.502 1.00 93.83 N
ATOM 6090 CA LEU M 140 -59.630 32.262 17.575 1.00 86.81 C
ATOM 6091 CB LEU M 140 -60.886 31.630 16.983 1.00 82.69 C
ATOM 6092 CG LEU M 140 -60.876 30.245 16.299 1.00 80.08 C
ATOM 6093 CD1 LEU M 140 -61.493 30.393 14.910 1.00 72.08 C
ATOM 6094 CD2 LEU M 140 -59.519 29.546 16.227 1.00 74.43 C
ATOM 6095 C LEU M 140 -58.751 32.801 16.429 1.00 83.91 C
ATOM 6096 O LEU M 140 -59.165 33.715 15.727 1.00 78.39 O
ATOM 6097 N LEU M 141 -57.551 32.236 16.263 1.00 85.81 N
ATOM 6098 CA LEU M 141 -56.713 32.412 15.047 1.00 89.98 C
ATOM 6099 CB LEU M 141 -55.254 32.671 15.421 1.00 85.55 C
ATOM 6100 CG LEU M 141 -54.887 34.008 16.050 1.00 88.56 C
ATOM 6101 CD1 LEU M 141 -55.639 34.222 17.357 1.00 92.38 C
ATOM 6102 CD2 LEU M 141 -53.378 34.079 16.266 1.00 83.03 C
ATOM 6103 C LEU M 141 -56.770 31.134 14.179 1.00 89.09 C
ATOM 6104 O LEU M 141 -56.179 30.115 14.544 1.00 88.06 O
ATOM 6105 N ASN M 142 -57.461 31.186 13.037 1.00 82.97 N

ATOM 6106 CA ASN M 142 -57.763 29.971 12.259 1.00 83.34 C
ATOM 6107 CB ASN M 142 -59.228 30.006 11.825 1.00 84.99 C
ATOM 6108 CG ASN M 142 -59.767 28.644 11.444 1.00 83.90 C
ATOM 6109 OD1 ASN M 142 -59.550 27.656 12.148 1.00 83.55 O
ATOM 6110 ND2 ASN M 142 -60.516 28.595 10.344 1.00 85.00 N
ATOM 6111 C ASN M 142 -56.892 29.825 11.018 1.00 75.93 C
ATOM 6112 O ASN M 142 -56.912 30.709 10.178 1.00 72.37 O
ATOM 6113 N ASN M 143 -56.156 28.709 10.913 1.00 75.03 N
ATOM 6114 CA ASN M 143 -55.409 28.296 9.677 1.00 74.77 C
ATOM 6115 CB ASN M 143 -56.385 28.007 8.520 1.00 75.00 C
ATOM 6116 CG ASN M 143 -57.253 26.785 8.788 1.00 80.73 C
ATOM 6117 OD1 ASN M 143 -56.751 25.706 9.104 1.00 85.52 O
ATOM 6118 ND2 ASN M 143 -58.555 26.949 8.656 1.00 78.08 N
ATOM 6119 C ASN M 143 -54.286 29.239 9.213 1.00 67.60 C
ATOM 6120 O ASN M 143 -54.491 30.060 8.309 1.00 72.27 O
ATOM 6121 N PHE M 144 -53.103 29.109 9.822 1.00 62.45 N
ATOM 6122 CA PHE M 144 -52.002 30.060 9.586 1.00 60.86 C
ATOM 6123 CB PHE M 144 -52.166 31.251 10.555 1.00 60.63 C
ATOM 6124 CG PHE M 144 -51.941 30.917 12.012 1.00 57.90 C
ATOM 6125 CD1 PHE M 144 -53.000 30.544 12.841 1.00 60.12 C
ATOM 6126 CE1 PHE M 144 -52.780 30.268 14.191 1.00 58.42 C
ATOM 6127 CZ PHE M 144 -51.492 30.352 14.718 1.00 61.61 C
ATOM 6128 CE2 PHE M 144 -50.443 30.751 13.910 1.00 58.75 C
ATOM 6129 CD2 PHE M 144 -50.677 31.035 12.569 1.00 58.01 C
ATOM 6130 C PHE M 144 -50.611 29.455 9.732 1.00 58.66 C
ATOM 6131 O PHE M 144 -50.436 28.446 10.418 1.00 70.82 O
ATOM 6132 N TYR M 145 -49.614 30.066 9.096 1.00 60.33 N
ATOM 6133 CA TYR M 145 -48.206 29.608 9.230 1.00 60.23 C
ATOM 6134 CB TYR M 145 -47.801 28.628 8.084 1.00 64.10 C
ATOM 6135 CG TYR M 145 -46.418 28.002 8.316 1.00 63.93 C
ATOM 6136 CD1 TYR M 145 -45.219 28.688 7.987 1.00 61.36 C
ATOM 6137 CE1 TYR M 145 -43.968 28.138 8.281 1.00 61.40 C
ATOM 6138 CZ TYR M 145 -43.914 26.865 8.888 1.00 60.29 C
ATOM 6139 OH TYR M 145 -42.724 26.233 9.200 1.00 57.30 O
ATOM 6140 CE2 TYR M 145 -45.080 26.191 9.216 1.00 58.01 C
ATOM 6141 CD2 TYR M 145 -46.309 26.751 8.934 1.00 60.78 C
ATOM 6142 C TYR M 145 -47.340 30.832 9.157 1.00 55.58 C

ATOM 6143 O TYR M 145 -47.672 31.699 8.348 1.00 66.80 O
ATOM 6144 N PRO M 146 -46.254 30.954 9.932 1.00 57.88 N
ATOM 6145 CA PRO M 146 -45.777 29.990 10.947 1.00 70.48 C
ATOM 6146 CB PRO M 146 -44.333 30.474 11.239 1.00 67.57 C
ATOM 6147 CG PRO M 146 -44.089 31.666 10.355 1.00 62.48 C
ATOM 6148 CD PRO M 146 -45.432 32.174 9.944 1.00 58.33 C
ATOM 6149 C PRO M 146 -46.608 29.947 12.258 1.00 81.93 C
ATOM 6150 O PRO M 146 -47.636 30.635 12.358 1.00 77.80 O
ATOM 6151 N ARG M 147 -46.179 29.127 13.229 1.00 83.90 N
ATOM 6152 CA ARG M 147 -46.907 28.995 14.510 1.00 92.71 C
ATOM 6153 CB ARG M 147 -46.462 27.754 15.329 1.00 95.93 C
ATOM 6154 CG ARG M 147 -45.091 27.798 16.012 1.00105.02 C
ATOM 6155 CD ARG M 147 -44.827 26.505 16.776 1.00105.80 C
ATOM 6156 NE ARG M 147 -45.653 26.422 17.991 1.00114.67 N
ATOM 6157 CZ ARG M 147 -46.317 25.342 18.438 1.00119.99 C
ATOM 6158 NH1 ARG M 147 -46.312 24.180 17.779 1.00122.17 N
ATOM 6159 NH2 ARG M 147 -47.026 25.427 19.566 1.00108.88 N
ATOM 6160 C ARG M 147 -46.798 30.285 15.327 1.00 93.66 C
ATOM 6161 O ARG M 147 -47.781 30.731 15.914 1.00 83.16 O
ATOM 6162 N GLU M 148 -45.607 30.890 15.264 1.00104.10 N
ATOM 6163 CA GLU M 148 -45.217 32.073 16.029 1.00104.80 C
ATOM 6164 CB GLU M 148 -43.777 32.505 15.692 1.00100.20 C
ATOM 6165 CG GLU M 148 -42.678 31.565 16.201 1.00100.94 C
ATOM 6166 CD GLU M 148 -42.441 30.315 15.342 1.00102.67 C
ATOM 6167 OE1 GLU M 148 -41.971 29.304 15.905 1.00100.08 O
ATOM 6168 OE2 GLU M 148 -42.713 30.323 14.117 1.00 89.16 O
ATOM 6169 C GLU M 148 -46.169 33.251 15.811 1.00111.73 C
ATOM 6170 O GLU M 148 -46.449 33.669 14.675 1.00103.45 O
ATOM 6171 N ALA M 149 -46.664 33.756 16.934 1.00116.93 N
ATOM 6172 CA ALA M 149 -47.571 34.891 16.985 1.00120.12 C
ATOM 6173 CB ALA M 149 -48.951 34.487 16.476 1.00119.30 C
ATOM 6174 C ALA M 149 -47.650 35.346 18.440 1.00118.23 C
ATOM 6175 O ALA M 149 -47.399 34.550 19.351 1.00113.23 O
ATOM 6176 N LYS M 150 -47.950 36.620 18.665 1.00115.08 N
ATOM 6177 CA LYS M 150 -48.430 37.043 19.979 1.00112.81 C
ATOM 6178 CB LYS M 150 -47.465 38.009 20.692 1.00108.70 C
ATOM 6179 CG LYS M 150 -47.263 39.367 20.045 1.00112.30 C

ATOM 6180 CD LYS M 150 -46.338 40.234 20.891 1.00113.24 C
ATOM 6181 CE LYS M 150 -46.398 41.691 20.462 1.00115.57 C
ATOM 6182 NZ LYS M 150 -45.214 42.458 20.937 1.00117.12 N
ATOM 6183 C LYS M 150 -49.846 37.603 19.819 1.00106.78 C
ATOM 6184 O LYS M 150 -50.120 38.389 18.895 1.00100.30 O
ATOM 6185 N VAL M 151 -50.746 37.115 20.675 1.00 92.29 N
ATOM 6186 CA VAL M 151 -52.048 37.725 20.897 1.00101.97 C
ATOM 6187 CB VAL M 151 -53.169 36.667 20.947 1.00105.54 C
ATOM 6188 CG1 VAL M 151 -54.534 37.321 21.137 1.00107.69 C
ATOM 6189 CG2 VAL M 151 -53.157 35.817 19.691 1.00112.29 C
ATOM 6190 C VAL M 151 -51.973 38.453 22.247 1.00101.66 C
ATOM 6191 O VAL M 151 -51.637 37.840 23.265 1.00 91.09 O
ATOM 6192 N GLN M 152 -52.228 39.763 22.235 1.00106.66 N
ATOM 6193 CA GLN M 152 -52.435 40.556 23.463 1.00107.58 C
ATOM 6194 CB GLN M 152 -51.422 41.720 23.558 1.00105.29 C
ATOM 6195 CG GLN M 152 -50.145 41.357 24.328 1.00102.83 C
ATOM 6196 CD GLN M 152 -48.980 42.314 24.099 1.00100.61 C
ATOM 6197 OE1 GLN M 152 -48.745 42.787 22.987 1.00 98.46 O
ATOM 6198 NE2 GLN M 152 -48.228 42.584 25.158 1.00 97.90 N
ATOM 6199 C GLN M 152 -53.900 41.038 23.562 1.00109.47 C
ATOM 6200 O GLN M 152 -54.508 41.463 22.573 1.00 98.39 O
ATOM 6201 N TRP M 153 -54.475 40.909 24.757 1.00109.66 N
ATOM 6202 CA TRP M 153 -55.814 41.420 25.027 1.00111.64 C
ATOM 6203 CB TRP M 153 -56.523 40.581 26.084 1.00102.41 C
ATOM 6204 CG TRP M 153 -56.840 39.188 25.676 1.00 89.19 C
ATOM 6205 CD1 TRP M 153 -56.002 38.114 25.733 1.00 84.05 C
ATOM 6206 NE1 TRP M 153 -56.659 36.982 25.311 1.00 85.45 N
ATOM 6207 CE2 TRP M 153 -57.949 37.311 24.967 1.00 82.96 C
ATOM 6208 CD2 TRP M 153 -58.101 38.696 25.186 1.00 83.50 C
ATOM 6209 CE3 TRP M 153 -59.342 39.292 24.903 1.00 82.50 C
ATOM 6210 CZ3 TRP M 153 -60.389 38.486 24.406 1.00 81.62 C
ATOM 6211 CH2 TRP M 153 -60.200 37.105 24.193 1.00 77.80 C
ATOM 6212 CZ2 TRP M 153 -58.999 36.503 24.475 1.00 77.23 C
ATOM 6213 C TRP M 153 -55.704 42.863 25.508 1.00117.12 C
ATOM 6214 O TRP M 153 -54.733 43.232 26.185 1.00119.91 O
ATOM 6215 N LYS M 154 -56.699 43.672 25.150 1.00131.96 N
ATOM 6216 CA LYS M 154 -56.724 45.091 25.506 1.00134.82 C

ATOM 6217 CB LYS M 154 -56.579 45.965 24.250 1.00137.29 C
ATOM 6218 CG LYS M 154 -55.156 46.071 23.722 1.00139.84 C
ATOM 6219 CD LYS M 154 -54.268 46.960 24.592 1.00134.32 C
ATOM 6220 CE LYS M 154 -52.800 46.761 24.277 1.00135.03 C
ATOM 6221 NZ LYS M 154 -52.521 46.892 22.816 1.00138.51 N
ATOM 6222 C LYS M 154 -58.009 45.419 26.238 1.00127.32 C
ATOM 6223 O LYS M 154 -59.009 45.730 25.600 1.00121.17 O
ATOM 6224 N VAL M 155 -57.962 45.313 27.570 1.00128.58 N
ATOM 6225 CA VAL M 155 -59.021 45.816 28.463 1.00137.50 C
ATOM 6226 CB VAL M 155 -59.166 44.947 29.766 1.00130.38 C
ATOM 6227 CG1 VAL M 155 -59.549 45.772 30.996 1.00134.19 C
ATOM 6228 CG2 VAL M 155 -60.185 43.823 29.564 1.00113.66 C
ATOM 6229 C VAL M 155 -58.697 47.307 28.719 1.00141.62 C
ATOM 6230 O VAL M 155 -57.610 47.628 29.222 1.00137.84 O
ATOM 6231 N ASP M 156 -59.645 48.190 28.370 1.00143.38 N
ATOM 6232 CA ASP M 156 -59.449 49.659 28.272 1.00143.91 C
ATOM 6233 CB ASP M 156 -59.777 50.364 29.606 1.00147.67 C
ATOM 6234 CG ASP M 156 -61.233 50.180 30.048 1.00141.31 C
ATOM 6235 OD1 ASP M 156 -62.140 50.074 29.192 1.00139.25 O
ATOM 6236 OD2 ASP M 156 -61.467 50.160 31.276 1.00132.35 O
ATOM 6237 C ASP M 156 -58.042 50.031 27.778 1.00139.11 C
ATOM 6238 O ASP M 156 -57.307 50.773 28.436 1.00140.84 O
ATOM 6239 N ASN M 157 -57.690 49.487 26.615 1.00131.31 N
ATOM 6240 CA ASN M 157 -56.333 49.567 26.035 1.00135.62 C
ATOM 6241 CB ASN M 157 -56.211 50.794 25.117 1.00132.62 C
ATOM 6242 CG ASN M 157 -57.015 50.632 23.834 1.00128.66 C
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ATOM 6256 CD1 LEU M 159 -49.581 46.148 26.717 1.00132.79 C
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ATOM 6258 C LEU M 159 -52.545 44.097 29.845 1.00126.07 C
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ATOM 6271 CB SER M 161 -49.844 40.535 34.161 1.00121.35 C
ATOM 6272 OG SER M 161 -48.425 40.568 34.284 1.00123.94 O
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ATOM 6276 CA GLY M 162 -51.732 36.496 33.719 1.00101.98 C
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ATOM 6295 CB GLN M 165 -54.842 29.704 29.320 1.00 91.06 C
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ATOM 6310 O GLU M 166 -52.407 27.819 25.310 1.00 87.83 O
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ATOM 6313 CB SER M 167 -54.975 25.756 23.585 1.00 83.79 C
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ATOM 6316 O SER M 167 -54.372 26.819 20.866 1.00 67.35 O
ATOM 6317 N VAL M 168 -52.480 25.636 21.195 1.00 89.99 N
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ATOM 6320 CG1 VAL M 168 -50.407 26.288 18.102 1.00 90.42 C
ATOM 6321 CG2 VAL M 168 -49.998 26.698 20.529 1.00 95.29 C
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ATOM 6323 O VAL M 168 -51.946 23.175 19.644 1.00 75.16 O
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ATOM 6351 CB ASP M 172 -53.759 20.822 9.075 1.00 67.39 C
ATOM 6352 CG ASP M 172 -54.845 20.031 8.320 1.00 76.51 C
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ATOM 6361 C SER M 173 -51.890 17.209 6.309 1.00 77.99 C
ATOM 6362 O SER M 173 -51.040 16.922 5.476 1.00 90.61 O
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ATOM 6382 CB SER M 176 -48.222 22.395 6.094 1.00 71.43 C
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ATOM 6384 C SER M 176 -49.609 23.636 7.884 1.00 74.17 C
ATOM 6385 O SER M 176 -48.601 24.272 8.241 1.00 70.70 O
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ATOM 6399 CZ TYR M 178 -46.790 24.352 13.395 1.00 89.29 C
ATOM 6400 OH TYR M 178 -45.579 23.708 13.318 1.00100.12 O
ATOM 6401 CE2 TYR M 178 -47.048 25.417 12.545 1.00 86.78 C

ATOM 6402 CD2 TYR M 178 -48.272 26.077 12.613 1.00 81.63 C
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ATOM 6413 CB LEU M 180 -53.675 30.096 17.999 1.00 84.48 C
ATOM 6414 CG LEU M 180 -53.244 30.666 19.349 1.00 89.05 C
ATOM 6415 CD1 LEU M 180 -52.988 29.555 20.345 1.00 92.41 C
ATOM 6416 CD2 LEU M 180 -51.989 31.507 19.196 1.00 93.17 C
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ATOM 6433 CB THR M 183 -59.314 30.637 26.865 1.00 84.17 C
ATOM 6434 OG1 THR M 183 -59.447 29.749 25.745 1.00 83.97 O
ATOM 6435 CG2 THR M 183 -60.611 30.589 27.680 1.00 89.12 C
ATOM 6436 C THR M 183 -58.791 33.094 27.527 1.00 94.48 C
ATOM 6437 O THR M 183 -57.683 33.201 28.112 1.00 81.93 O
ATOM 6438 N LEU M 184 -59.860 33.842 27.832 1.00100.89 N

ATOM 6439 CA LEU M 184 -59.832 34.951 28.805 1.00109.25 C
ATOM 6440 CB LEU M 184 -60.234 36.271 28.129 1.00104.95 C
ATOM 6441 CG LEU M 184 -60.086 37.538 28.985 1.00115.05 C
ATOM 6442 CD1 LEU M 184 -58.684 37.679 29.580 1.00116.07 C
ATOM 6443 CD2 LEU M 184 -60.460 38.776 28.184 1.00109.28 C
ATOM 6444 C LEU M 184 -60.746 34.666 30.007 1.00108.50 C
ATOM 6445 O LEU M 184 -61.972 34.681 29.883 1.00 96.26 O
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ATOM 6447 CA THR M 185 -60.785 33.966 32.375 1.00126.10 C
ATOM 6448 CB THR M 185 -59.950 32.836 33.036 1.00132.77 C
ATOM 6449 OG1 THR M 185 -59.535 31.891 32.041 1.00131.90 O
ATOM 6450 CG2 THR M 185 -60.745 32.101 34.110 1.00128.44 C
ATOM 6451 C THR M 185 -60.913 35.123 33.369 1.00126.53 C
ATOM 6452 O THR M 185 -59.907 35.745 33.719 1.00129.52 O
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ATOM 6455 CB LEU M 186 -62.114 37.800 34.530 1.00120.88 C
ATOM 6456 CG LEU M 186 -62.239 38.221 33.058 1.00117.32 C
ATOM 6457 CD1 LEU M 186 -63.626 37.974 32.474 1.00116.29 C
ATOM 6458 CD2 LEU M 186 -61.853 39.683 32.919 1.00112.77 C
ATOM 6459 C LEU M 186 -63.816 36.182 35.511 1.00131.01 C
ATOM 6460 O LEU M 186 -64.666 35.511 34.910 1.00122.92 O
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ATOM 6462 CA SER M 187 -65.381 36.763 37.346 1.00132.56 C
ATOM 6463 CB SER M 187 -65.261 37.274 38.790 1.00123.21 C
ATOM 6464 OG SER M 187 -64.700 38.581 38.842 1.00120.33 O
ATOM 6465 C SER M 187 -66.436 37.591 36.594 1.00133.11 C
ATOM 6466 O SER M 187 -66.085 38.525 35.865 1.00142.83 O
ATOM 6467 N LYS M 188 -67.719 37.252 36.773 1.00126.18 N
ATOM 6468 CA LYS M 188 -68.838 38.054 36.226 1.00121.81 C
ATOM 6469 CB LYS M 188 -70.188 37.438 36.607 1.00119.28 C
ATOM 6470 CG LYS M 188 -71.402 38.282 36.242 1.00118.25 C
ATOM 6471 CD LYS M 188 -72.662 37.437 36.208 1.00125.50 C
ATOM 6472 CE LYS M 188 -73.928 38.282 36.219 1.00131.25 C
ATOM 6473 NZ LYS M 188 -74.294 38.720 37.592 1.00132.60 N
ATOM 6474 C LYS M 188 -68.784 39.519 36.684 1.00117.81 C
ATOM 6475 O LYS M 188 -69.206 40.408 35.945 1.00110.87 O

DEMANDE OU BREVET VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVET COMPREND PLUS D'UN TOME.

CECI EST LE TOME	1	DE	3
CONTENANT LES PAGES	1	À	231

NOTE : Pour les tomes additionels, veuillez contacter le Bureau canadien des brevets

JUMBO APPLICATIONS/PATENTS

THIS SECTION OF THE APPLICATION/PATENT CONTAINS MORE THAN ONE VOLUME

THIS IS VOLUME	1	OF	3
CONTAINING PAGES	1	TO	231

NOTE: For additional volumes, please contact the Canadian Patent Office

NOM DU FICHIER / FILE NAME :

NOTE POUR LE TOME / VOLUME NOTE:

What is claimed is:

1. An isolated antagonist antibody that specifically binds to complement factor D (CFD) and directly inhibits a proteolytic activity of CFD.

2. An isolated antagonist antibody that specifically binds to complement factor D (CFD), inhibits a proteolytic activity of CFD, and inhibits CFD binding to C3bB complex.

3. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein the antibody does not bind a human CFD mutant comprising mutations R157A and R207A.

4. An isolated antagonist antibody that binds an epitope on human CFD, wherein the epitope excludes positions R157 and R207.

5. An isolated antagonistic antibody comprising:

a heavy chain amino acid variable region that comprises SEQ ID NO: 183; and

a light chain amino acid variable region that comprises SEQ ID NO: 184.

6. An isolated antagonist antibody comprising:

a heavy chain variable region (VH) comprising a VH complementarity determining region one (CDR1), VH CDR2, and VH CDR3 of the VH having an amino acid sequence selected group the group consisting of SEQ ID NO: 541, SEQ ID NO: 542; and SEQ ID NO: 543; and

a light chain variable region (VL) comprising a VL CDR1, VL CDR2, and VL CDR3 of the VL having an amino acid sequence selected from the group consisting of SEQ ID NO: 544; SEQ ID NO: 545; and SEQ ID NO: 546.

7. The isolated antagonist antibody of claim 4, wherein the antibody comprises the following mutations based on EU numbering: L234A, L235A, and G237A.

8. An isolated antagonist antibody that specifically binds to CFD comprising:

a heavy chain variable region (VH); and

a light chain variable region (VL), wherein the antibody comprises the following mutations: L234A, L235A, and G237A.

9. The isolated antagonist antibody of claim 7, wherein the antibody has minimized binding to FC gamma receptors or C1q.

10. An isolated antagonist antibody that binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences shown in SEQ ID NO: 61 and SEQ ID NO: 62.

11. An isolated antagonist antibody that binds to CFD, wherein the antibody comprises:

a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 183, with or without the C-terminal lysine; and

a light chain comprising the amino acid sequence shown in SEQ ID NO: 184.

12. An isolated antagonist antibody that binds to CFD, wherein the antibody comprises a VH comprising the amino acid sequence shown in SEQ ID NO: 520, or a sequence that is at least 90% identical thereto, having amino acid substitutions in residues that are not within a CDR of SEQ ID NOs: 520 or 525.

13. An isolated antagonistic antibody that binds to CFD, the antibody comprising:

a CDR_H1 that is the CDR_H1 in SEQ ID NO: 520;

a CDR_H2 that is the CDR_H2 in SEQ ID NO: 520;

a CDR_H3 that is the CDR_H3 in SEQ ID NO: 520;

a CDR_L1 that is the CDR_L1 in SEQ ID NO: 525;

a CDR_L2 that is the CDR_L2 in SEQ ID NO: 525;

a CDR_L3 that is the CDR_L3 in SEQ ID NO: 525;

at least one of the following mutations (EU numbering): L234A, L235A, and G237A; and

at least one of the following mutations(EU numbering): Q347C or L443C.

14. The isolated antagonist antibody of any one of claims 1 to 12, wherein the antibody does not bind a human CFD mutant comprising the mutations R157A and R207A.

15. The isolated antagonist antibody of any one of claims 1 to 12, wherein the antibody binds a human CFD mutant comprising mutations R157A and R207A.

16. The isolated antagonist antibody of any one of claims 1 to 15, wherein the antibody blocks the alternative complement cascade.

17. The isolated antagonist antibody of any one of claims 1 to 16, wherein the antibody blocks C3bB binding to CFD.

18. The isolated antagonist antibody of any one of claims 1 to 17, wherein the antibody binds human CFD with an affinity of between about 0.1 pM to about 20 pM.

19. The isolated antagonist antibody of any one of claims 1 to 18, wherein the antibody binds human CFD with a koff at 37 degrees that is at least 5E-04.

20. The isolated antagonist antibody of any one of claims 1 to 19, wherein the heavy chain variable region of the antibody comprises three complementarity determining regions (CDRs) comprising the amino acid sequences shown in SEQ ID NO: 520.

21. The isolated antagonist antibody of any one of claims 1 to 20, wherein the light chain variable region of the antibody comprises three complementarity determining regions (CDRs) comprising the amino acid sequences shown in SEQ ID NO: 525.

22. The isolated antagonist antibody of any one of claims 1 to 21, wherein the heavy chain variable region (VH) of the antibody comprises three CDRs comprising the amino acid sequences shown in SEQ ID NO: 541, SEQ ID NO: 542, and SEQ ID NO: 543, and the light chain variable region (VL) of the antibody comprises three CDRs comprising the amino acid sequences shown in SEQ ID NO: 544, SEQ ID NO: 545, and SEQ ID NO: 546.

23. The isolated antagonist antibody of claim 22, wherein the VH comprises the amino acid sequences shown in SEQ ID NO: 520, and the light chain variable region of the antibody comprises three CDRs comprising the amino acid sequences shown in SEQ ID NO: 544, SEQ ID NO: 545 and SEQ ID NO: 546

24. The isolated antagonist antibody of claim 23, wherein the antibody comprises a VL comprising the amino acid sequence shown in SEQ ID NO: 525, or a variant thereof with one or several amino acid substitutions in amino acids that are not within a CDR.

25. The isolated antagonist antibody of any one of claims 1 to 24, wherein the antibody comprises a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 183, with or without the C-terminal lysine, and a light chain comprising the amino acid sequence shown in SEQ ID NO: 184.

26. The isolated antagonist antibody of any one of claims 1 to 25, wherein the antibody comprises a heavy chain constant domain comprising one or more mutations to reduce an effector function.

27. The isolated antagonist antibody of any one of claims 1 to 26, wherein the antibody comprises a heavy chain constant domain comprising one or more mutations to reduce an effector function related to a complement cascade.

28. The isolated antagonist antibody of claim 27, wherein the mutation(s) is located at one or more of the following amino acid positions (EU numbering): E233, L234, L235, G236, G237, A327, A330, and P331.

29. The isolated antagonist antibody of claim 28, wherein the mutation(s) is selected from the group consisting of E233P, L234V, L234A, L235A, G237A, A327G, A330S, and P331S.

30. The isolated antagonist antibody of claim 29, wherein the heavy chain constant domain further comprises a cysteine residue introduced by recombinant DNA technology.

31. The isolated antagonist antibody of claim 30, wherein the cysteine residue is selected from the group consisting of Q347C and L443C (EU numbering).

32. The isolated antagonist antibody of claim 31, wherein the cysteine residue is L443C (EU numbering).

33. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein the antibody is configured to provide a reduced complement reaction, wherein the antibody specifically binds to complement factor D (CFD), and wherein the antibody at least inhibits a proteolytic activity of CFD or inhibits CFD binding to C3bB complex.

34. The isolated antagonistic antibody of any one of claims 1 to 33, wherein the antibody comprises all three of the following mutations (EU numbering) L234A, L235A, and G237A, and wherein the antibody comprises L443C (EU numbering).

35. The isolated antagonistic antibody of any one of claims 1 to 34, wherein the antibody is a human IgG1, and wherein a heavy chain constant domain comprises one or more mutations that reduce an immune-mediated effector function.

36. A conjugate comprising:

(a) any of the isolated antagonistic antibodies from claims 1 to 35; and

(b) a polymer, wherein the polymer is covalently attached to the antibody.

37. A conjugate comprising:

(a) an isolated antagonist antibody that specifically binds to complement factor D (CFD); and

(b) a phosphorylcholine containing polymer, wherein the polymer is covalently bonded to the antibody.

38. A conjugate comprising:

(a) an isolated antagonist antibody that specifically binds to complement factor D (CFD); and

(b) a polymer comprising a zwitterionic monomer, wherein the zwitterionic monomer is selected from the group consisting of HEMA-phosphorylcholine, PEG, biocompatible fatty acids and derivatives thereof, Hydroxy Alkyl Starch (HAS), Hydroxy Ethyl Starch (HES), Poly Ethylene Glycol (PEG), Poly (Gly_x-Ser_y) (HAP), Hyaluronic acid (HA), Heparosan polymers (HEP), Fleximers, Dextran, Poly-sialic acids (PSA), Fc domains, Transferrin, 25 Albumin, Elastin like (ELP) peptides, XTEN polymers, PAS polymers, PA polymers, Albumin binding peptides, CTP peptides, and FcRn binding peptides.

39. A conjugate comprising an anti-CFD antibody and a polymer that is capable of blocking at least 80% of an interaction between CFD and C3bB.

40. A conjugate comprising (1) an anti-CFD antibody and (2) a phosphorylcholine containing polymer, wherein the polymer is covalently bonded to the antibody at a cysteine outside a variable region of the antibody wherein said cysteine has been added via recombinant DNA technology.

41. The conjugate of any one of claims 36 to 40, wherein the polymer comprises 2(methacryloyloxy)ethyl (2-(trimethylammonio)ethyl) phosphate (MPC) monomers.

42. The conjugate of any one of claims 36 to 41, wherein the polymer has a peak molecular weight between 300,000 and 1,750,000 Daltons as measured by size exclusion chromatography – multi angle light scattering (hereinafter "SEC-MALS").

43. The conjugate of any one of claims 36 to 42, wherein the polymer has a peak molecular weight between 500,000 and 1,000,000 Daltons as measured by SEC-MALS.

44. The conjugate of claim 43, wherein the polymer has a peak molecular weight between 600,000 to 800,000 Daltons as measured by SEC-MALS.

45. The conjugate of any one of claims 36 to 44, wherein the polymer has 2 or more arms.

46. The conjugate of any one of claims 36 to 45, wherein the polymer has 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12 arms.

47. The conjugate of claim 46, wherein the polymer has 9 arms.

48. The conjugate of any one of claims 36 to 47, wherein the antibody is the antibody of any one of claims 1-32.

49. The conjugate of any one of claims 36 to 48, wherein the antibody is an IgG.

50. The conjugate of claim 49, wherein the polymer is covalently bonded to a sulfhydryl group from a cysteine residue on the heavy chain the IgG.

51. The conjugate of any one of claims 36 to 50, wherein the antibody comprises a cysteine residue at position 347 or 443 (EU numbering).

52. The conjugate of claim 51, wherein the polymer is covalently bonded to a sulfhydryl group from a cysteine residue at position 347 or 443 (EU numbering).

53. The conjugate of any one of claims 36 to 52, wherein the antibody is further conjugated to a polymer to form a bioconjugate, and wherein the bioconjugate has a molecular weight between about 350,000 and 1,900,000 Daltons.

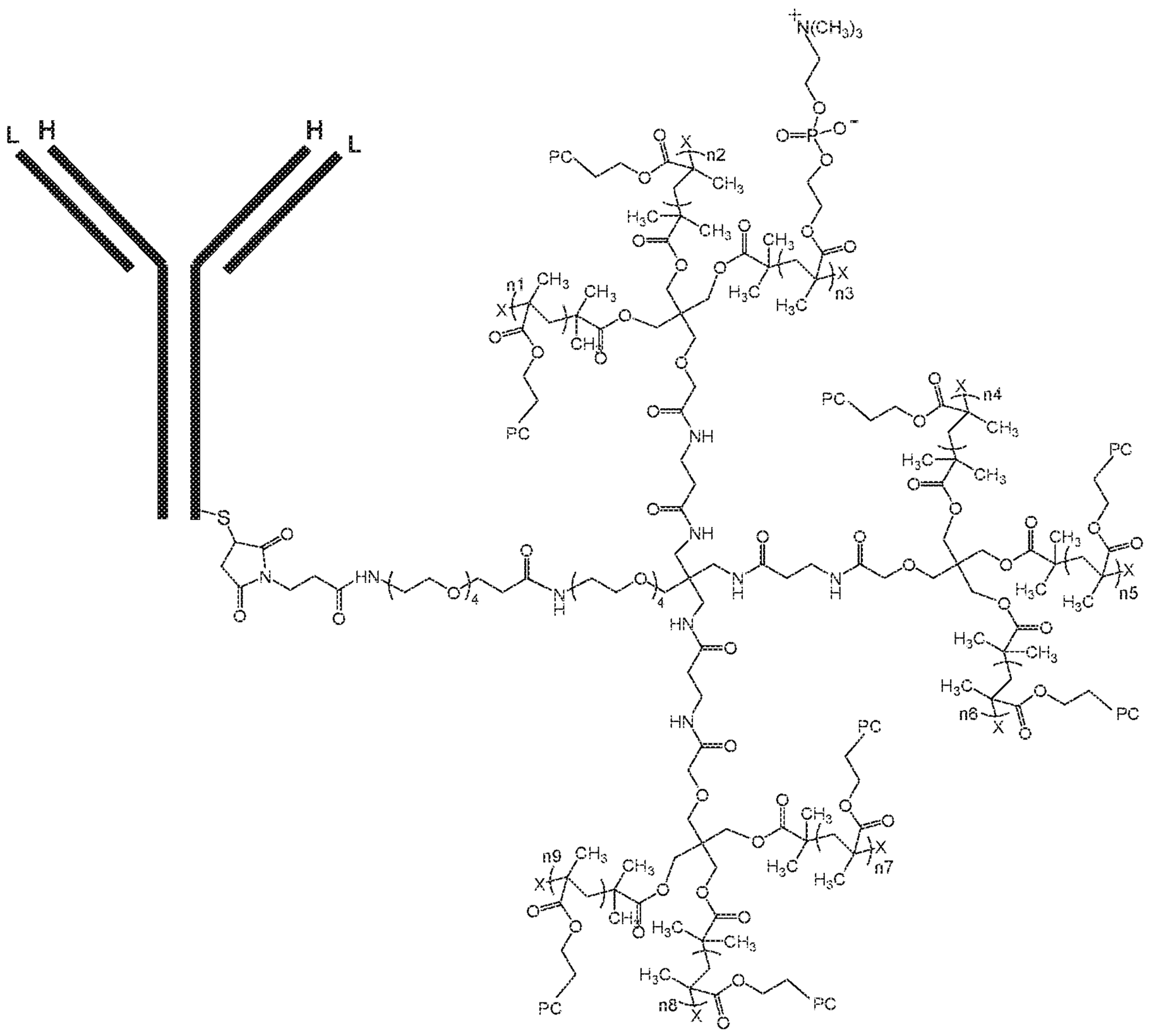
54. The conjugate any one of claims 36 to 53, wherein the PolyDispersity Index (PDI) is equal to or less than 1.5.

55. The conjugate of any one of claims 36 to 54, wherein

the polymer has 9 arms; and

the polymer has a molecular weight of between about 600,000 to about 900,000 Da.

56. The conjugate of any one of claims 36 to 55, which has the following structure:

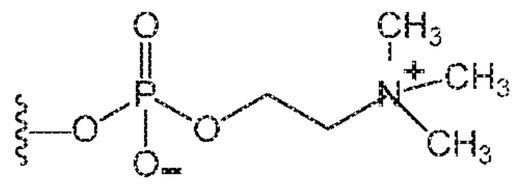


Formula (17)

wherein:

each heavy chain of the antibody is denoted by the letter H, and each light chain of the anti-CFD antibody is denoted by the letter L;

the polymer is bonded to the antibody through the sulfhydryl of C443 (EU numbering), which bond is depicted on one of the heavy chains;

PC is  , where the curvy line indicates the point of attachment to the rest of the polymer, where X=a) OR where R=H, methyl, ethyl, propyl, isopropyl, b) H, or c) any halide, including Br; and

n1, n2, n3, n4, n5, n6, n7, n8 and n9 are the same or different such that the sum of n1, n2, n3, n4, n5, n6, n6, n7, n8 and n9 is 2500 plus or minus 15%.

57. An isolated cell line that produces an isolated antagonistic antibody of any one of claims **Error! Reference source not found.** to 35.

58. The isolated cell line of claim 57, wherein the cell line is selected from the group consisting of CHO, k1SV, XCeed, CHOK1SV, and GS-KO.

59. An isolated nucleic acid encoding an isolated antagonistic antibody of any one of claims 1 to 35.

60. A recombinant expression vector comprising the nucleic acid of claim 59.

61. A host cell comprising the expression vector of claim 60.

62. A method of producing a CFD antagonist antibody, the method comprising: culturing a cell line that recombinantly produces an isolated antagonistic antibody of any one of claims 1 to 35 under conditions wherein the antibody is produced; and recovering the antibody.

63. A method of producing a CFD antagonist antibody, the method comprising:

culturing a cell line comprising nucleic acid encoding an antibody comprising a heavy chain comprising the amino acid sequence shown in SEQ ID NO: 520 and a light chain comprising the amino acid sequence shown in SEQ ID NO: 525 under conditions wherein the antibody is produced; and recovering the antibody.

64. The method of claim 63, wherein the heavy and light chains of the antibody are encoded on separate vectors.

65. The method of claim 64, wherein the heavy and light chains of the antibody are encoded on the same vector.

66. A pharmaceutical composition comprising an isolated antagonistic antibody of any one of claims 1 to 35 and/or a conjugate of any one of claims 36-56, and a pharmaceutically acceptable carrier.

67. The pharmaceutical composition of claim 66, wherein the composition is a liquid and has an endotoxin level less than about 0.2 EU/ml.

68. A pharmaceutical composition comprising an isolated antagonistic antibody of any one of claims 1 to 35 and a pharmaceutically acceptable carrier.

69. The pharmaceutical composition of claim 68, wherein the composition is a liquid and has an endotoxin level less than about 2.0, 1, 0.5, 0.2 EU/ml.

70. A method for the treatment or prophylaxis of a disease in a patient in need thereof, said method comprising administering to the patient an isolated antagonist antibody of any one of claims 1 to 35, and/or a conjugate of claims 36 to 56.

71. A method for the treatment or prophylaxis of a disease in a patient in need thereof, said method comprising:

identifying a patient having hyperactive CFD activity; and

administering to the patient an isolated antagonist antibody of any one of claims 1 to 35 and/or a conjugate of claims 36 to 56.

72. The method of claim 71, wherein the patient has a mutation in a complement pathway.

73. A method for the treatment or prophylaxis of a disease in a patient in need thereof, said method comprising administering to the patient a conjugate of any one of claims 36 to 56, and/or a composition of claims 66 to 69.

74. The method of any one of claims 70 to 73, wherein the disease is an ocular disorder.

75. The method of claim 74, wherein the ocular disorder is dry age related macular degeneration (dry AMD).

76. The method of claim 74, wherein the ocular disorder is selected from the group consisting of Wet AMD, Dry AMD, geographic atrophy, Maternally-inherited diabetes and deafness (MIDD).

77. The method of any one of claims 70 to 76, wherein the isolated antibody or the conjugate is administered no more frequently than once a month.

78. The method of any one of claims 70 to 76, wherein the isolated antibody or the conjugate is administered no more frequently than once every two months.

79. The method of any one of claims 70 to 76, wherein the isolated antibody or the conjugate is administered no more frequently than once every three months.

80. The method of any one of claims 70 to 76, wherein the isolated antibody or the conjugate is administered with a frequency between once a year and once every two months.

81. The method of any one of claims 70 to 76, wherein the subject has one or more risk factors selected from the group of cigarette smoking, exposure to hydroquinone (HQ), hypertension, atherosclerosis, high cholesterol, obesity, and fat intake.

82. An isolated antagonist antibody, wherein the antibody binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences shown in SEQ ID NO: 520 and SEQ ID NO: 525.

83. An isolated antagonist antibody that binds to CFD, wherein the antibody does not increase an enzymatic activity of CFD when bound thereto.

84. An isolated antagonist antibody, wherein the antibody competes for binding to human CFD with an antibody comprising the amino acid sequences shown in SEQ ID NO: 520 and SEQ ID NO: 525.

85. An isolated antagonist antibody that binds to CFD, wherein the antibody does not maintain an enzymatic activity of CFD when bound thereto.

86. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein when bound, the antibody is within 3A of residue 209 of SEQ ID NO: 1 of CFD.

87. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein when bound, the antibody is within 3A of residue 156 of SEQ ID NO: 1 of CFD.

88. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein the antibody binds to one or more of residues 156 or 209 of SEQ ID NO: 1 of CFD.

89. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein the antibody binds to both of residues 156 and 209 of SEQ ID NO: 1 of CFD.

90. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein the antibody, when bound to CFD, is not within 6 angstroms of at least one of 117, 118, and 156 of SEQ ID NO: 1.

91. An isolated antagonist antibody that specifically binds to complement factor D (CFD), wherein the antibody binds to CFD as described in Tables: 1.1, 0.1A, 0.1B, 0.1D, and/or 11.3.

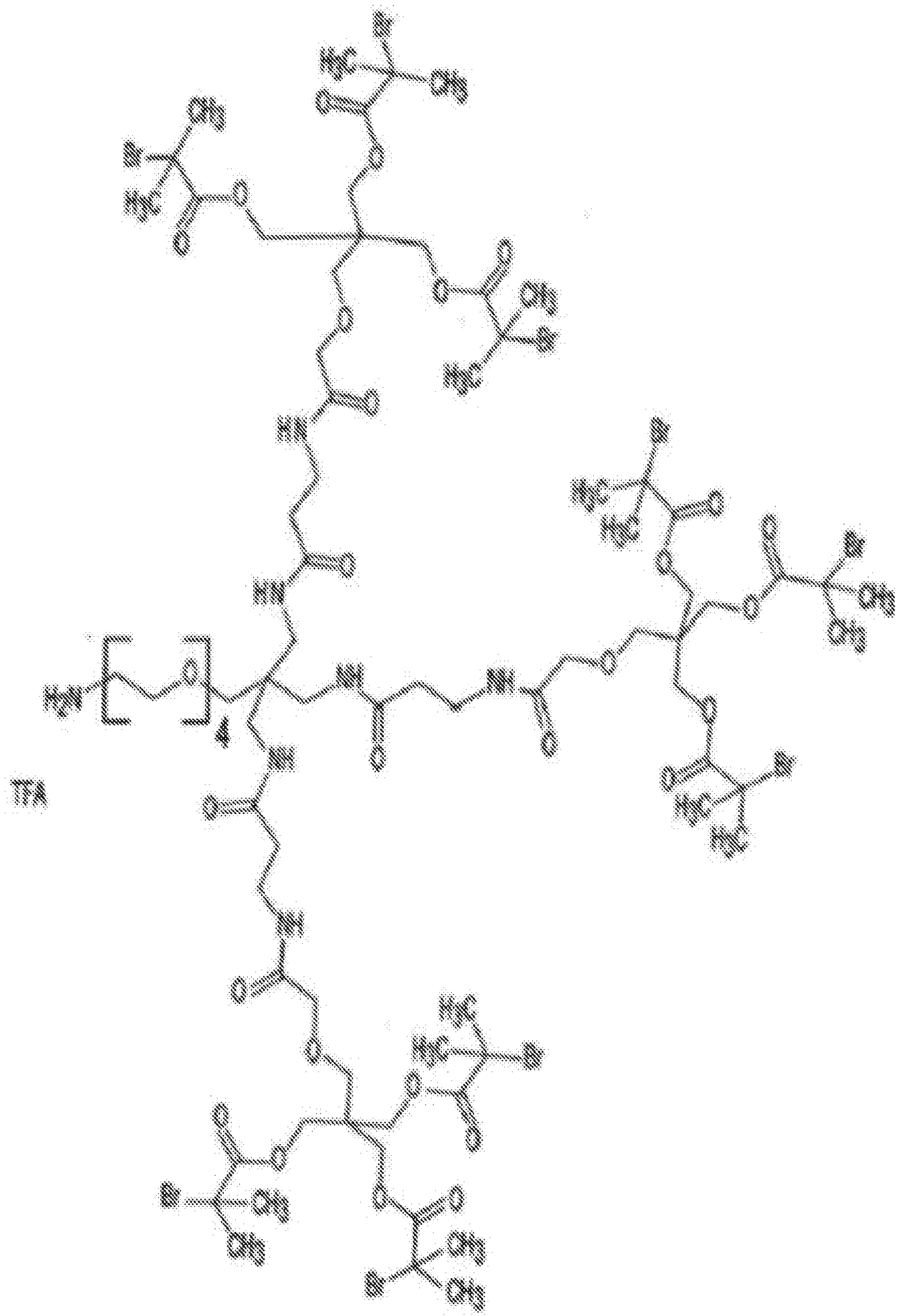
92. A crystalized CFD-antibody complex, wherein the antibody comprises any one or more of the CDRs within SEQ ID NO:s 183 and 184.

93. An isolated antagonist antibody that binds an epitope on human CFD that is the same as or overlaps with the epitope recognized by an antibody comprising the amino acid sequences shown in SEQ ID NO: 45 and SEQ ID NO: 46.

FIG. 1

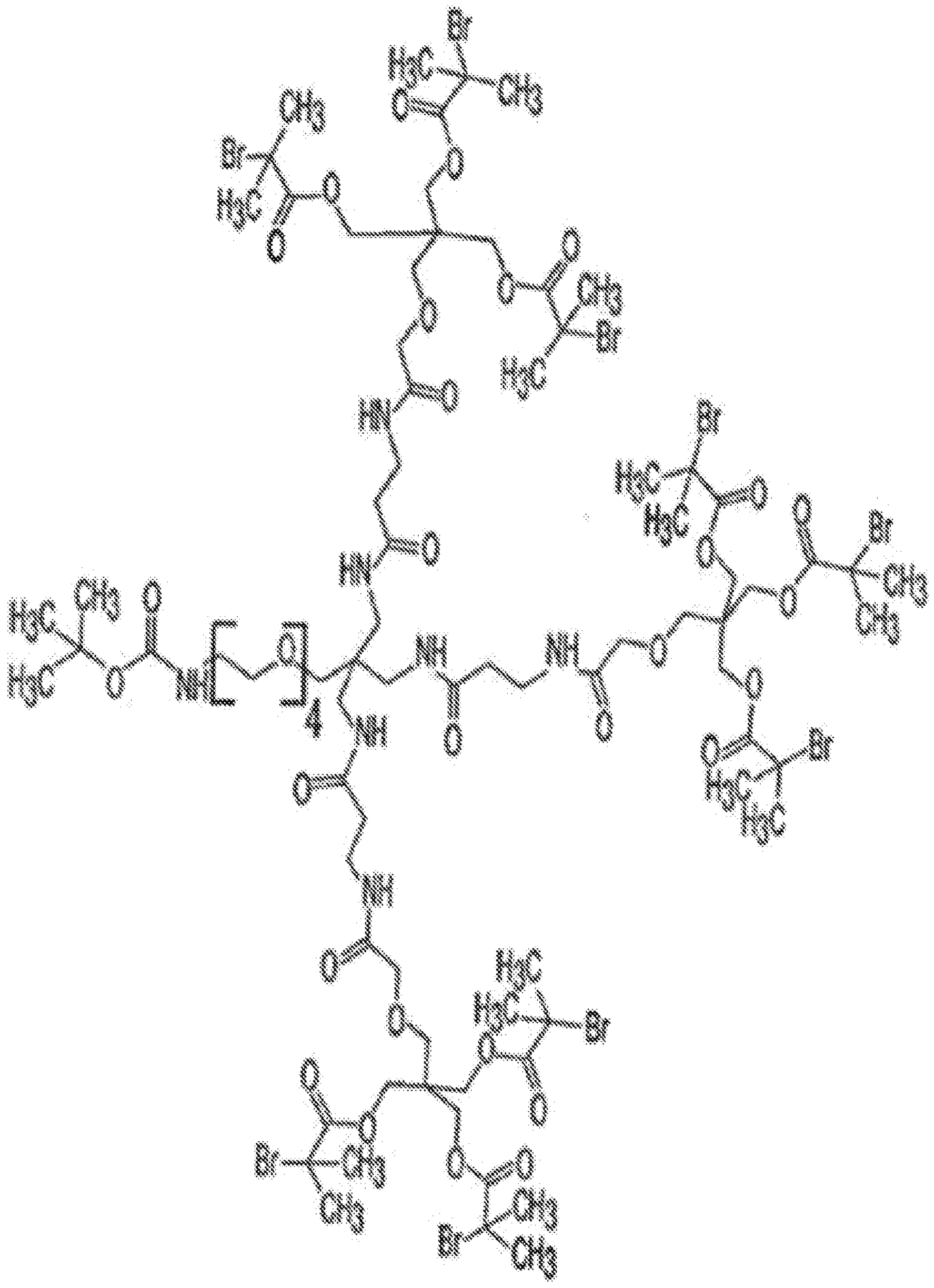
ILGGREAEAHARPYMASVQLNGAHLCGGVLVAEQWVLSAA
HCLEDAADGKVQVLLGAHSLSQPEPSKRLYDVLRAVPHPDS
QPDTIDHDLLLLQLSEKATLGPAVRPLPWQRVDRDVAPGTL
CDVAGWGIVNHAGRRPDSLQHVLLPVLDRATCNRRTHHDG
AITERLMCAESNRRDSCKGDSGGPLVCGGVLEGVVTSGSR
VCGNRKKPGIYTRVASYAAWIDSVLA **(SEQ ID NO: 1)**

FIG. 2A



COMPOUND L

FIG. 2B



COMPOUND K

FIG. 2C

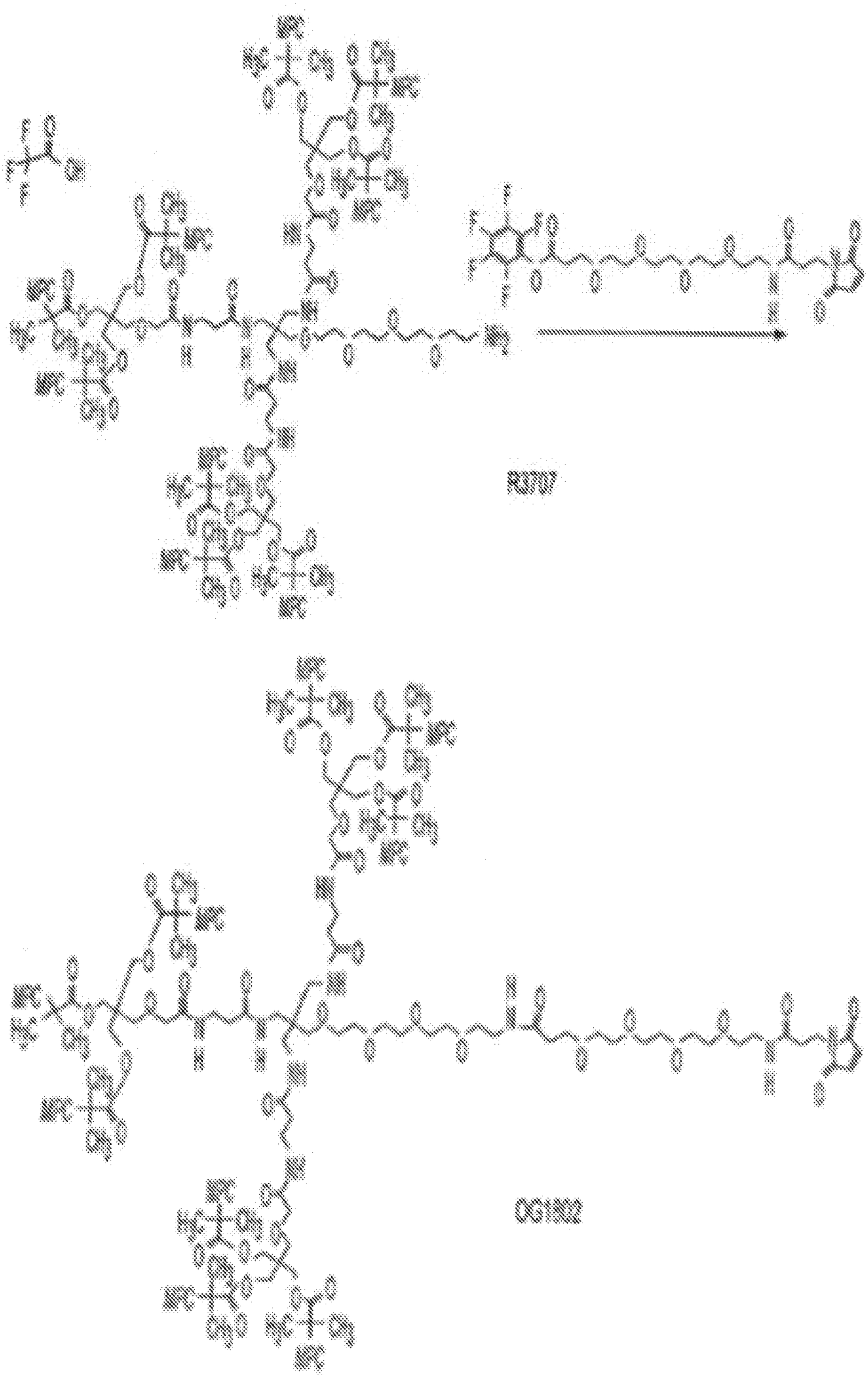
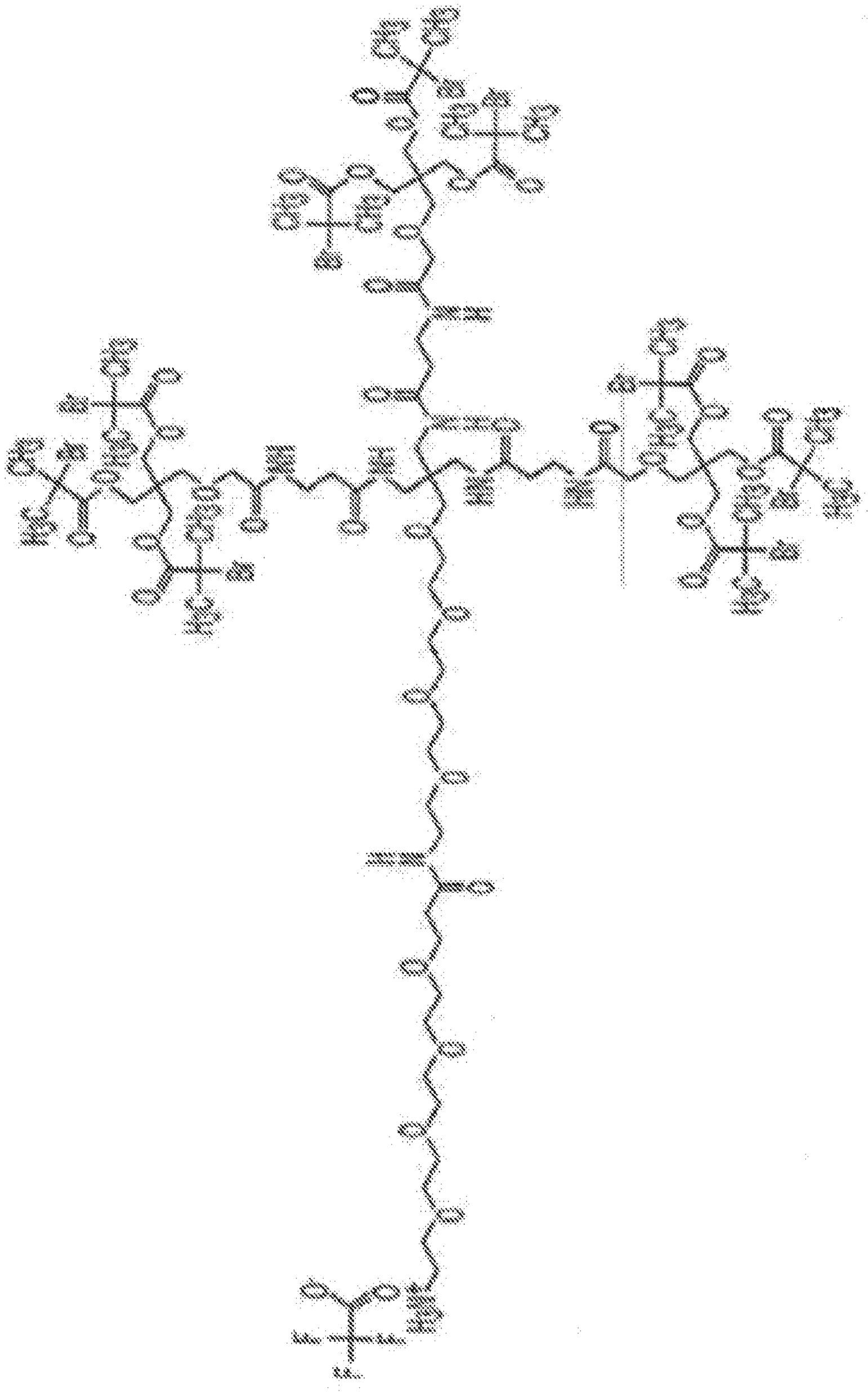


FIG. 2D



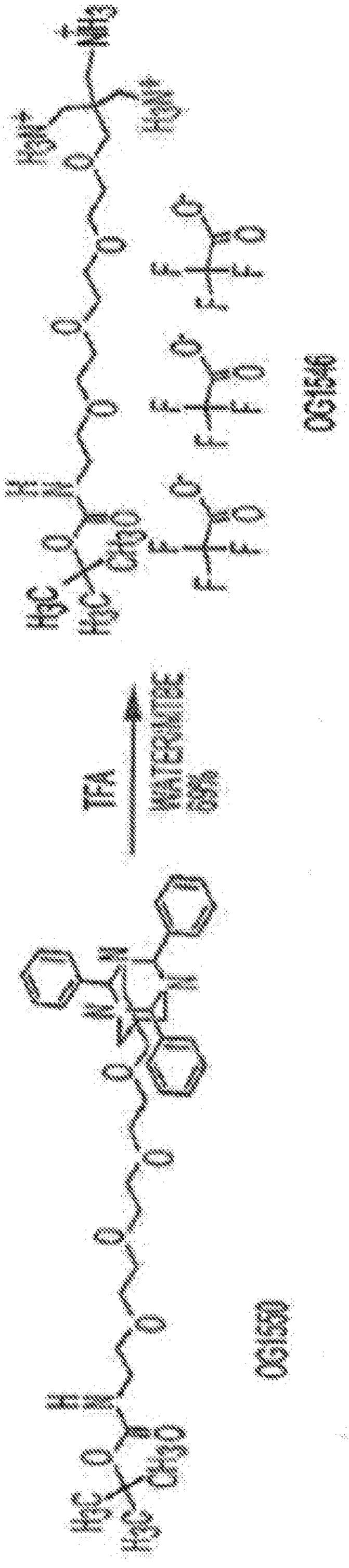
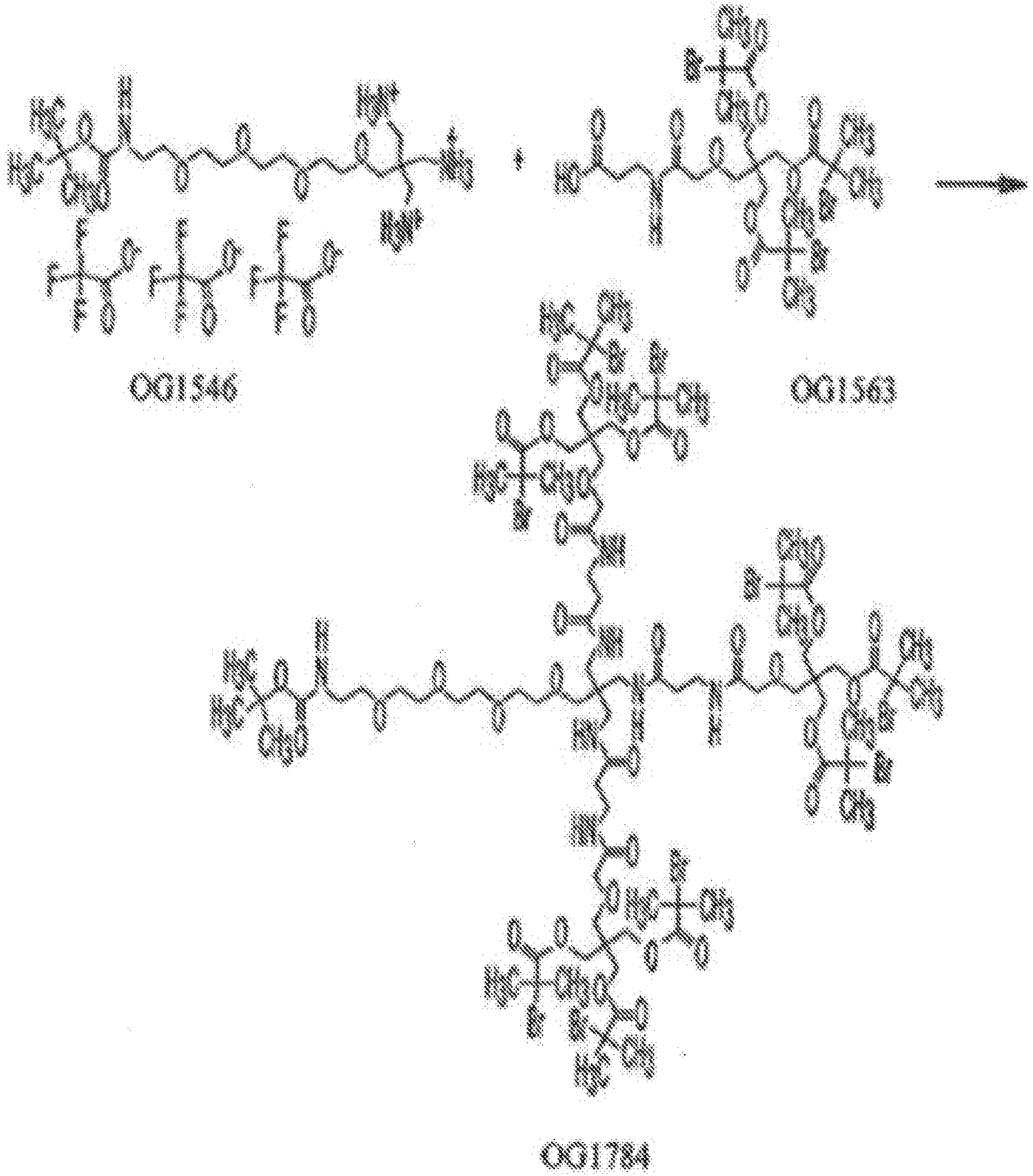


FIG 2E

FIG. 2F



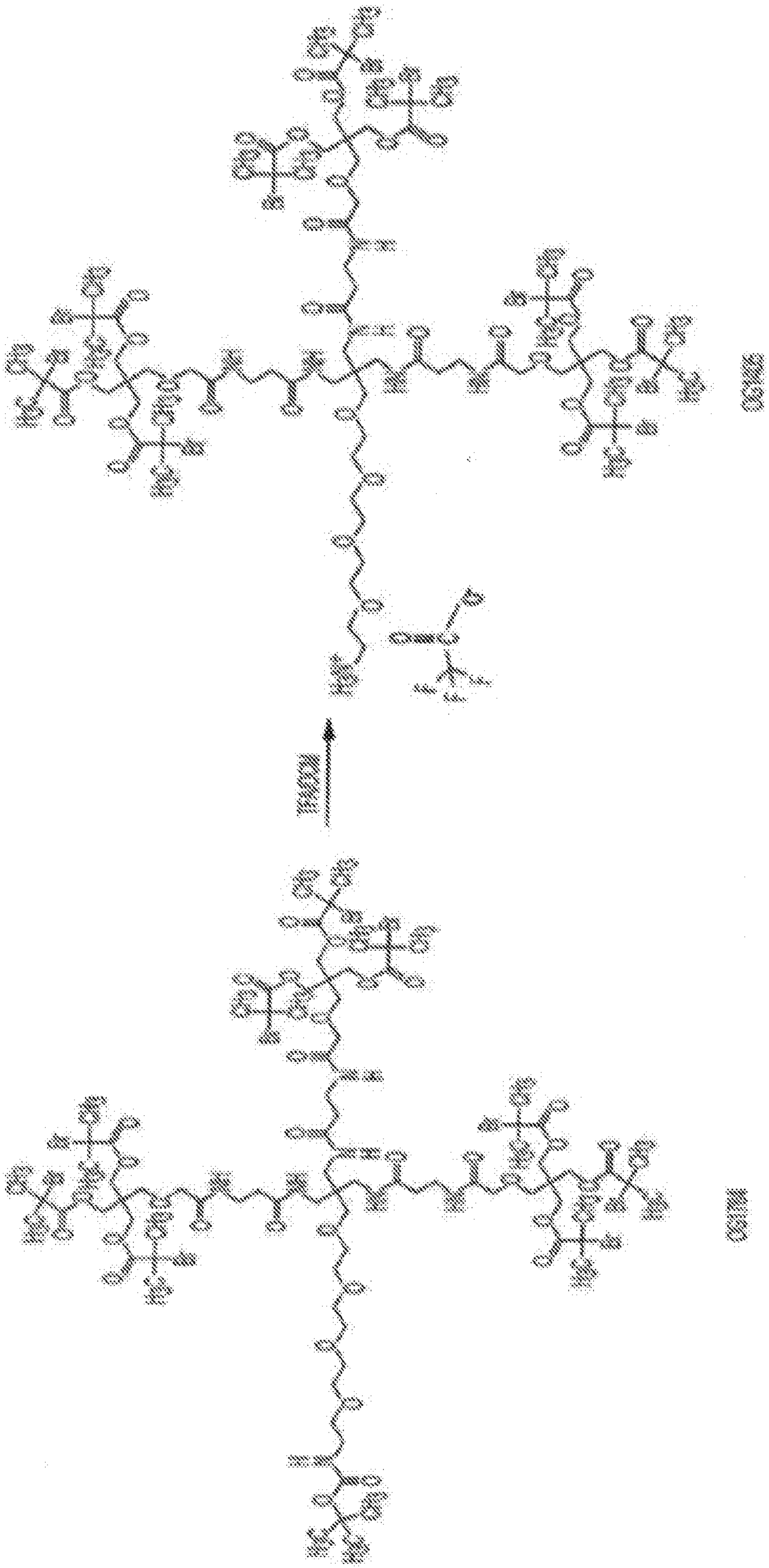


FIG. 2G

FIG. 2H

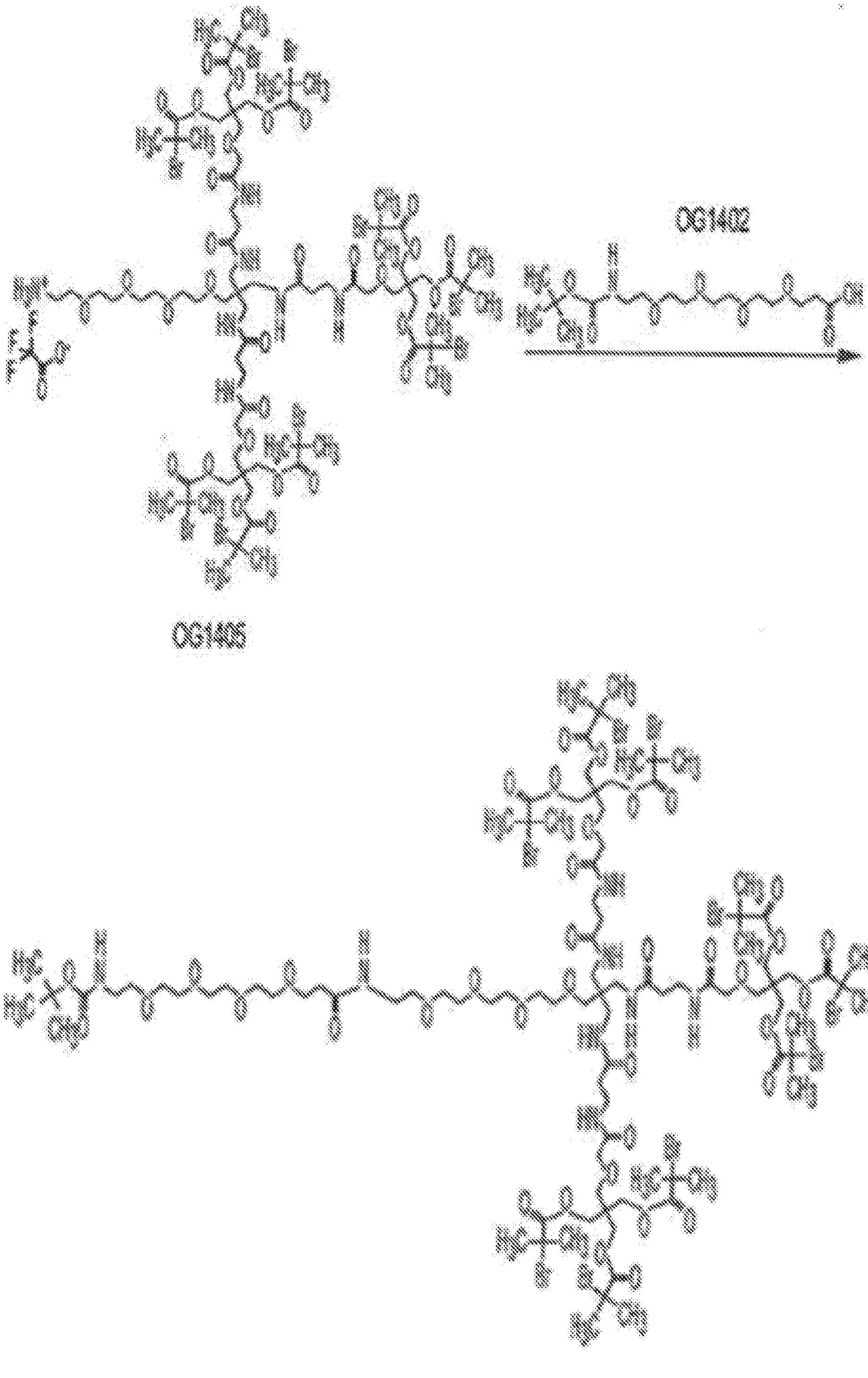


FIG. 2I

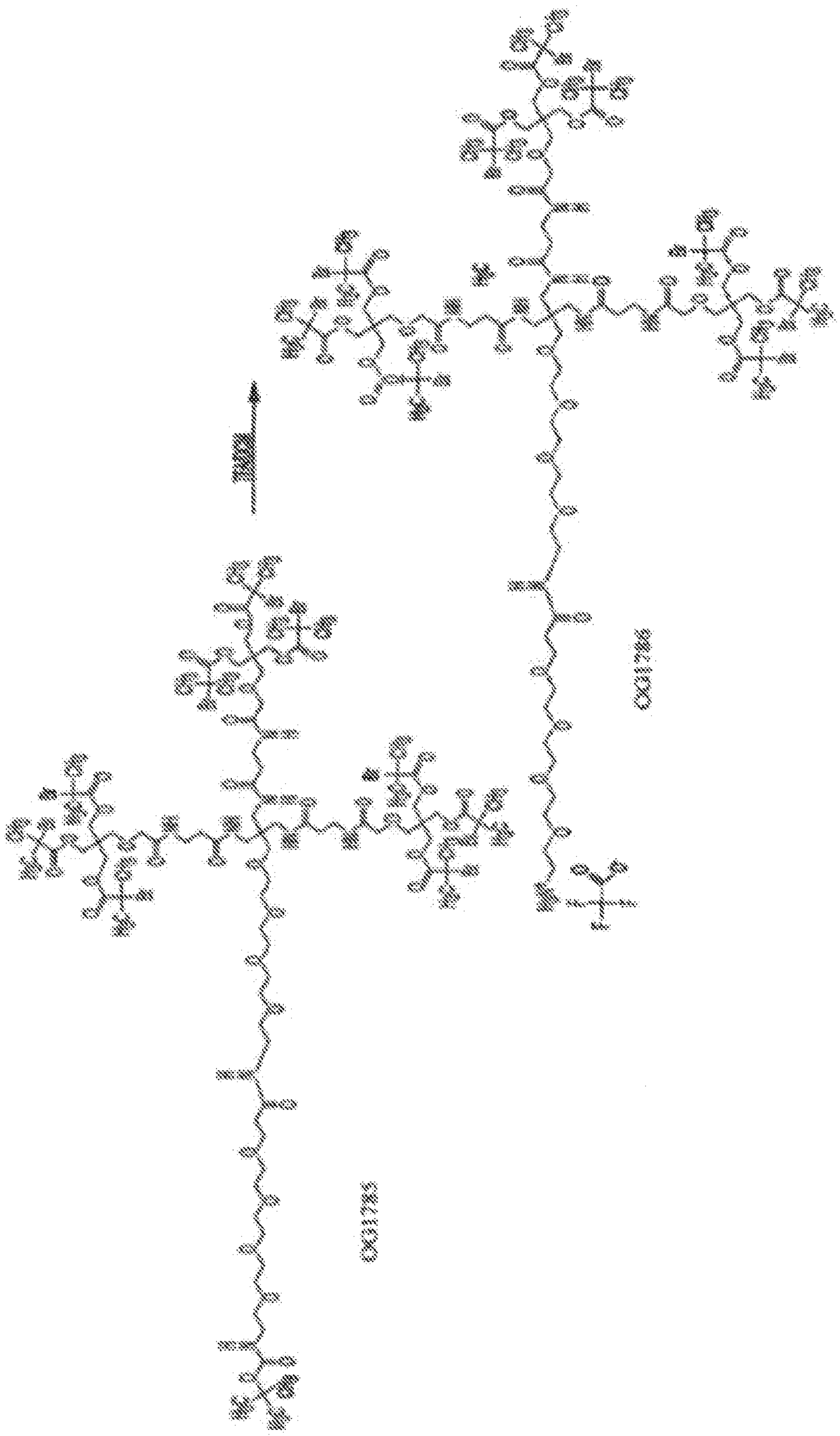
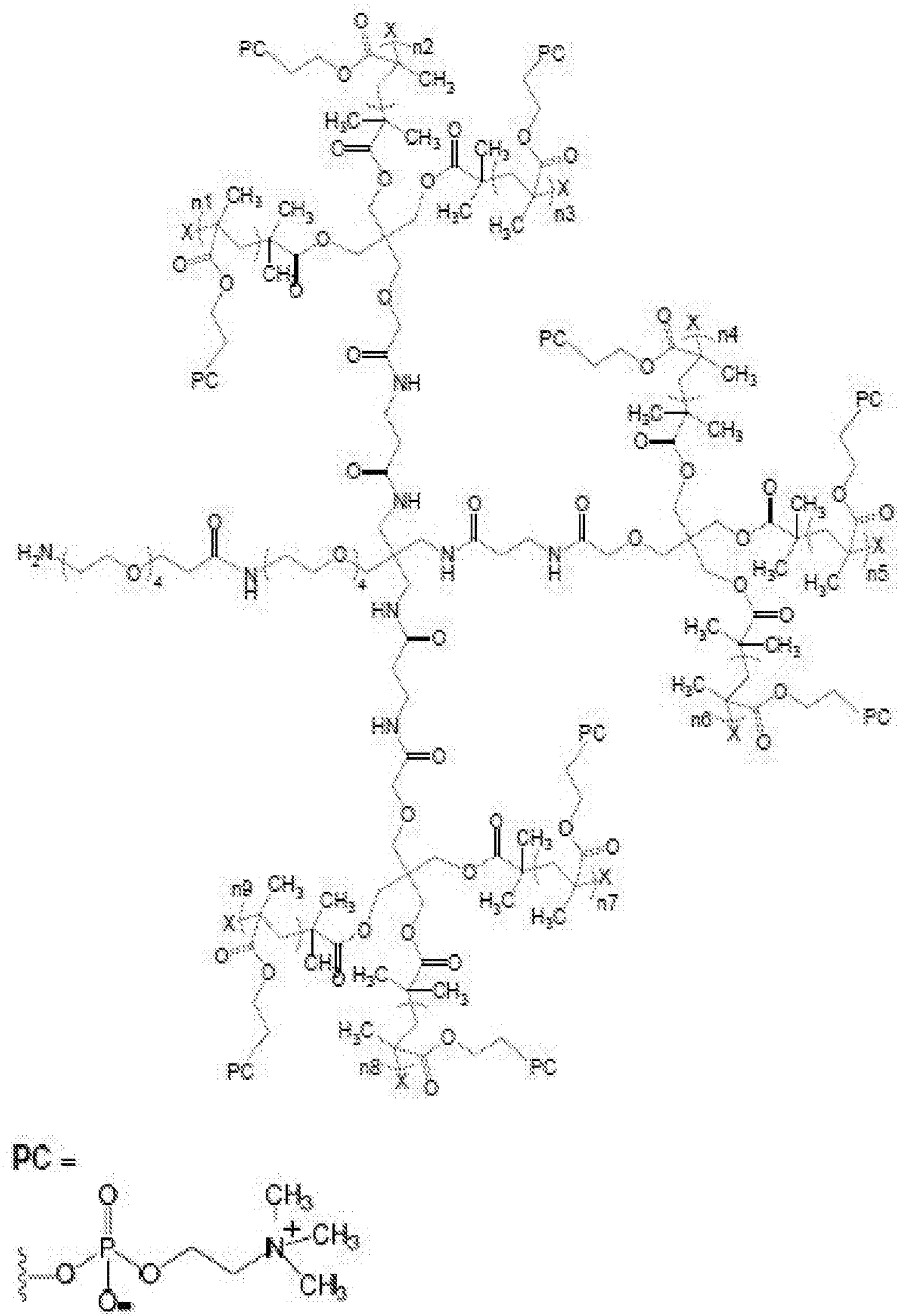


FIG. 2J

OG1801

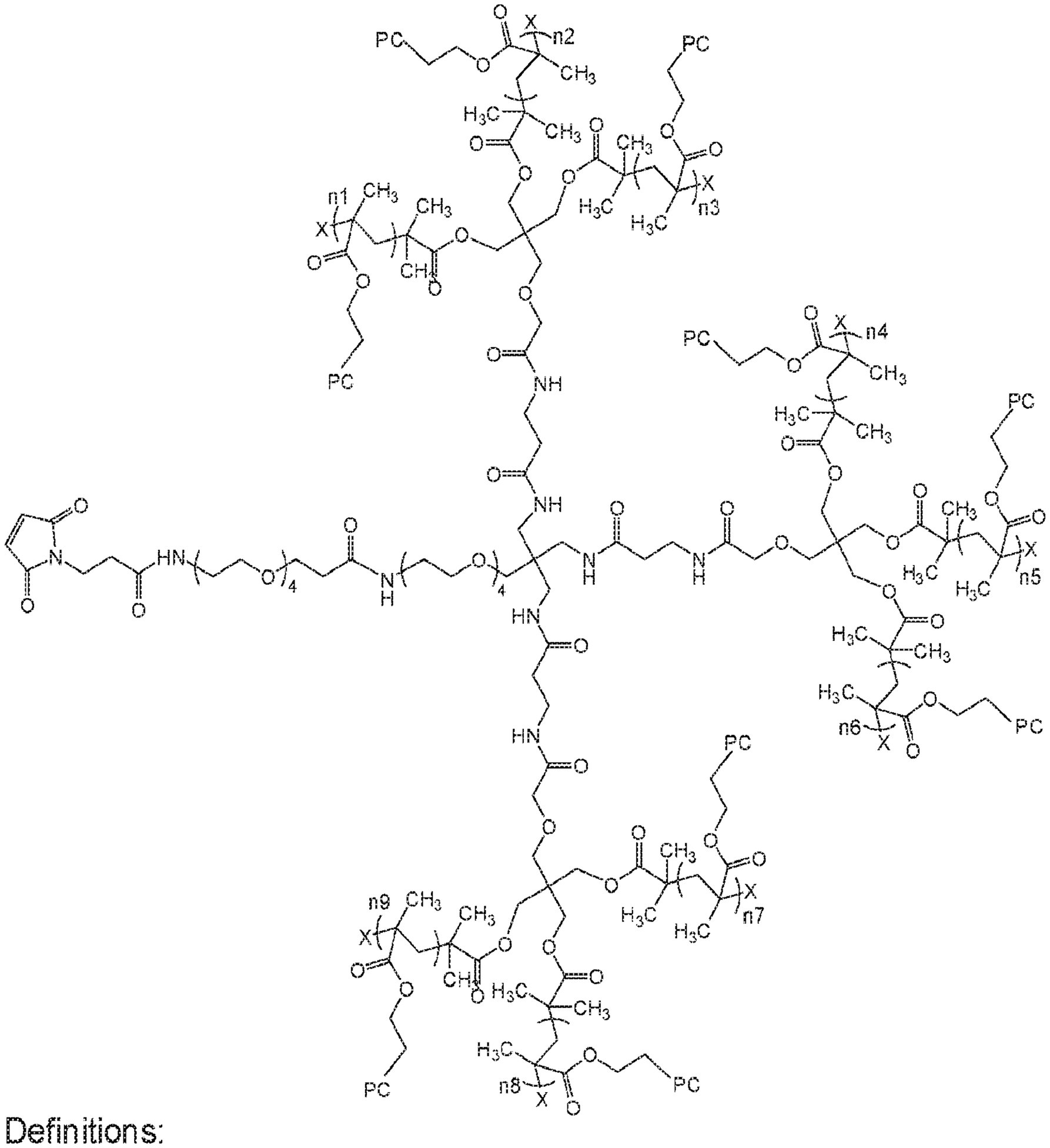


PC =

X=a) OR where R=H, methyl, ethyl, propyl, isopropyl, b) H, or c) any halide, including Br n1, n2, n3, n4, n5, n6, n7, n8 and n9 are the same or different such that the sum of n1, n2, n3, n4, n5, n6, n7, n8 and n9 is 2500 plus or minus 15%.

FIG. 2K

OG1802



Definitions:

X=a) OR where R=H, methyl, ethyl, propyl, isopropyl, b) H, or c) any halide, including Br

n1, n2, n3, n4, n5, n6, n7, n8 and n9 are the same or different such that the sum of n1, n2, n3, n4, n5, n6, n6, n7, n8 and n9 is 2500 plus or minus 15%.

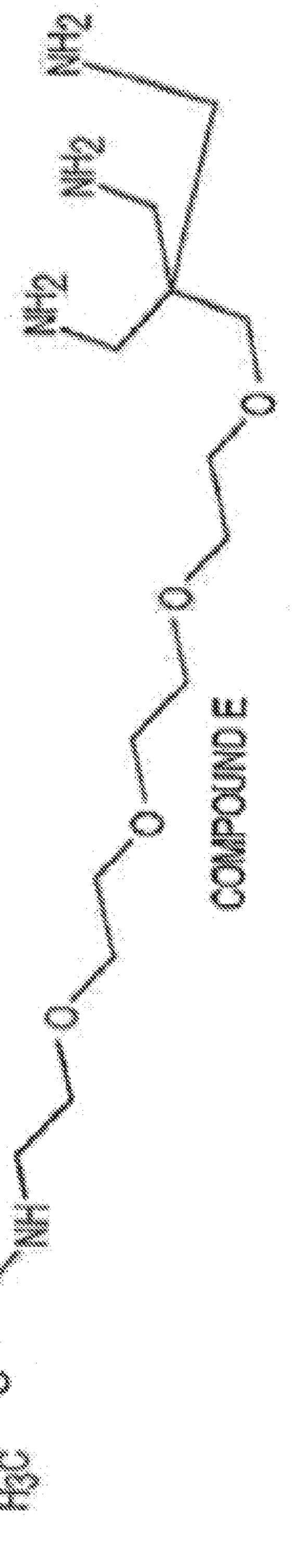


FIG. 2L

FIG. 3A

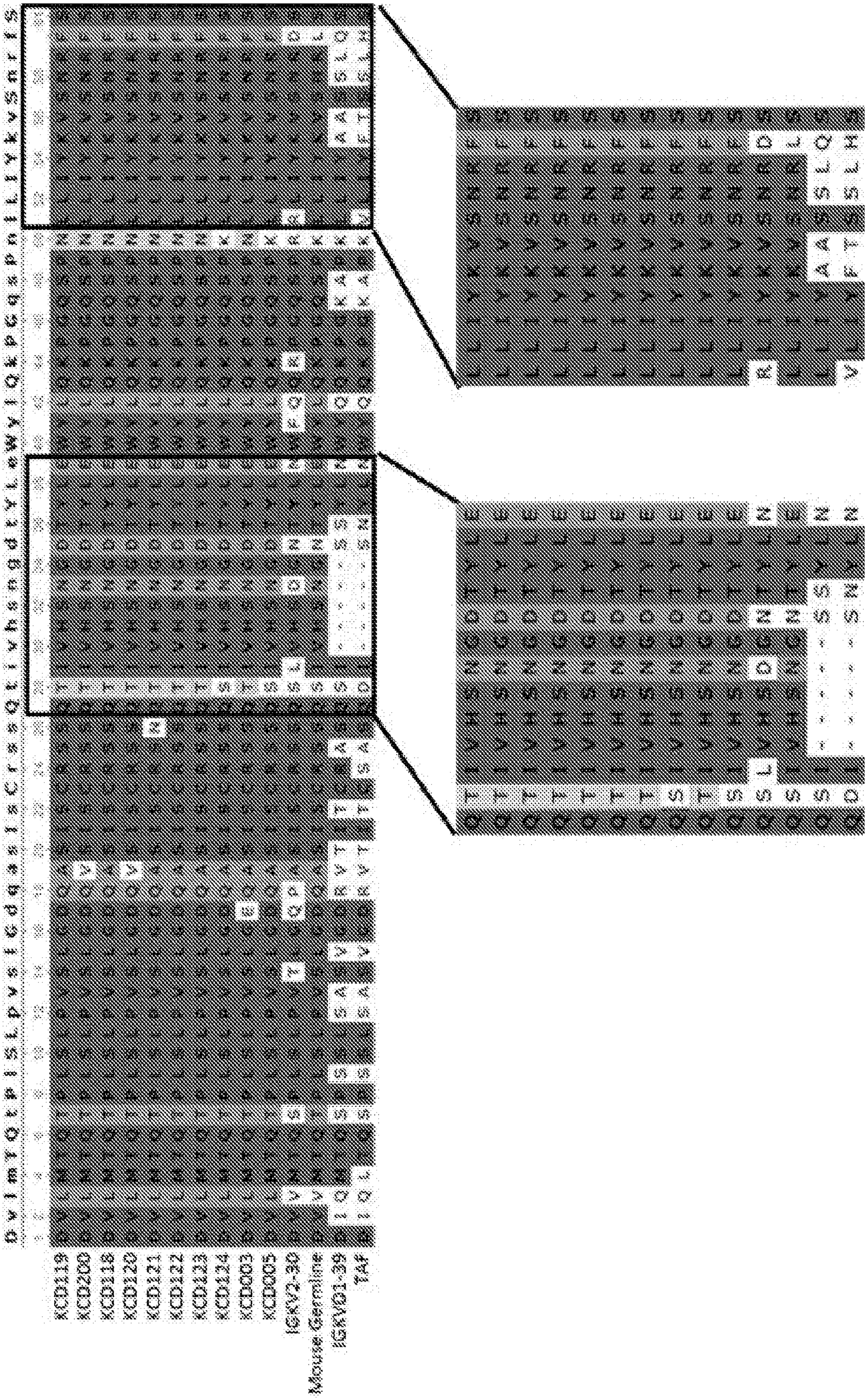
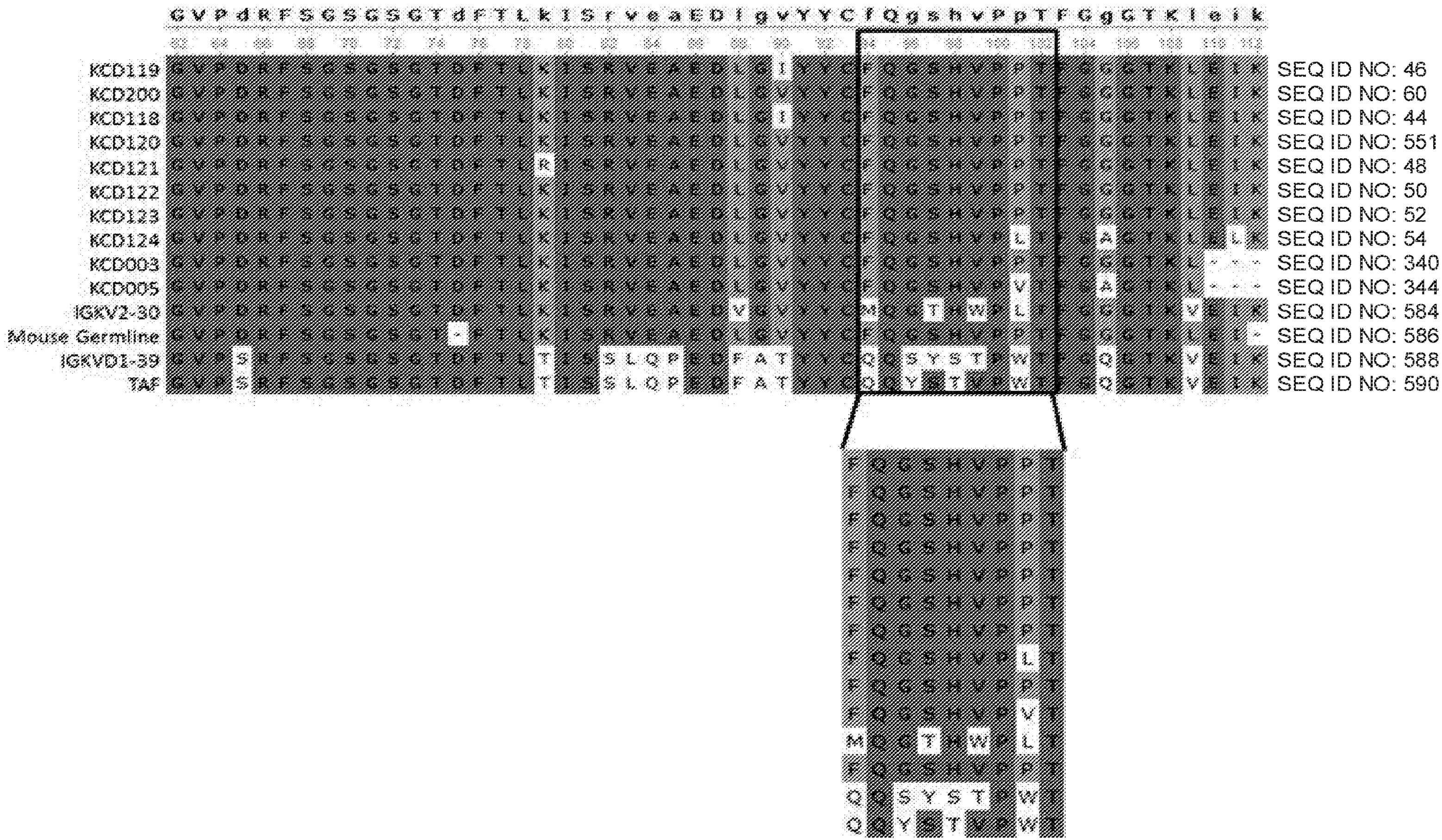

XCD119
XCD200
XCD118
XCD120
XCD121
XCD122
XCD123
XCD124
XCD003
XCD005
IGKV2-30
Mouse Germline
IGKV01-39
TAF

FIG. 3B



SUBSTITUTE SHEET (RULE 26)

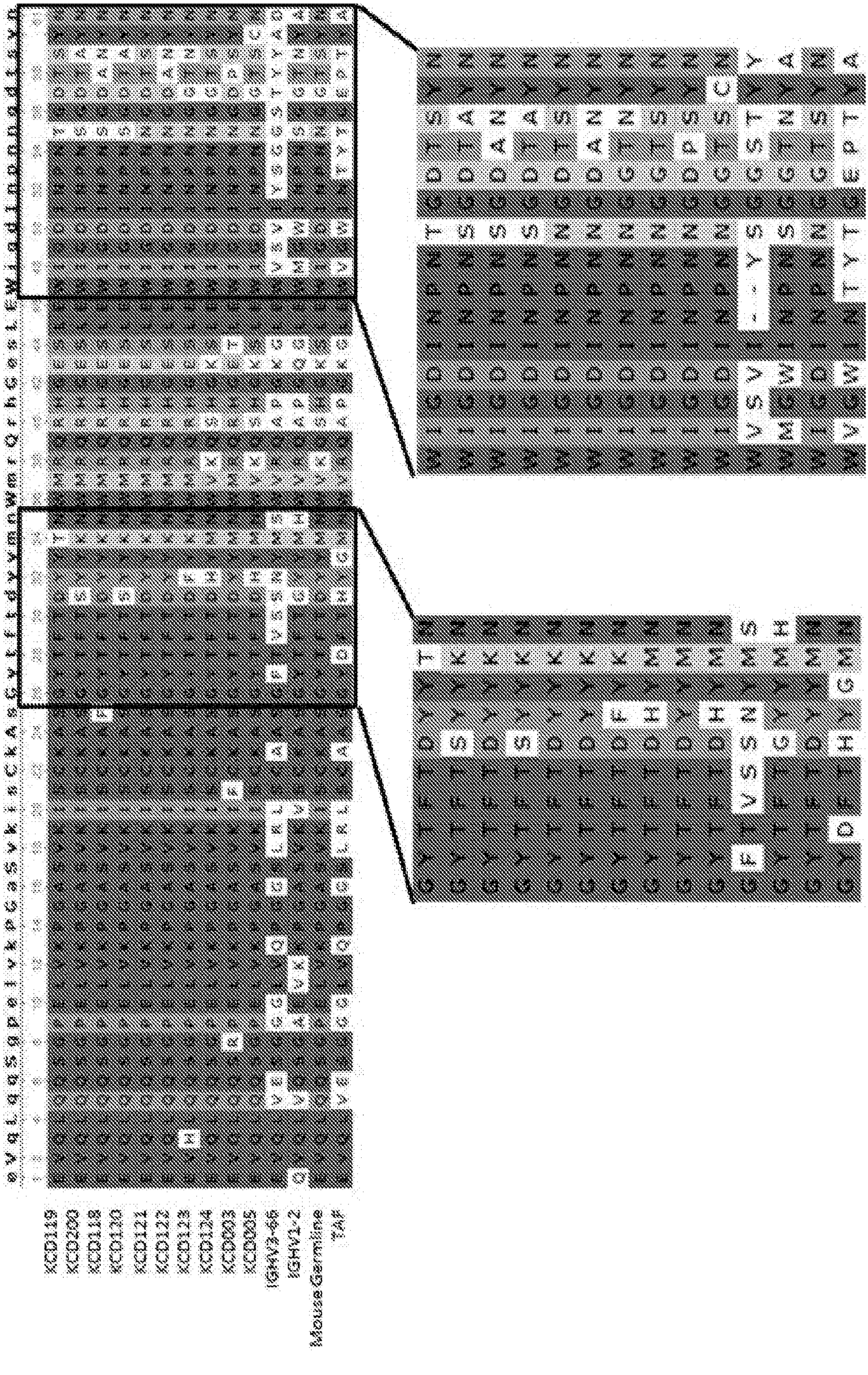
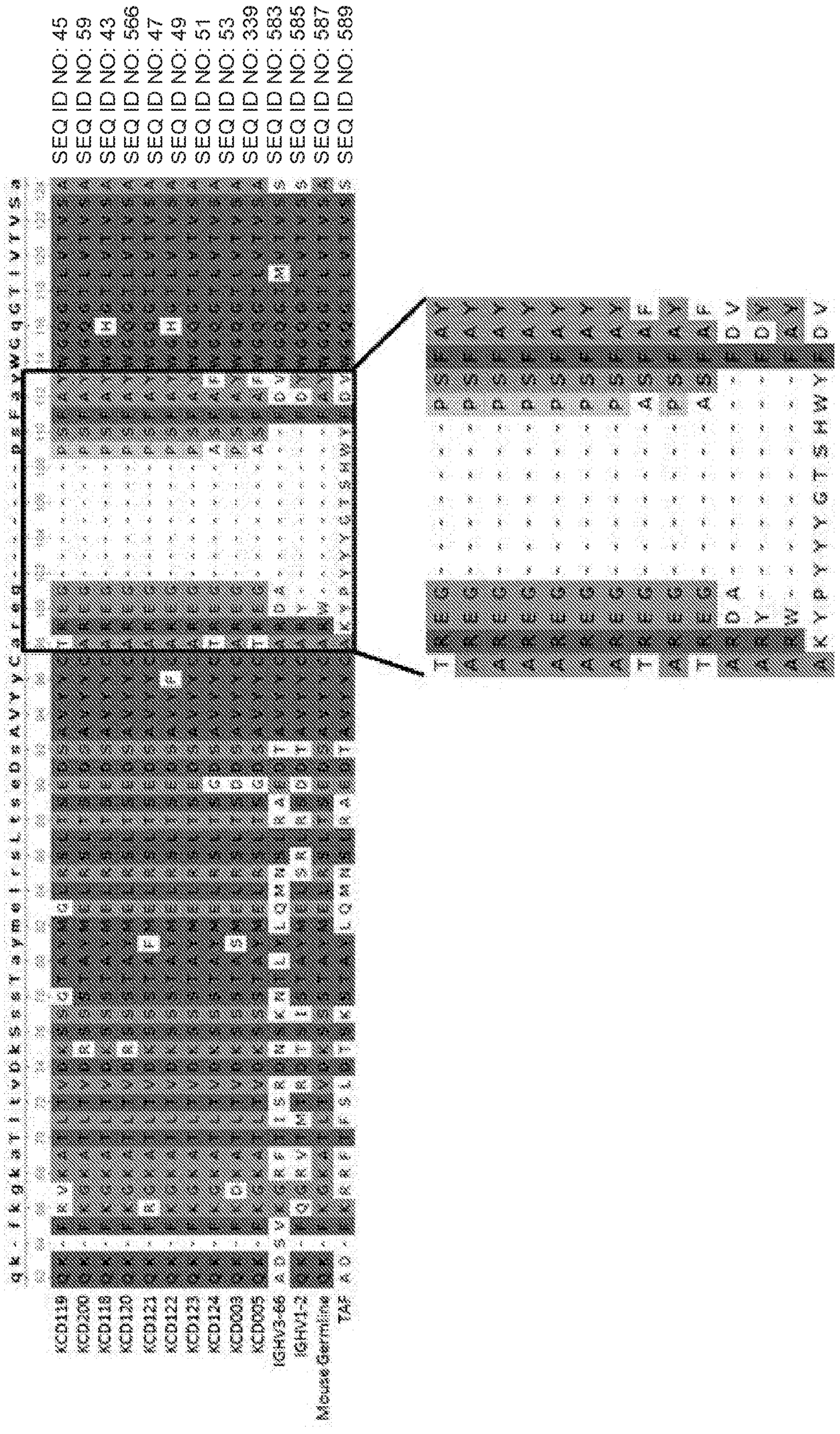

KOD119
KOD200
KOD118
KOD120
KOD121
KOD122
KOD123
KOD124
KOD203
KOD205
IGHV3-66
IGHV1-2
Mouse Germline
TAF

FIG. 4A

FIG. 4B


SEQ ID NO: 45
SEQ ID NO: 59
SEQ ID NO: 43
SEQ ID NO: 566
SEQ ID NO: 47
SEQ ID NO: 49
SEQ ID NO: 51
SEQ ID NO: 53
SEQ ID NO: 339
SEQ ID NO: 583
SEQ ID NO: 585
SEQ ID NO: 587
SEQ ID NO: 589
XCD119
XCD200
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XCD203
XCD205
IGHV3-66
IGHV1-2
Mouse Germline
TAE

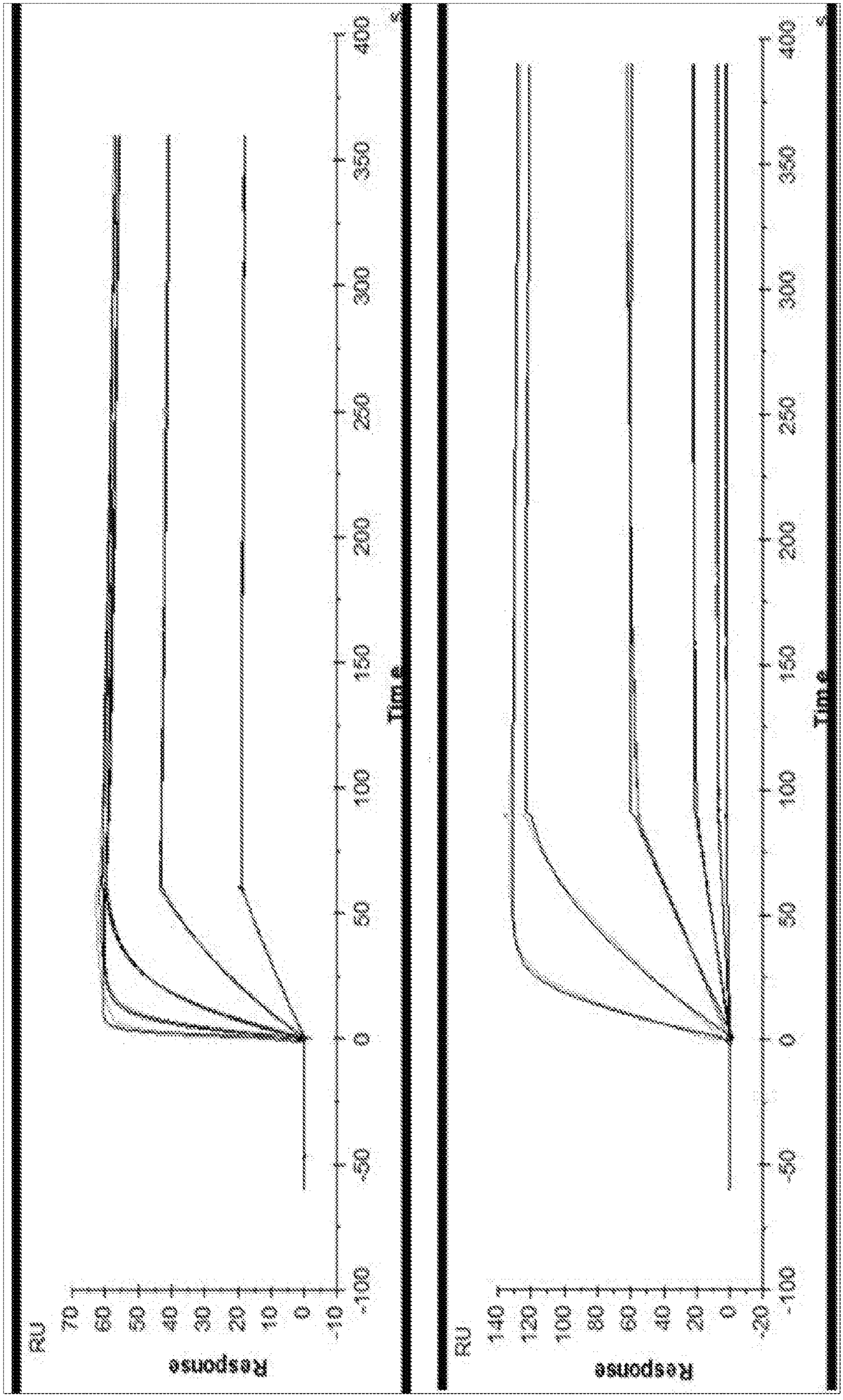

Response
RU
20
40
60
80
100
120
140
-20
0
20
40
60
80
100
-100
-50
0
50
100
150
200
250
300
350
400
Time
Response
RU
-10
0
10
20
30
40
50
60
-100
-50
0
50
100
150
200
250
300
350
400
Time

FIG. 5A

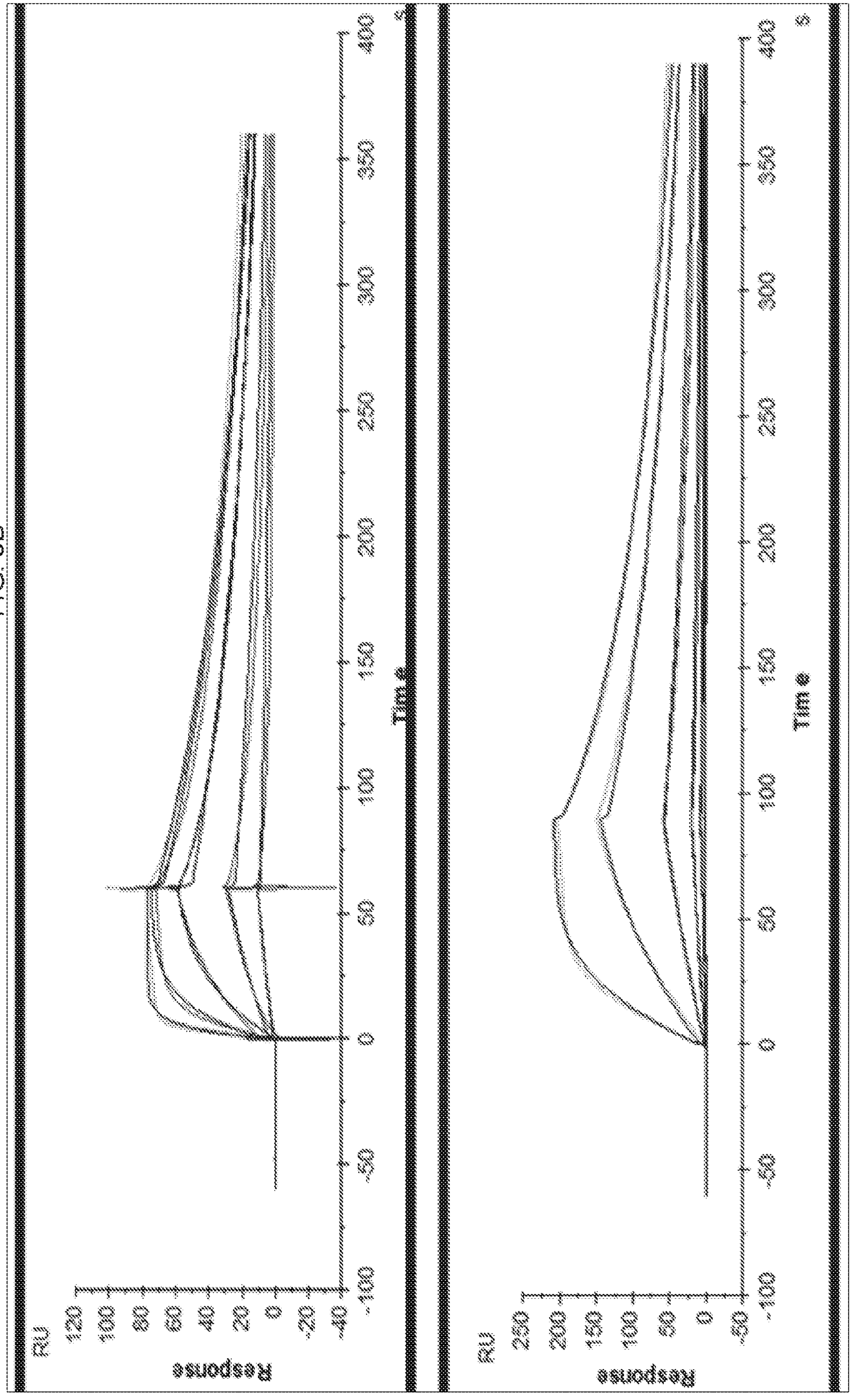


FIG. 5B

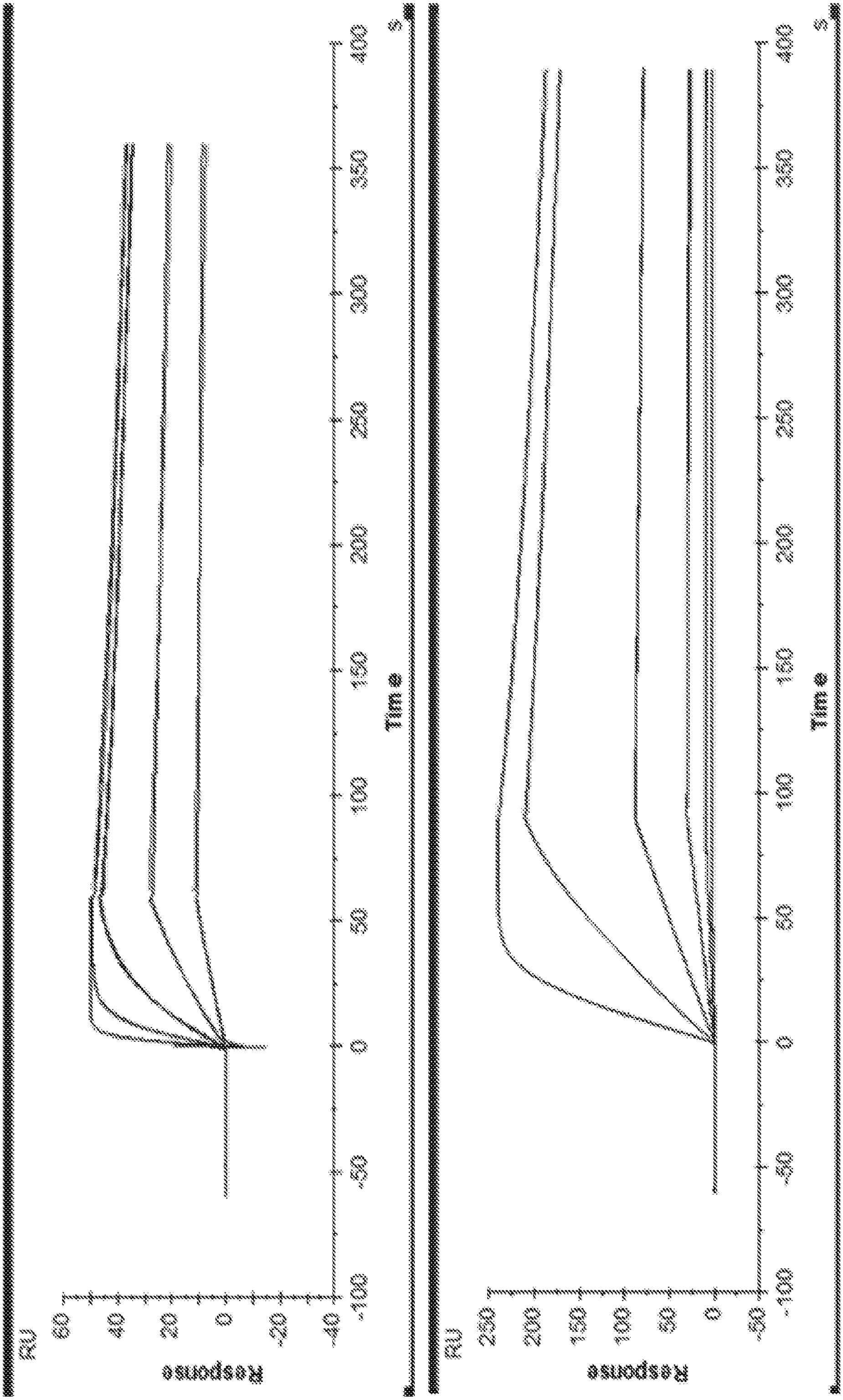

Response (RU)
60
40
20
0
-20
-40
-60
-80
-100
Time
0
50
100
150
200
250
300
350
400
Response (RU)
-50
0
50
100
150
200
250
Time

FIG. 5C

54V/WT
Response
RU
30
25
20
15
10
5
0
-5
-200
0
200
400
600
800
1000
1200
Time s

FIG. 6A

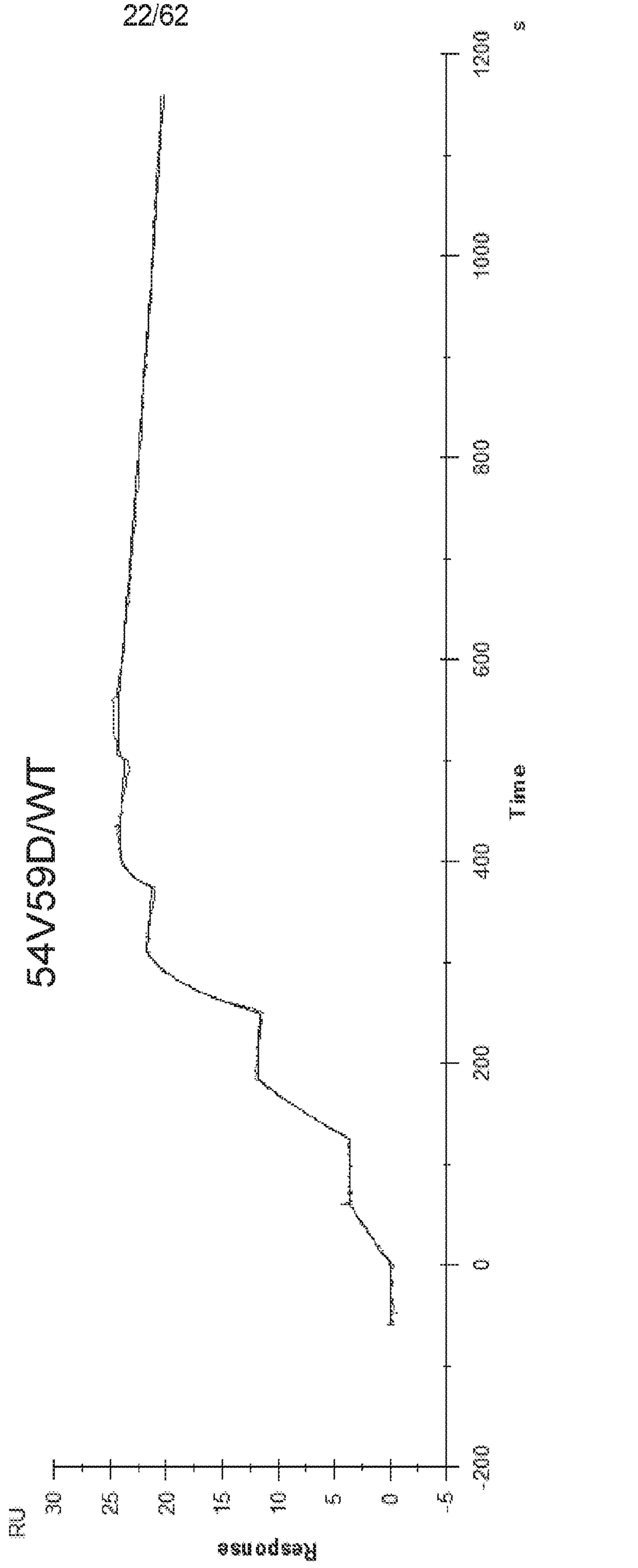
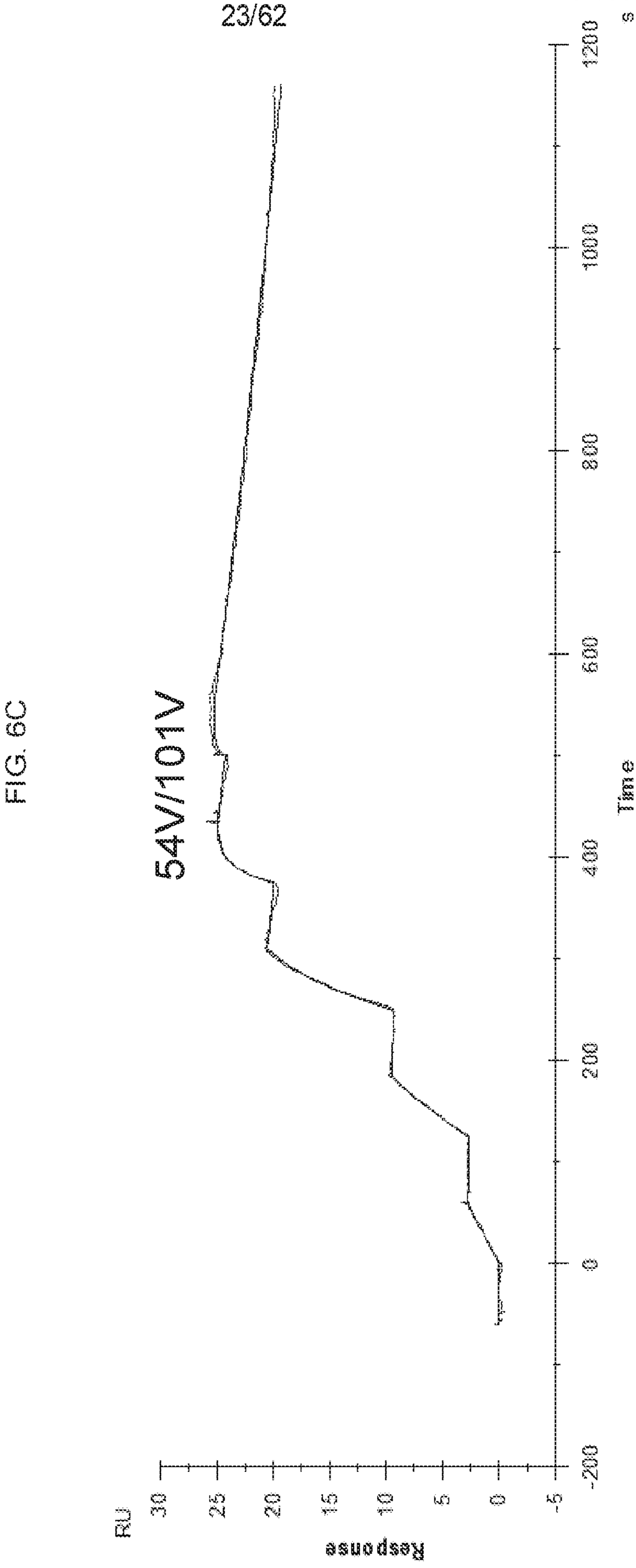

54V59D/WT
RU
Response
30
25
20
15
10
5
0
-5
-200
0
200
400
Time
600
800
1000
1200
s

FIG. 6B


54V/101V
FIG. 6C
Response
RU
30
25
20
15
10
5
0
-5
-200
0
200
400
600
800
1000
1200
Time
s

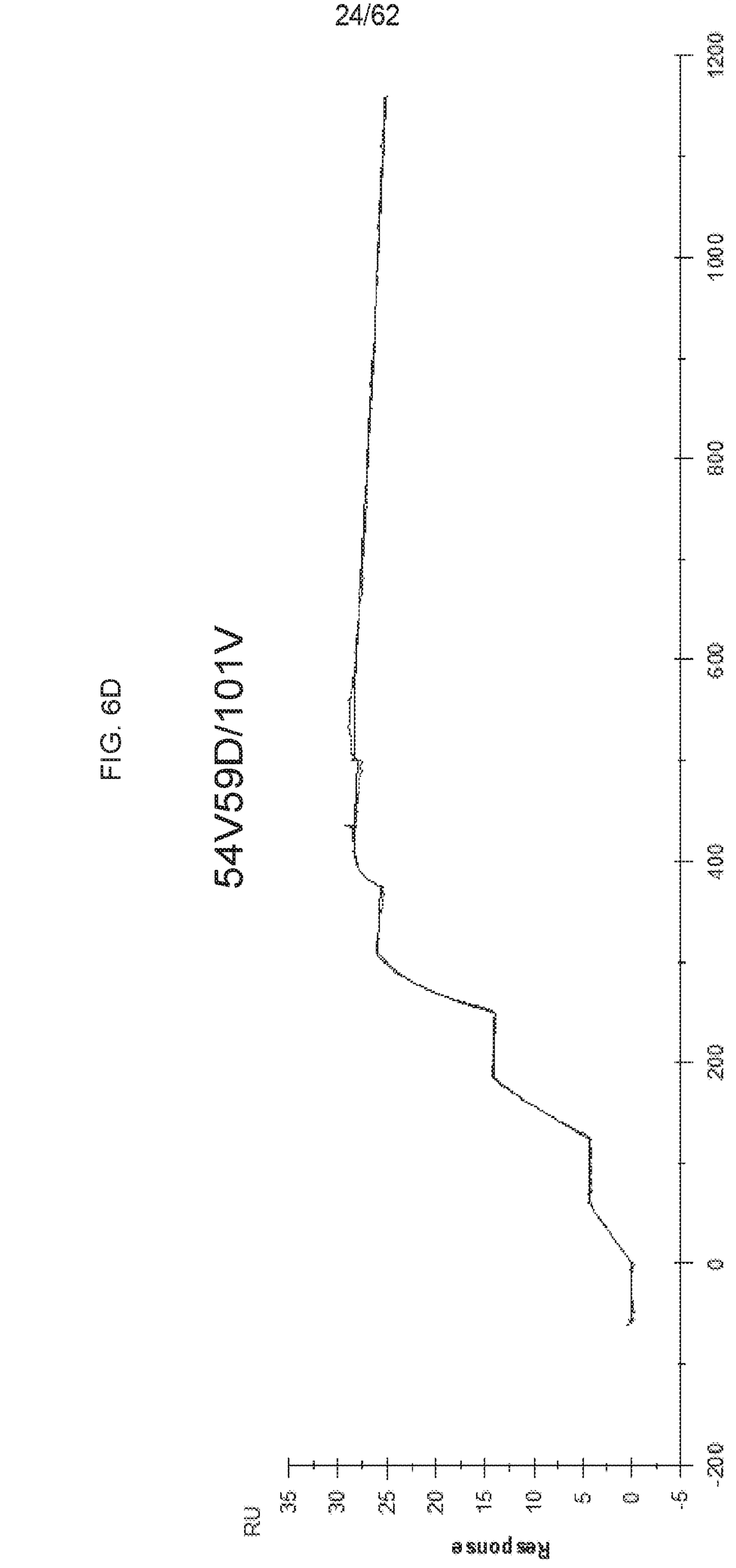

54V59D/101V
RU
35
30
25
20
15
10
5
0
-5
-200
0
200
400
600
800
1000
1200
Time
s

FIG. 6D

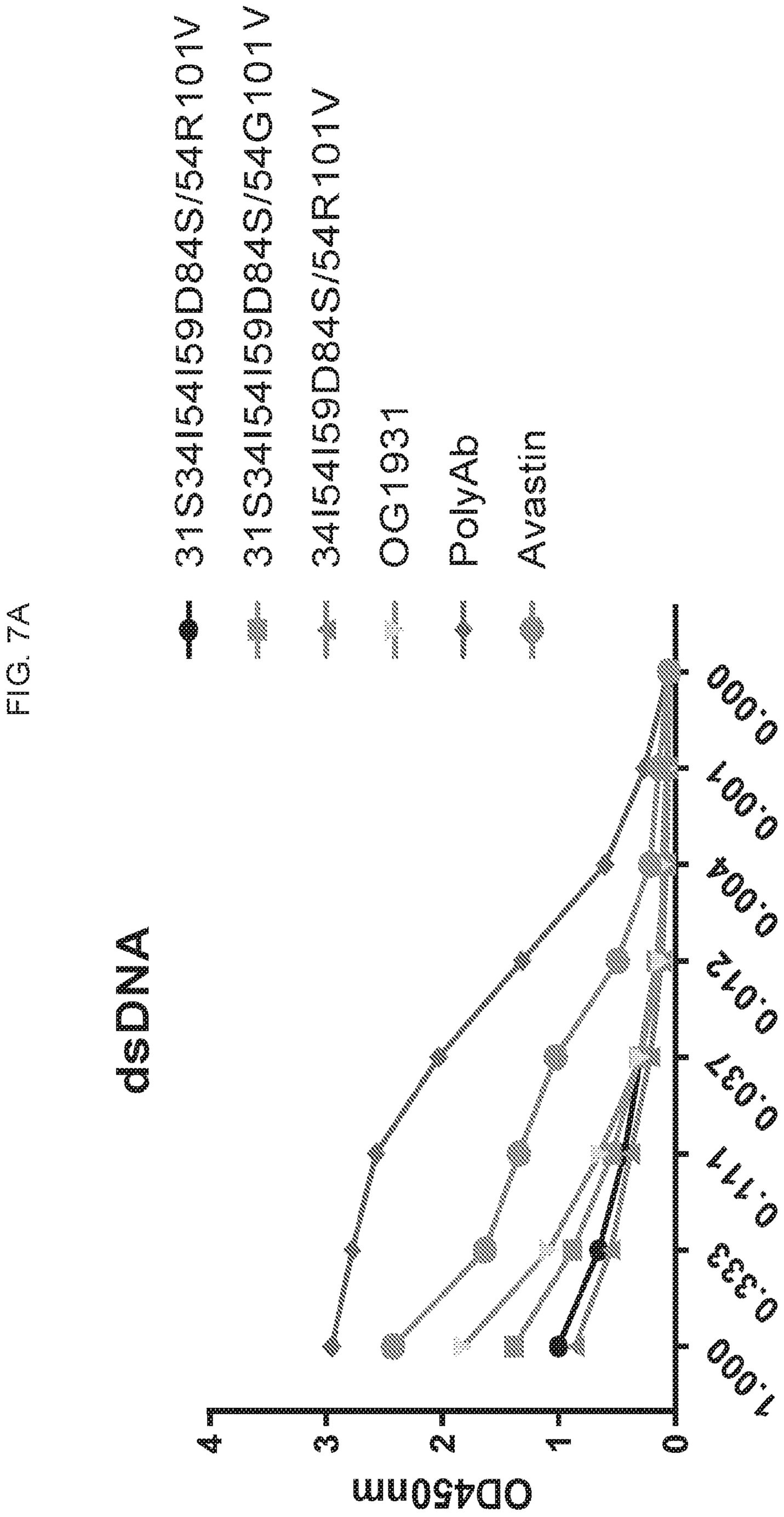

31S34I54I59D84S/54R101V
31S34I54I59D84S/54G101V
34I54I59D84S/54R101V
OG1931
PolyAb
Avastin
dsDNA
1µg/ml
0.000
0.001
0.004
0.012
0.037
0.111
0.333
1.000
OD450nm
0
1
2
3
4

FIG. 7A

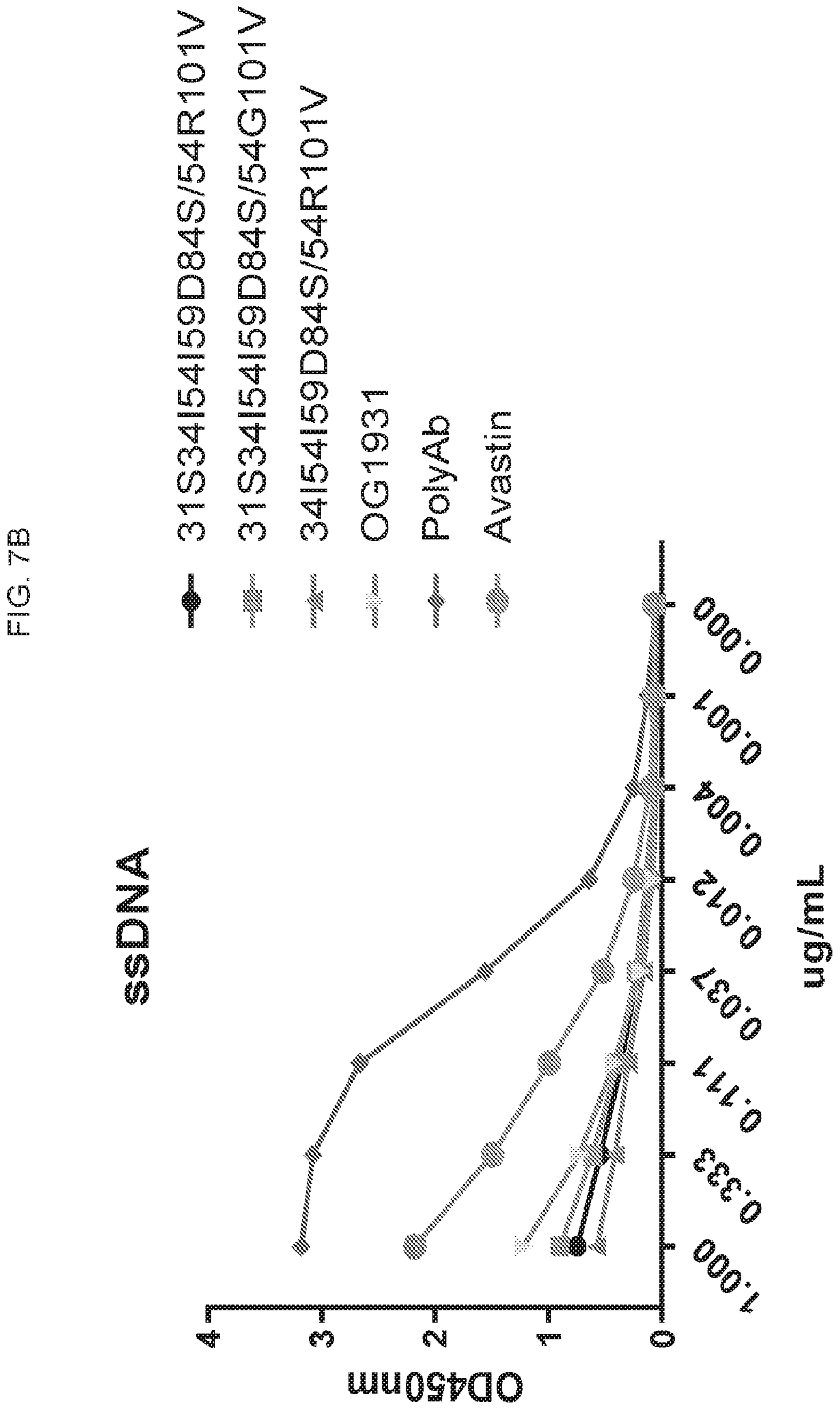

OD450nm
0
1
2
3
4
ssDNA
1,000
0.333
0.111
0.037
0.012
0.004
0.001
0.000
ug/ml
31S34I54I59D84S/54R101V
31S34I54I59D84S/54G101V
34I54I59D84S/54R101V
OG1931
PolyAb
Avastin

FIG. 7B

FIG. 7C

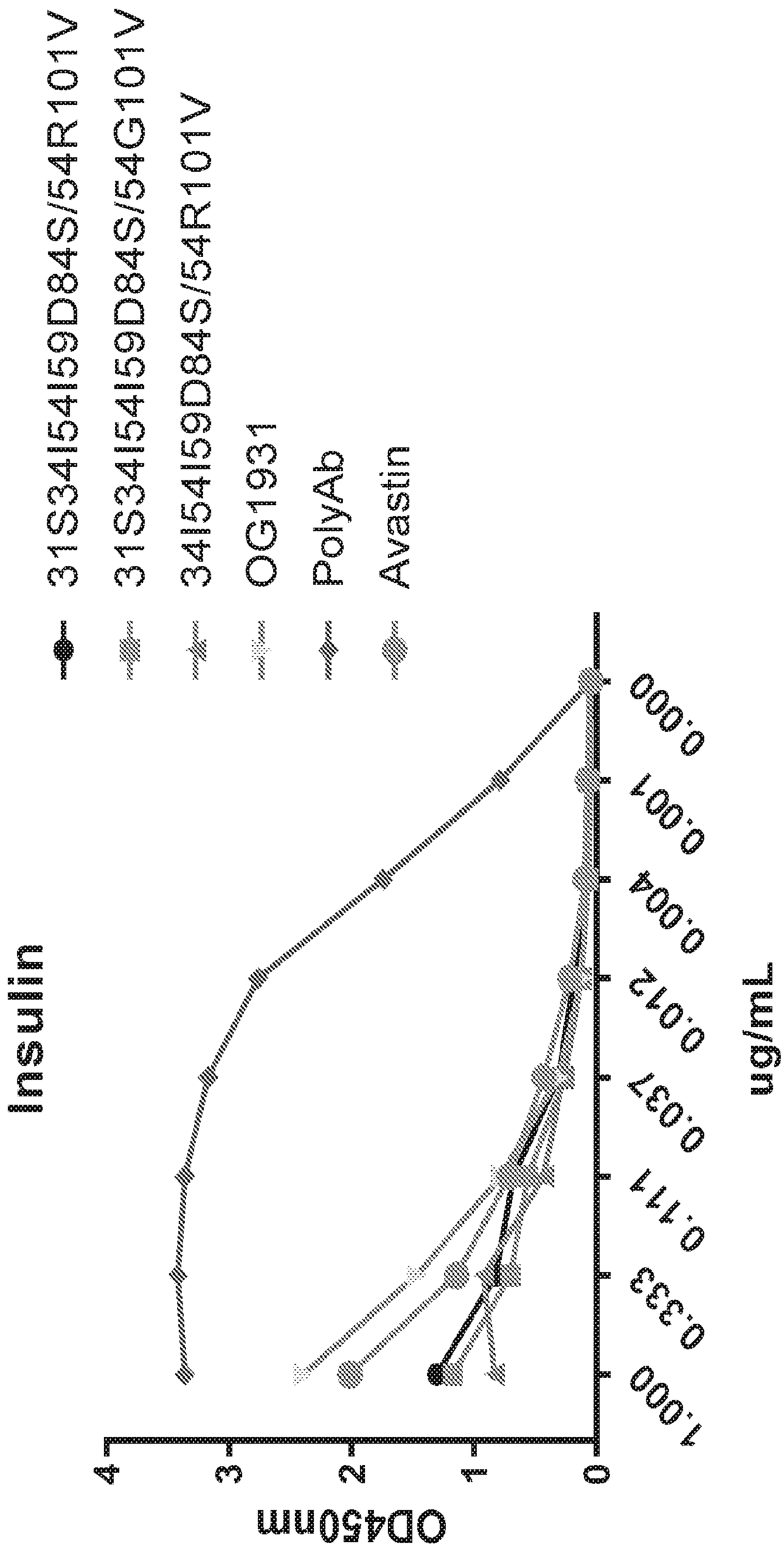

31S34I54I59D84S/54R101V
31S34I54I59D84S/54G101V
34I54I59D84S/54R101V
OG1931
PolyAb
Avastin
0.000
0.001
0.004
0.012
0.037
0.111
0.333
1.000
ng/mL
4
3
2
1
0
OD450nm
Insulin

FIG. 7D

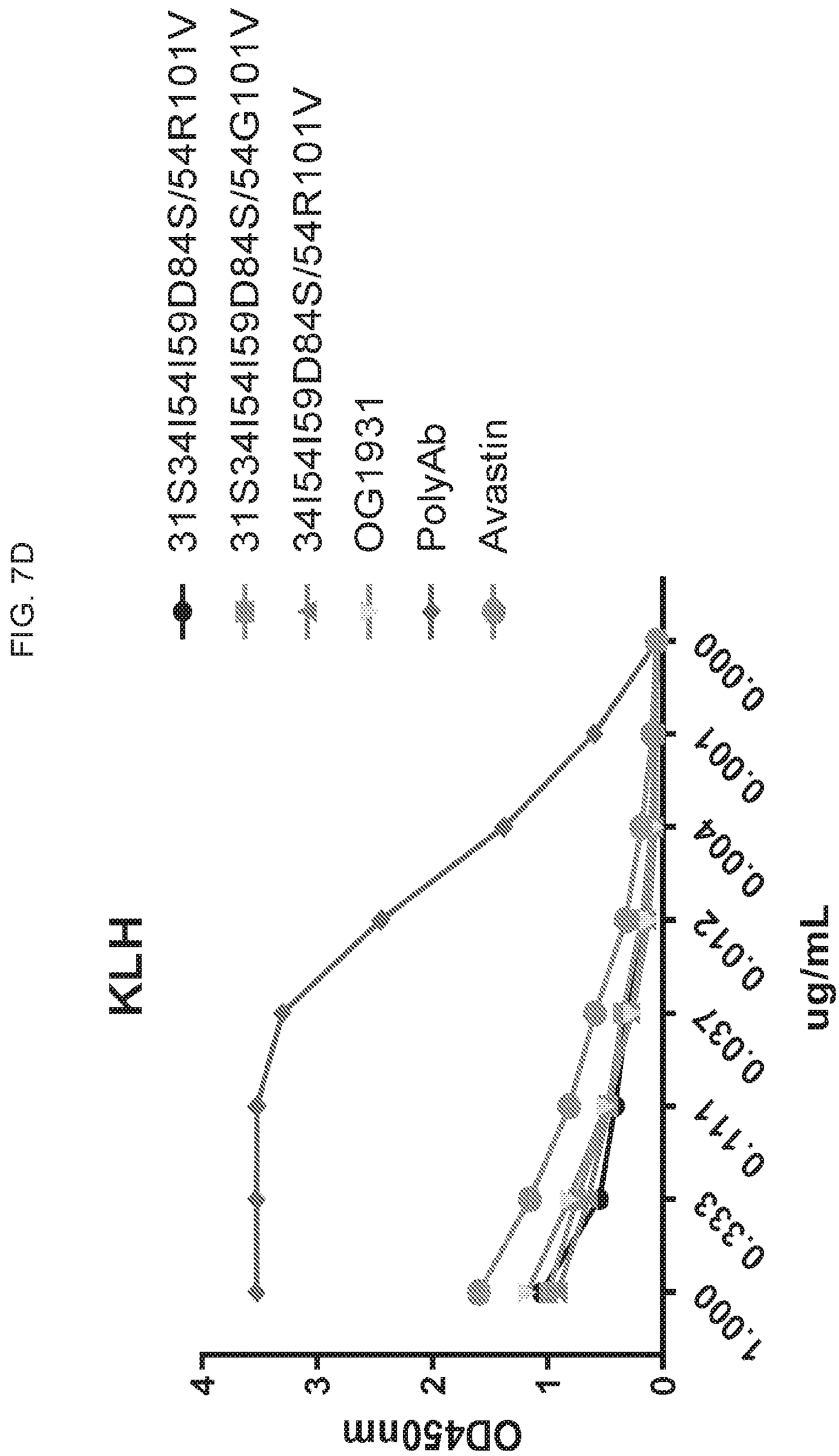
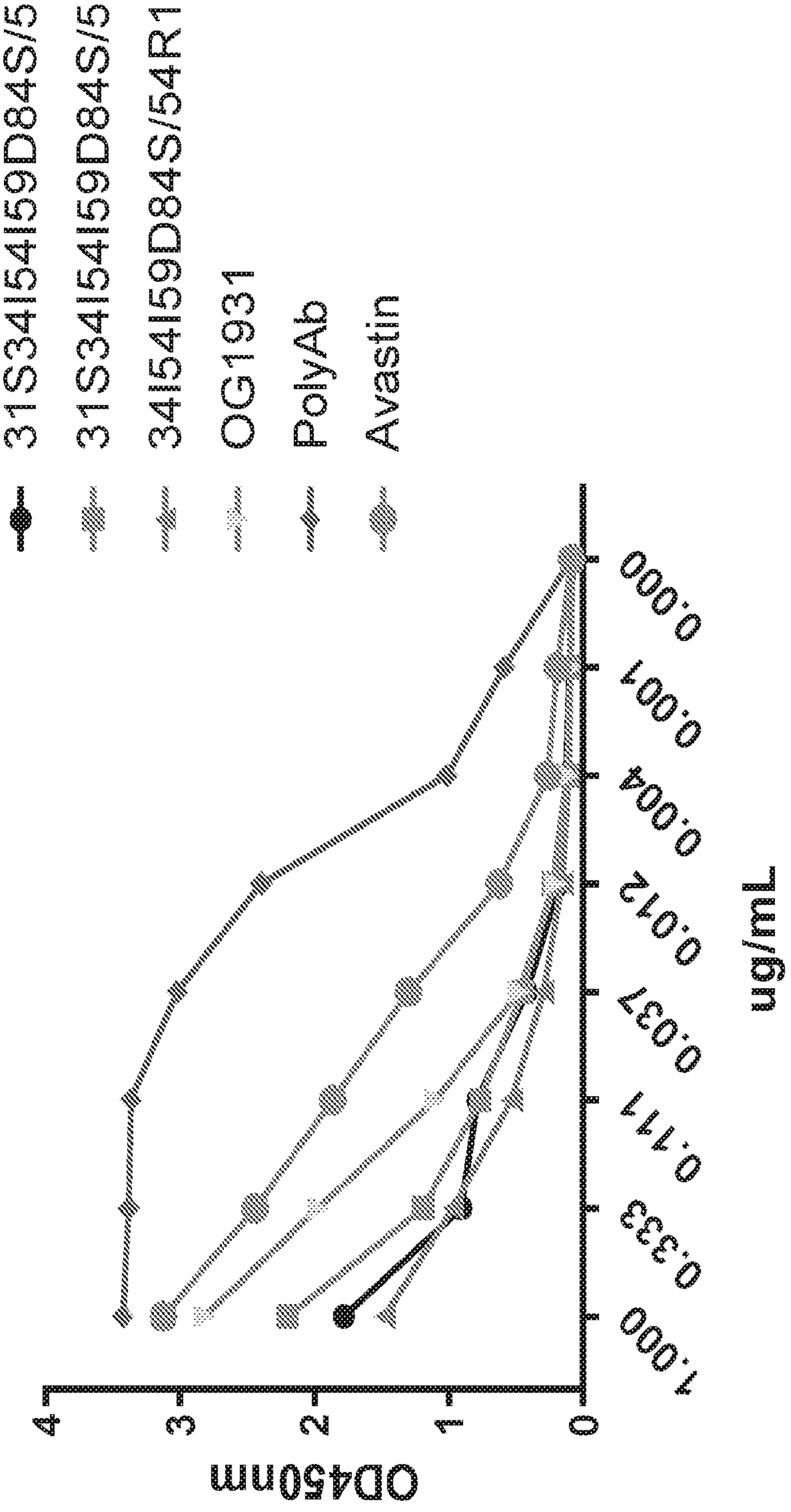

31S34I54I59D84S/54R101V
31S34I54I59D84S/54G101V
34I54I59D84S/54R101V
OG1931
PolyAb
Avastin
0.000
0.001
0.004
0.012
0.037
0.111
0.333
1.000
ng/mL
4
3
2
1
0
OD450nm

FIG. 7E


31S34I54I59D84S/54R101V
31S34I54I59D84S/54G101V
31S34I54I59D84S/54R101V
34I54I59D84S/54R101V
OG1931
PolyAb
Avastin
LPS
1ug/mL
0.000
0.001
0.004
0.012
0.037
0.111
0.333
1.000
OD450nm
0
1
2
3
4

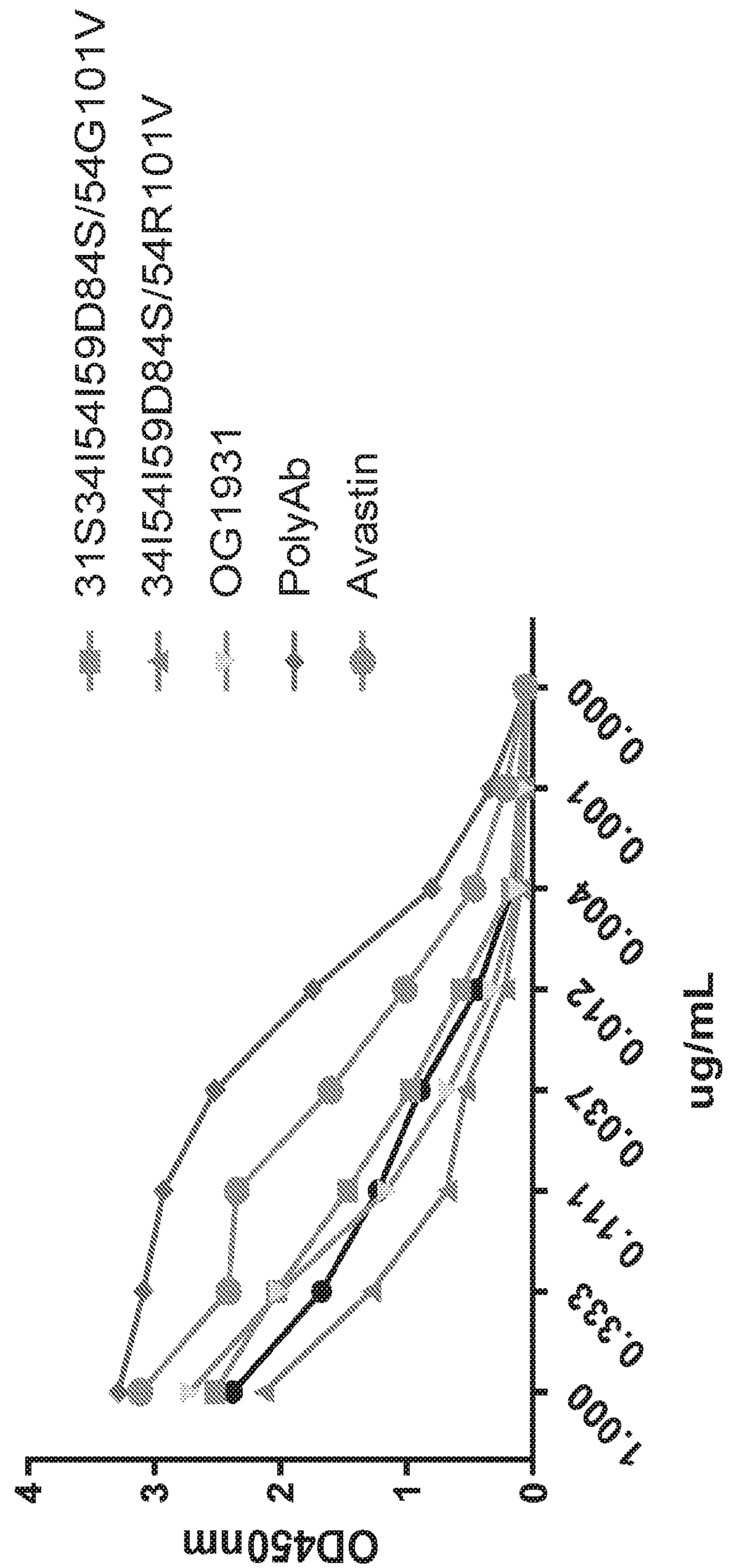

G101V
1V
31S34I54I59D84S/54
34I54I59D84S/54R10
OG1931
PolyAb
Avastin
Cardiolipin
ug/ml
0.000
0.001
0.004
0.012
0.037
0.111
0.333
1.000
OD450nm
0
1
2
3
4

FIG. 7

FIG. 8

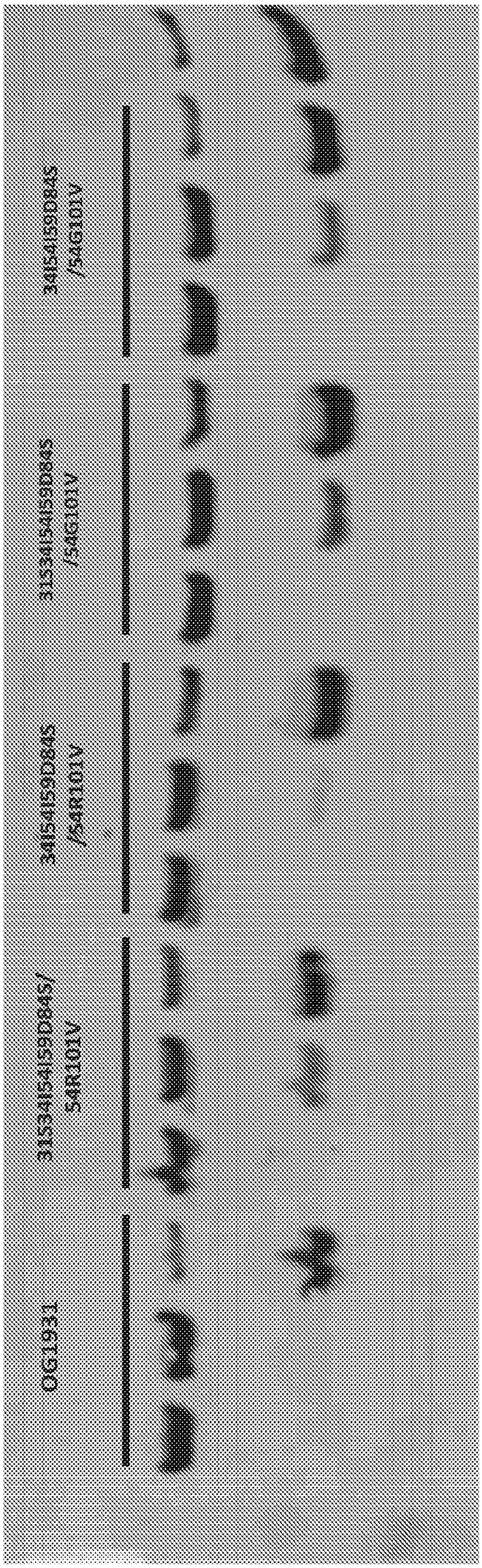
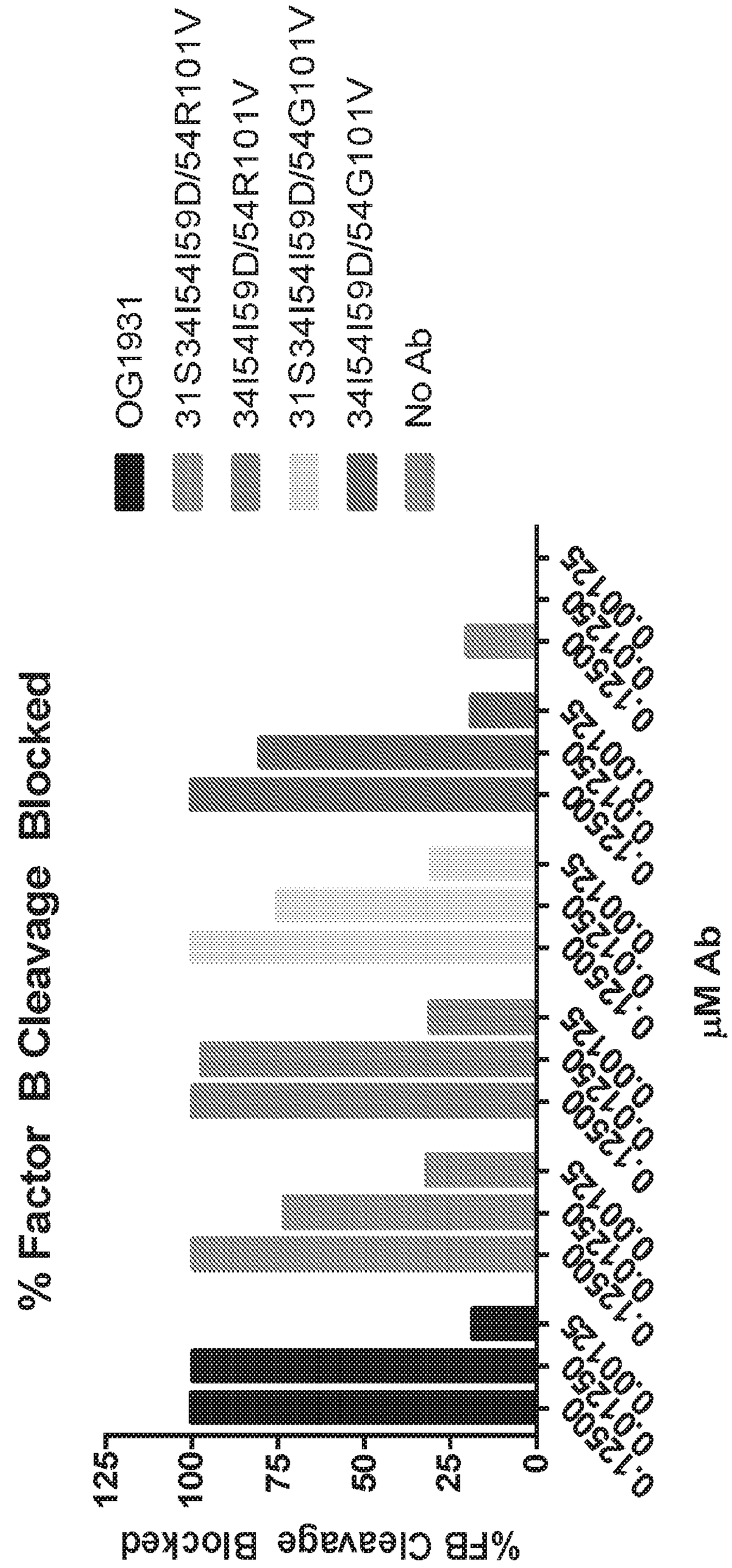

3415415D845/S4G101V
3153415415D845/S4R101V
3415415D845/S4R101V
3153415415D845/S4G101V
3415415D845/S4G101V

FIG. 9


% Factor B Cleavage Blocked
OG1931
31S34I54I59D/54R101V
34I54I59D/54R101V
31S34I54I59D/54G101V
34I54I59D/54G101V
No Ab
125
100
75
50
25
0
%FB cleavage Blocked
0
0.0078125
0.015625
0.03125
0.0625
0.125
0.25
0.5
1
2
μM Ab

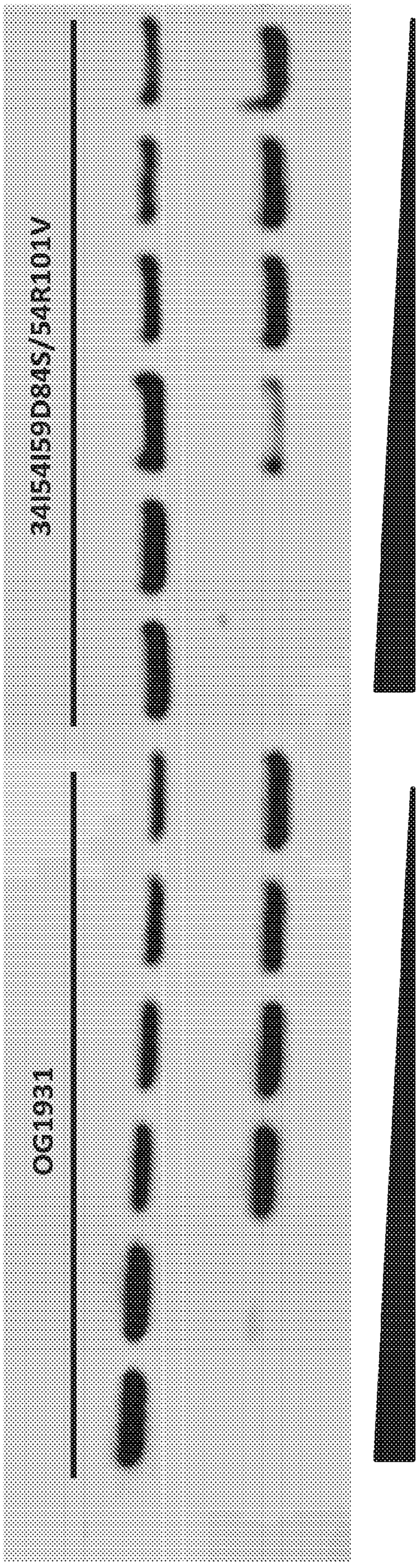


FIG. 10

FIG. 11

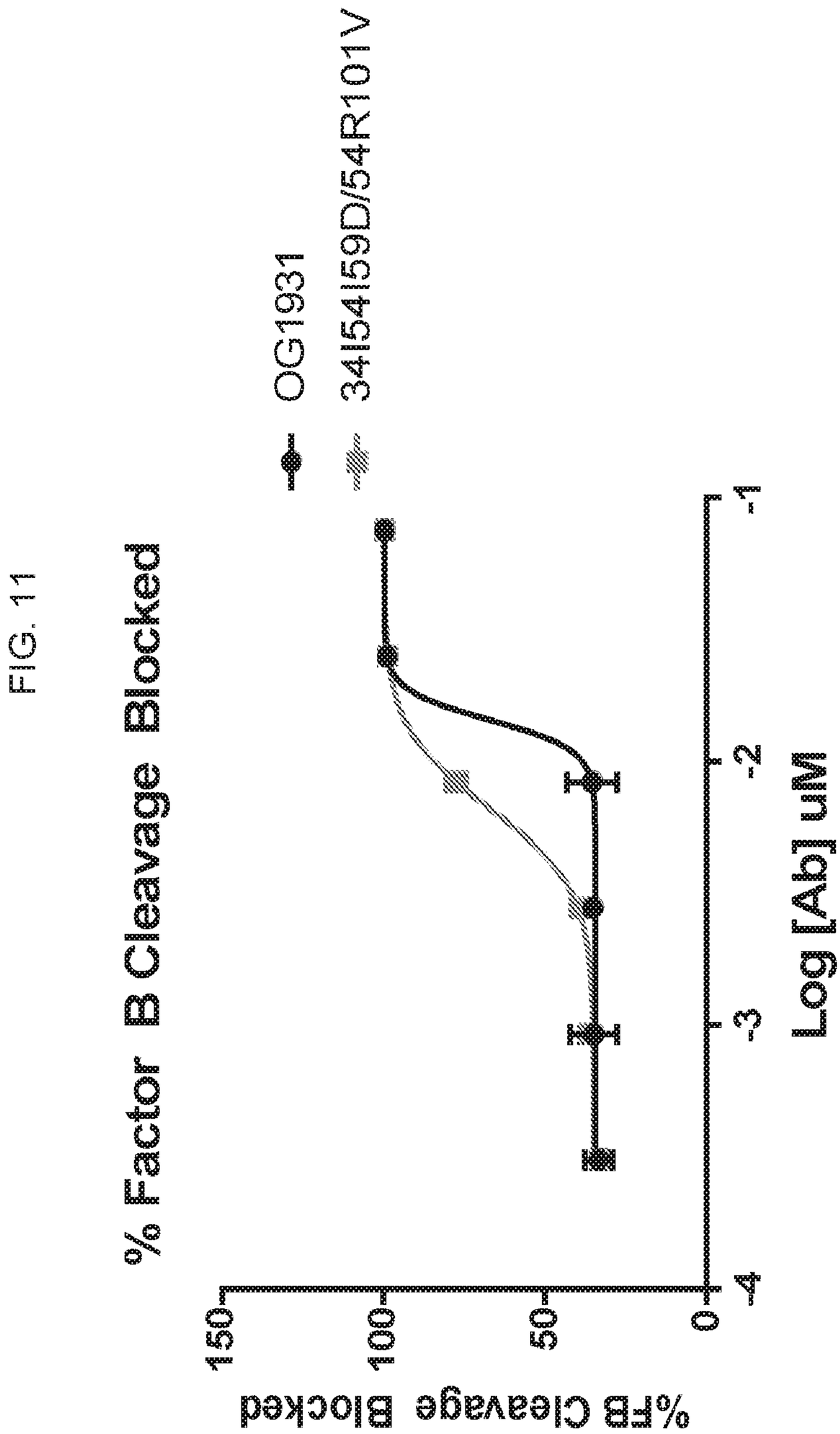
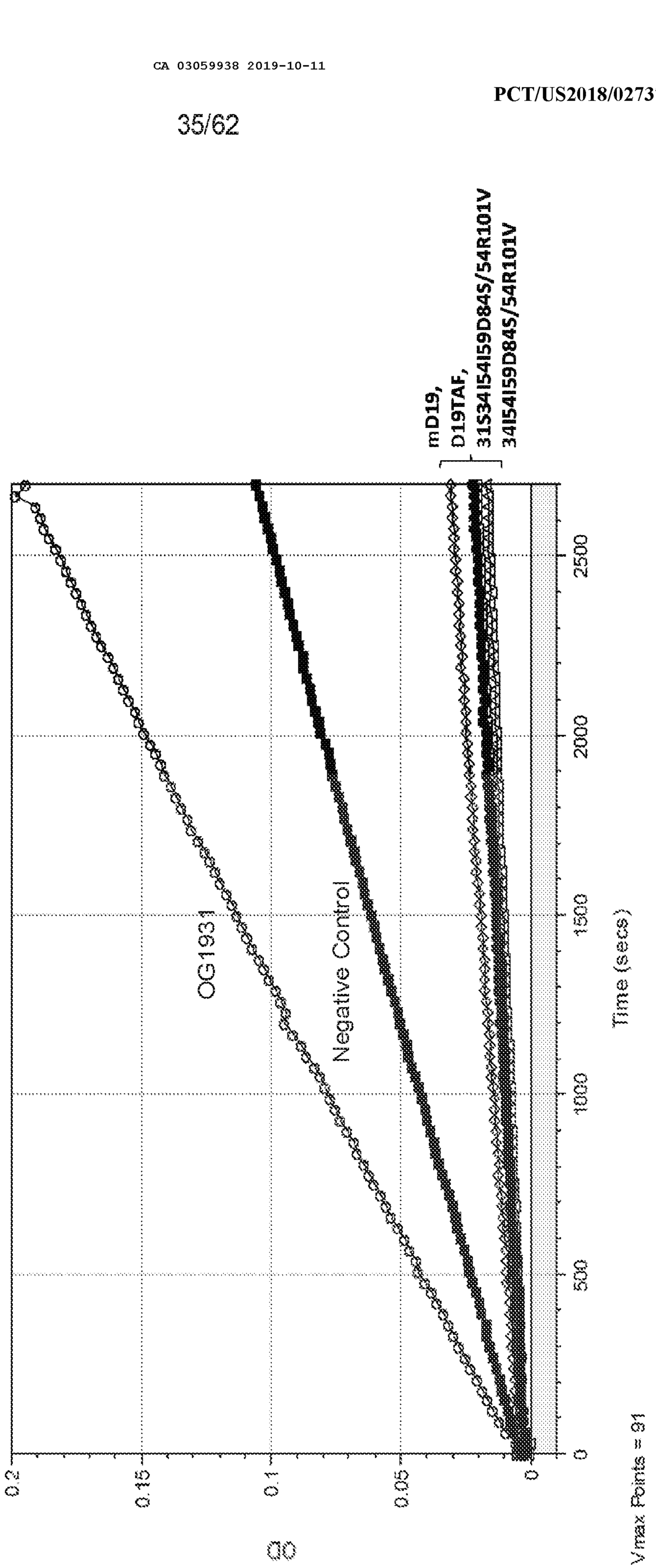

% Factor B Cleavage Blocked
OG1931
3415459D/54R1
-1
-2
-3
-4
Log [Ab] uM
%FB cleavage Blocked
50
100
50
0

FIG. 12


mD19,
D19TAF,
31534I54I59D84S/54R101V
34I54I59D84S/54R101V
2500
2000
1500
1000
500
0
Time (secs)
OG1931
Negative Control
0.2
0.15
0.1
0.05
0
OD
V/max Points = 91

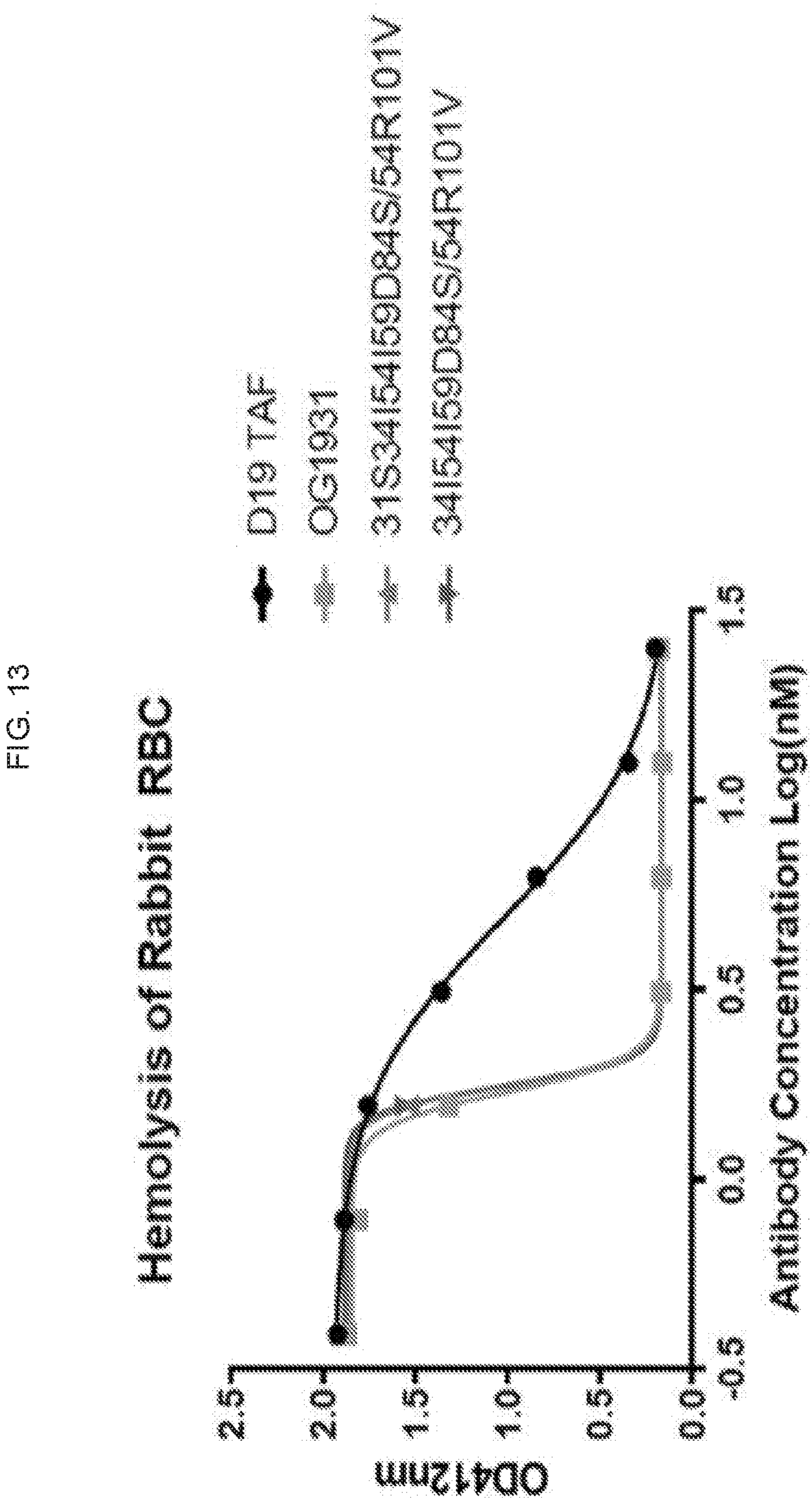

Hemolysis of Rabbit RBC
OD412nm
2.5
2.0
1.5
1.0
0.5
0.0
Antibody Concentration Log(nM)
2.5
2.0
1.5
1.0
0.5
0.0
D84S/S4R10V
S/S4R10V
D19 TAF
OG1931
31S34I64I69
34I64I69D84

FIG. 13

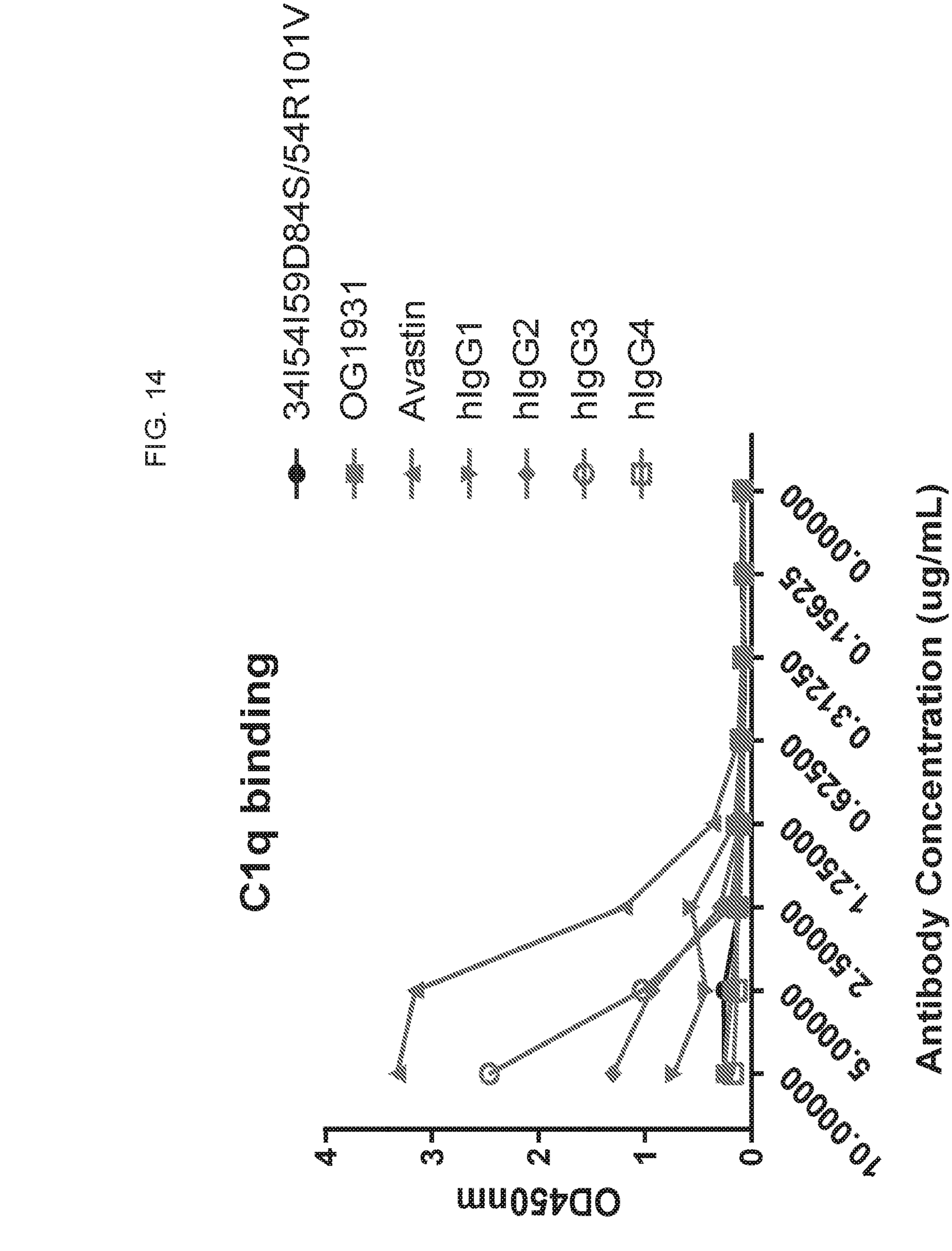
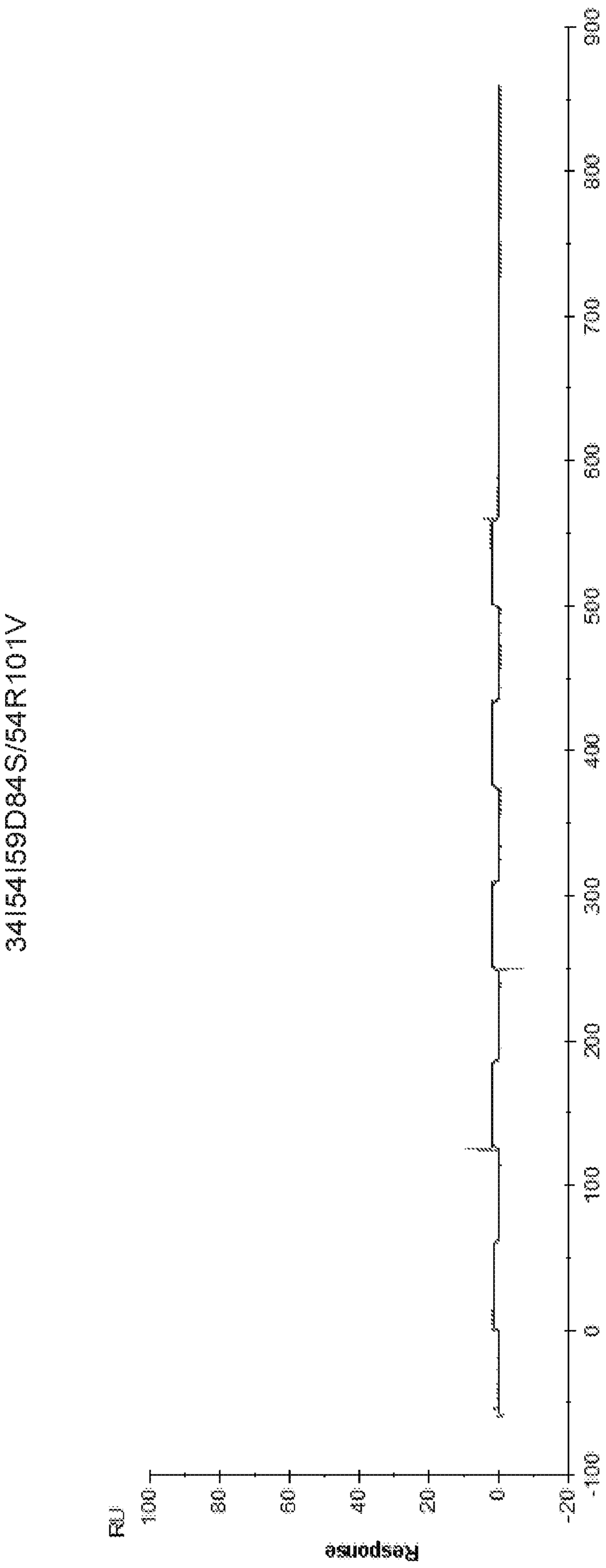

3454I59D84S/54R10
OG1931
Avastin
hIgG1
hIgG2
hIgG3
hIgG4
Antibody Concentration (ug/ml)
10.00000
5.000000
2.500000
1.250000
0.6250000
0.3125000
0.1562500
0.0000000
OD450nm
0
1
2
3
4
C1q binding

FIG. 14

FIG. 15A


34I54I59D84S/54R101V
RU
100
80
60
40
20
0
-20
Response
-100
0
100
200
300
400
500
600
700
800
900
Time

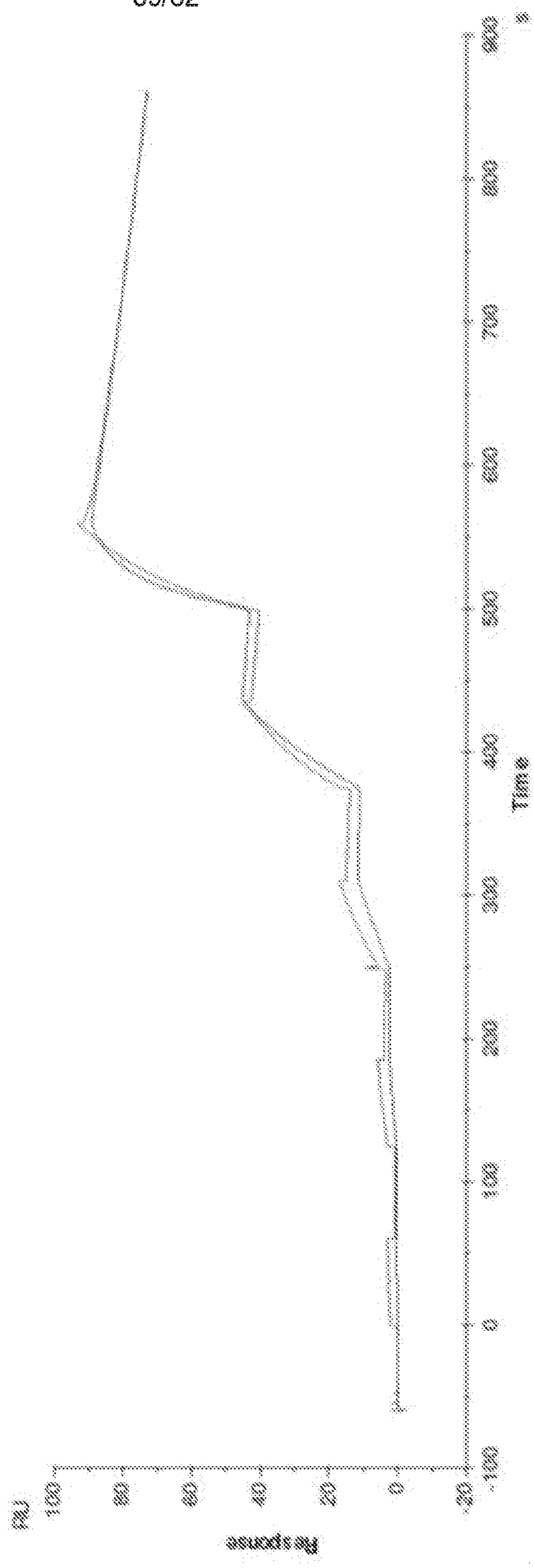


FIG. 15B

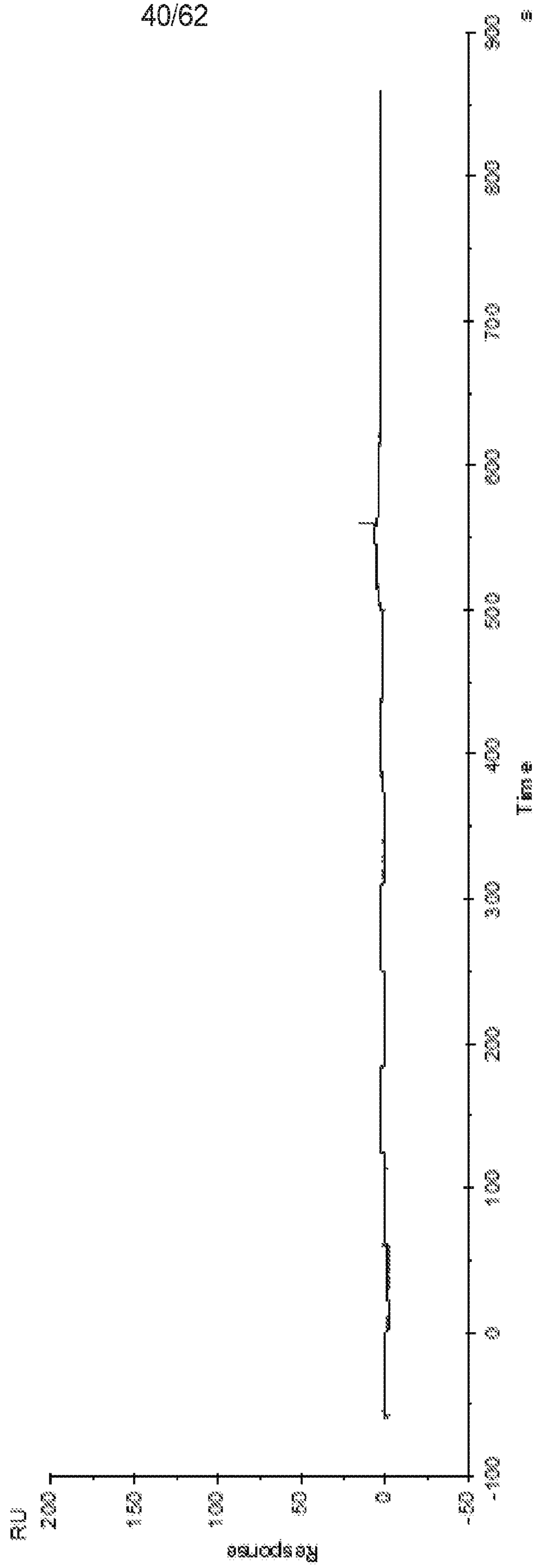


FIG. 16A

3454159D84S/54R101V

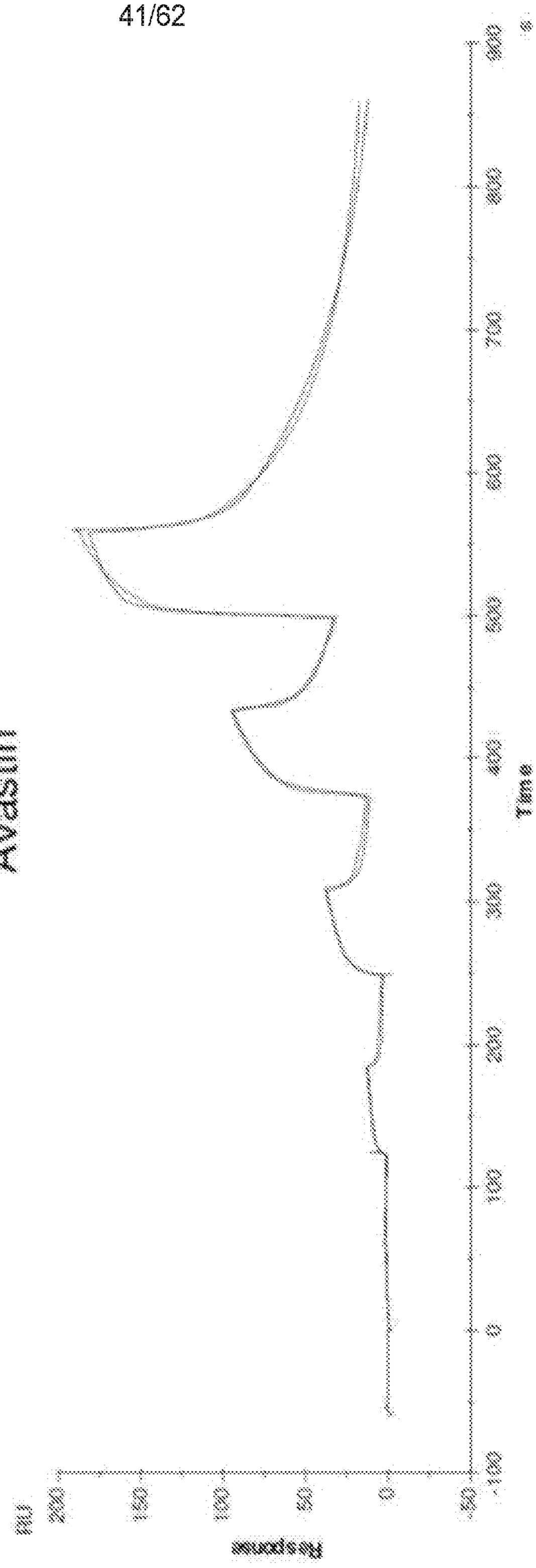


FIG. 16B

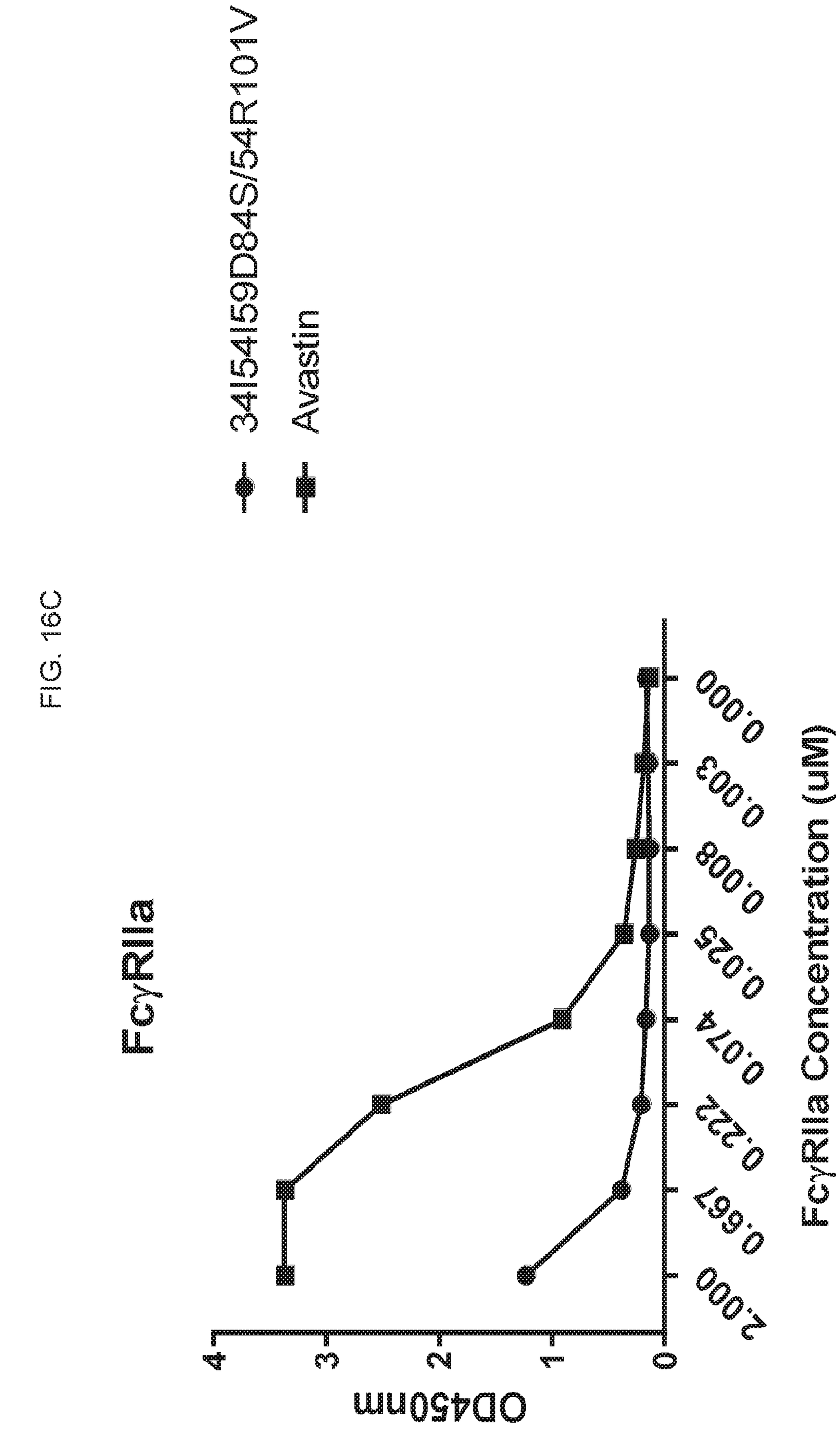
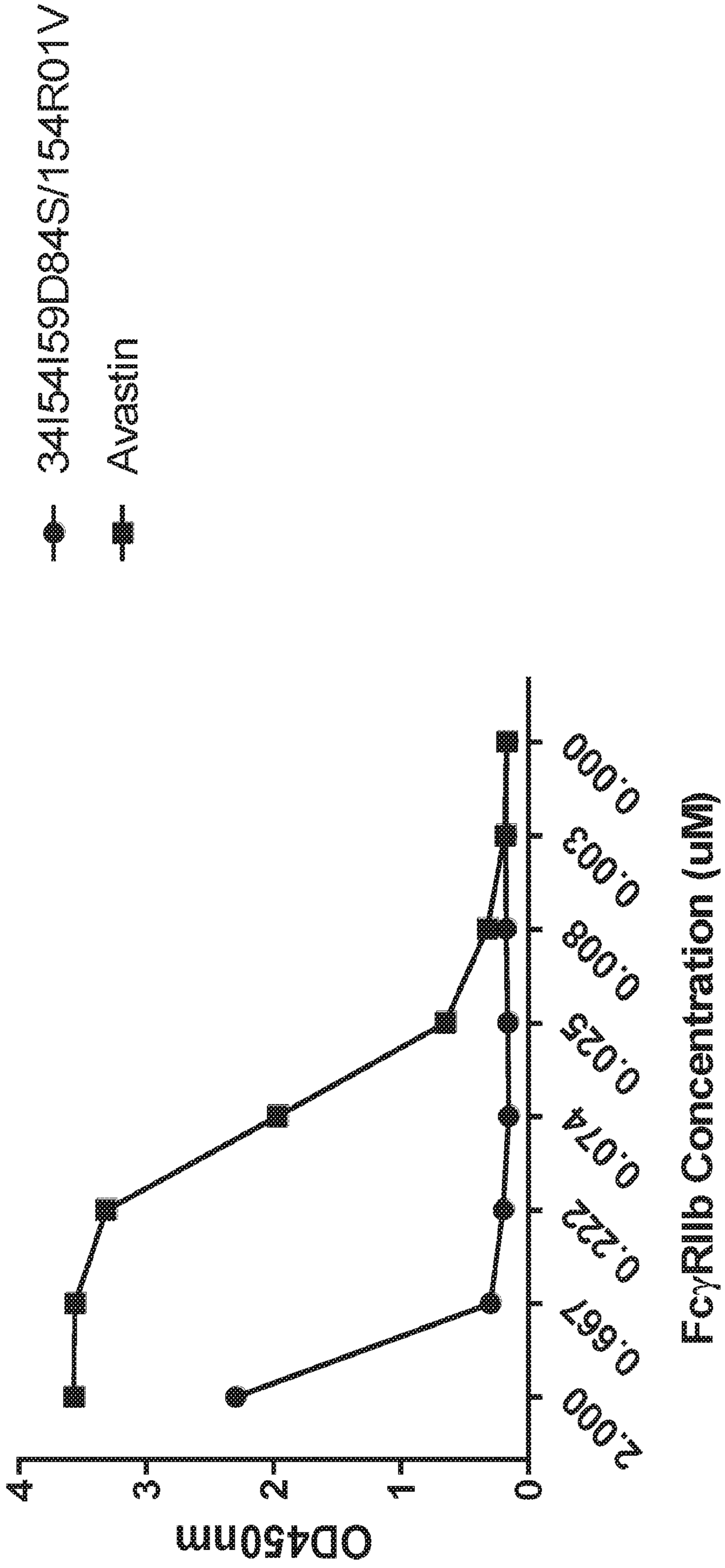

FcγRIIa
OD450nm
0
1
2
3
4
2.000
0.667
0.222
0.074
0.025
0.008
0.003
0.000
FcγRIIa Concentration (uM)
Avastin
34154/59D
84S/54R/101V

FIG. 16C

FIG. 16D


4S/154R01V
34I5459D8
Avastin
FcγRIIb
FcγRIIb Concentration (nM)
0.000
0.003
0.008
0.025
0.074
0.222
0.667
2.000
OD450nm
0
1
2
3
4

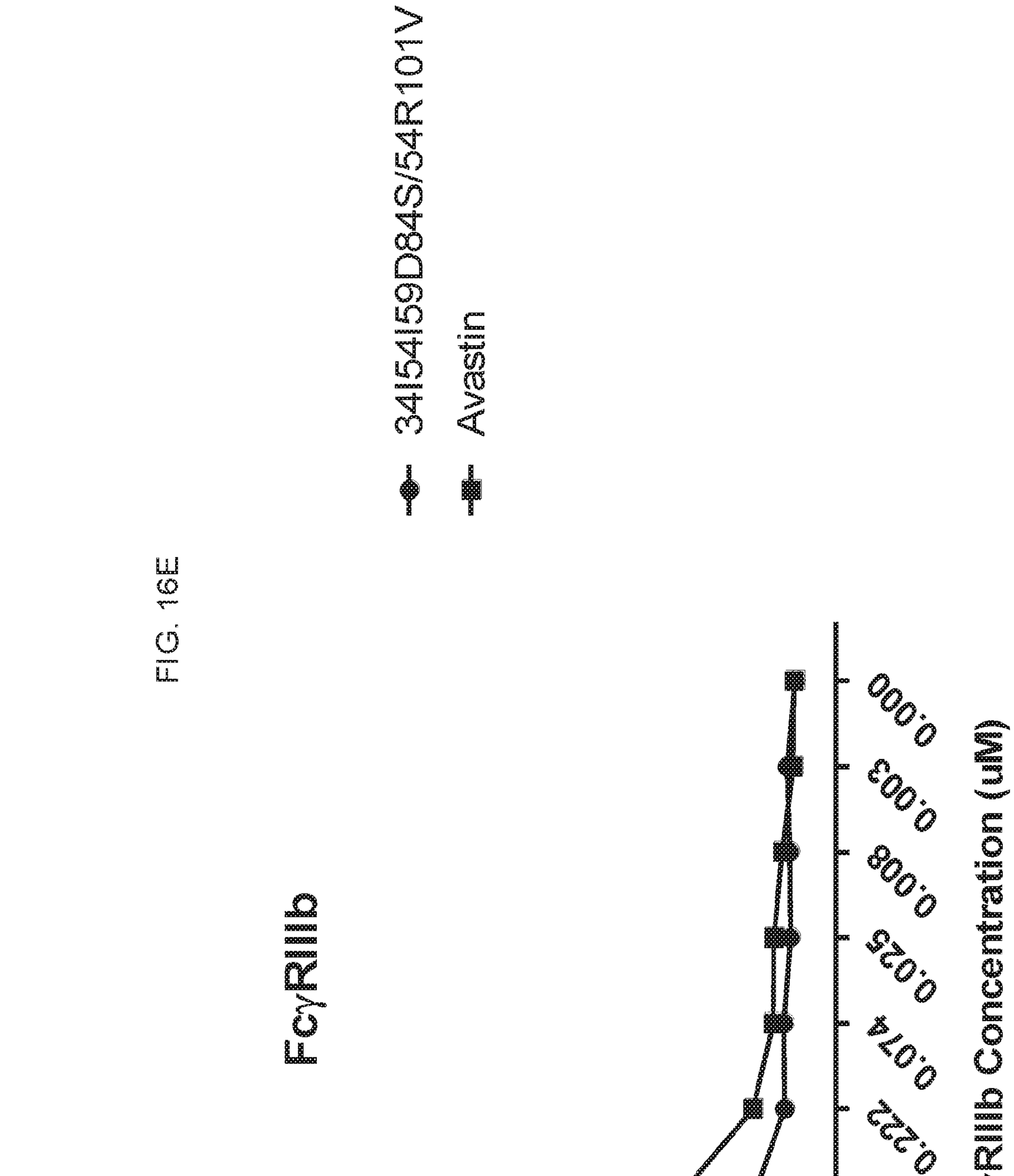


FIG. 16E
FcγRIIb
OD450nm
1.5
1.0
0.5
0.0
2.000
0.667
0.222
0.074
0.025
0.008
0.003
0.000
FcγRIIb Concentration (uM)
341541591D84S/
Avastin

FIG. 17

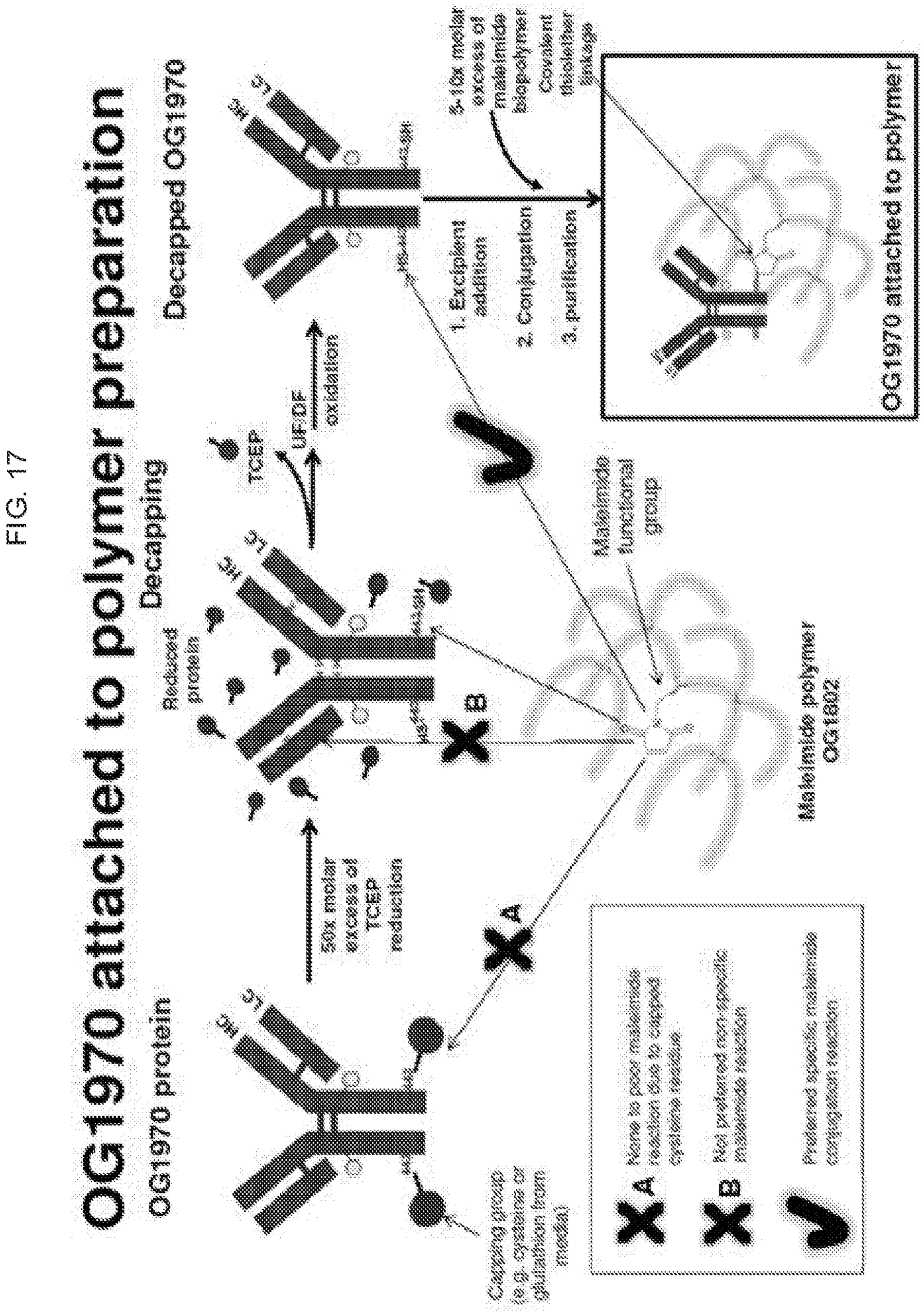

OG1970 attached to polymer preparation
Decapped OG1970
OG1970 protein
Maleimide polymer OG1602
Reduced protein
Capping group (e.g. cysteine or glutathione moiety)
50x molar excess of TCEP reduction
TCEP
UF/DF oxidation
1. Excipient addition
2. Conjugation
3. purification
5-10x molar excess maleimide polymer
Covalent thioether linkage
OG1970 attached to polymer
Maleimide functional group
Reduced protein cysteine residue
Not reduced non-interchain cysteine residue
Capped cysteine residue

FIG. 18

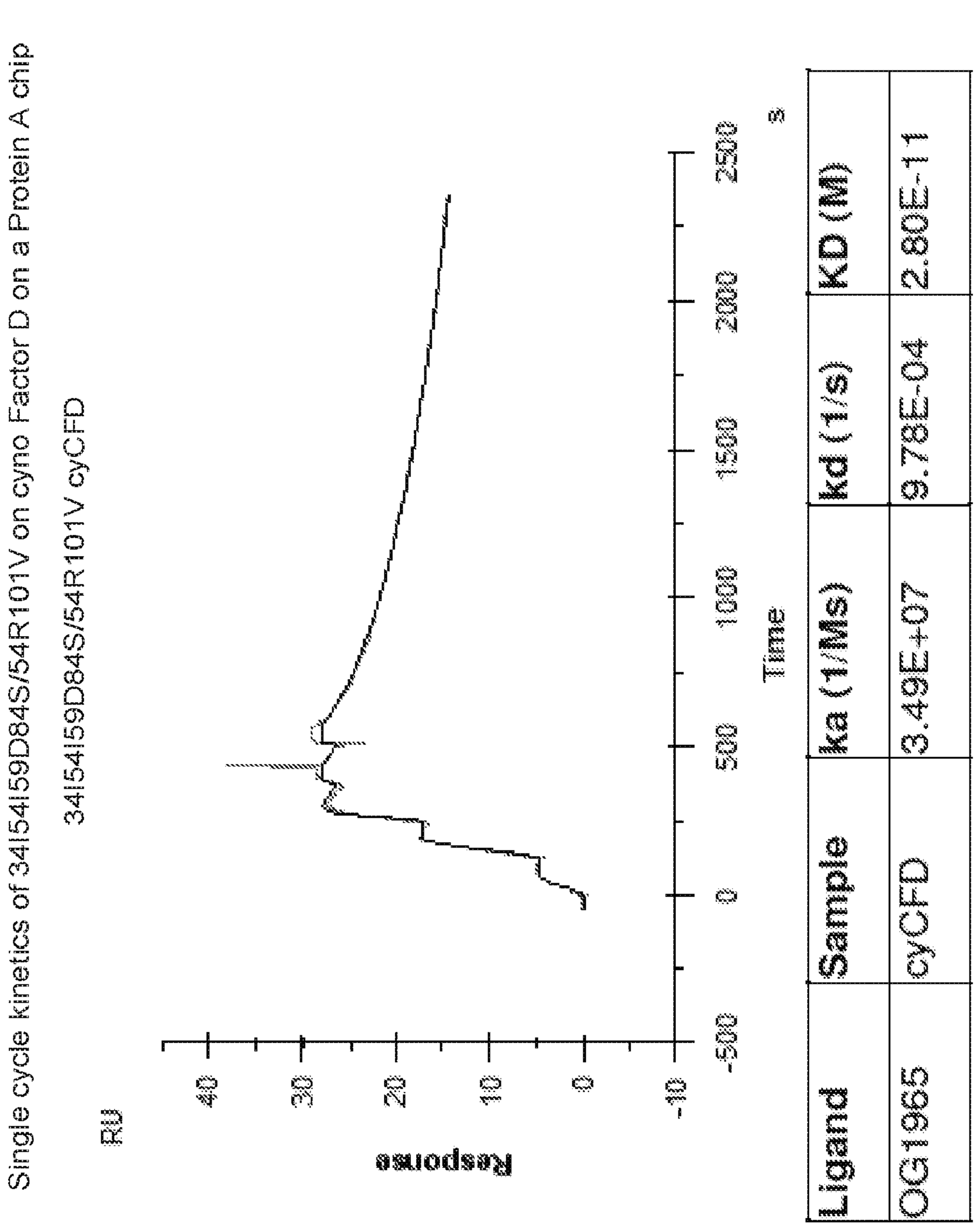
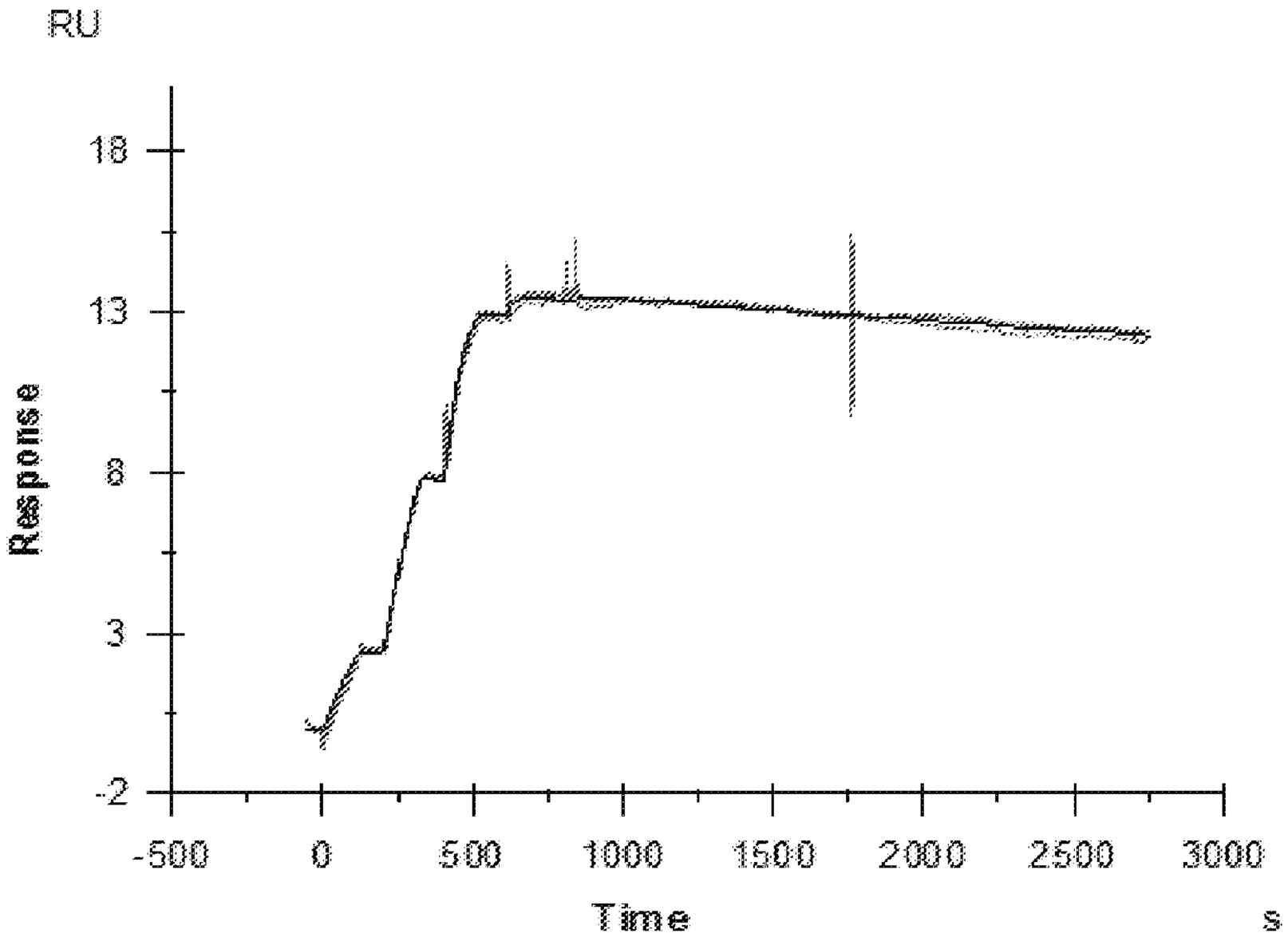

Single cycle kinetics of 34I54I59D84S/54R101V on cyno Factor D on a Protein A chip
34I54I59D84S/54R101V cyCFD
RU
Response
40
30
20
10
0
-10
-500
0
500
1000
1500
2000
2500
Time
Sample
ka (1/Ms)
KD (M)
cyCFD
3.49E+07
2.80E-11
Ligand
kd (1/s)
OG1965
9.78E-04

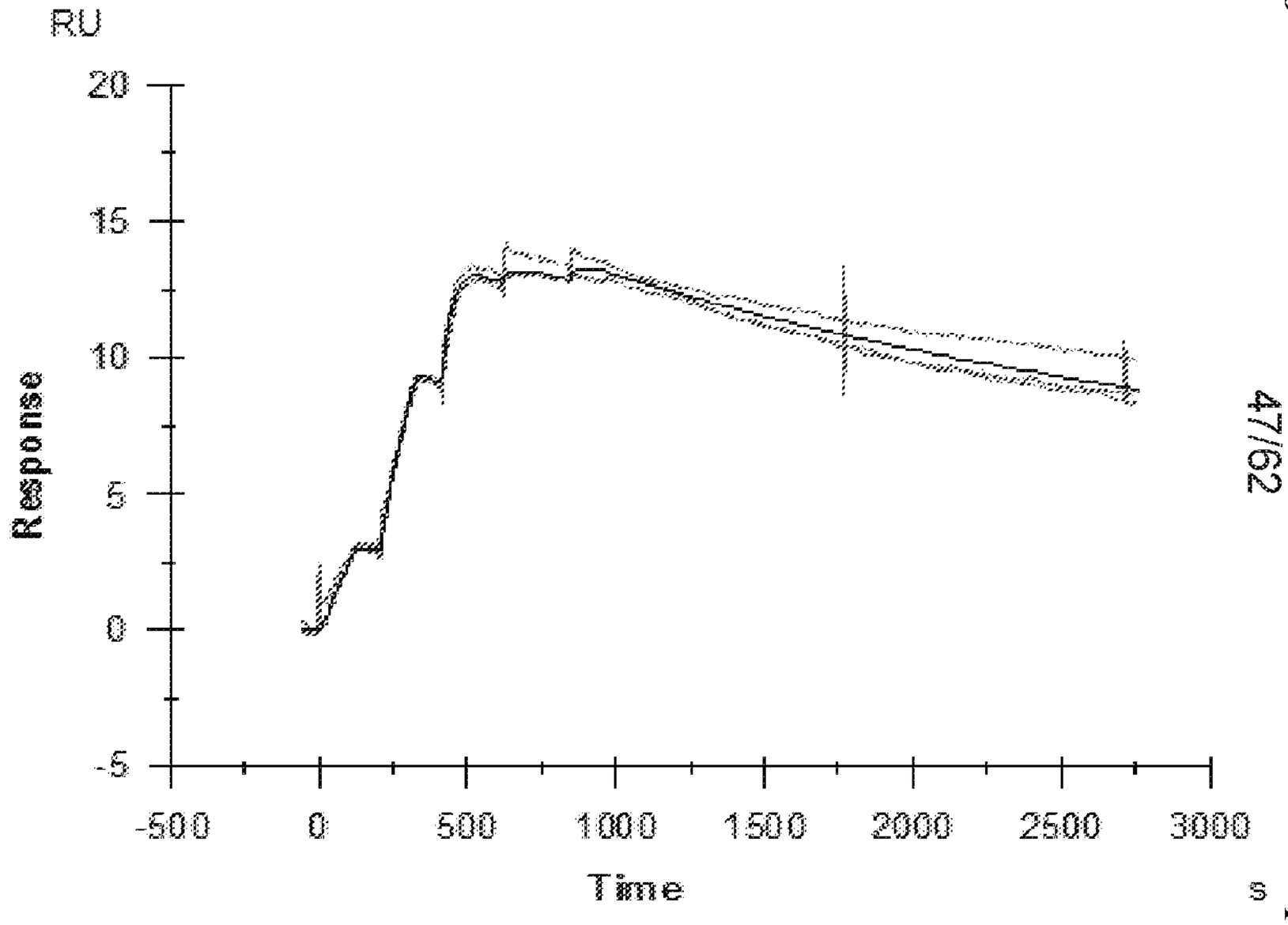
FIG. 19

Single cycle kinetics of 34I54I59D84S/54R101V; Biotinylated antibody on neutravidin chip

25 Degrees



37 Degrees

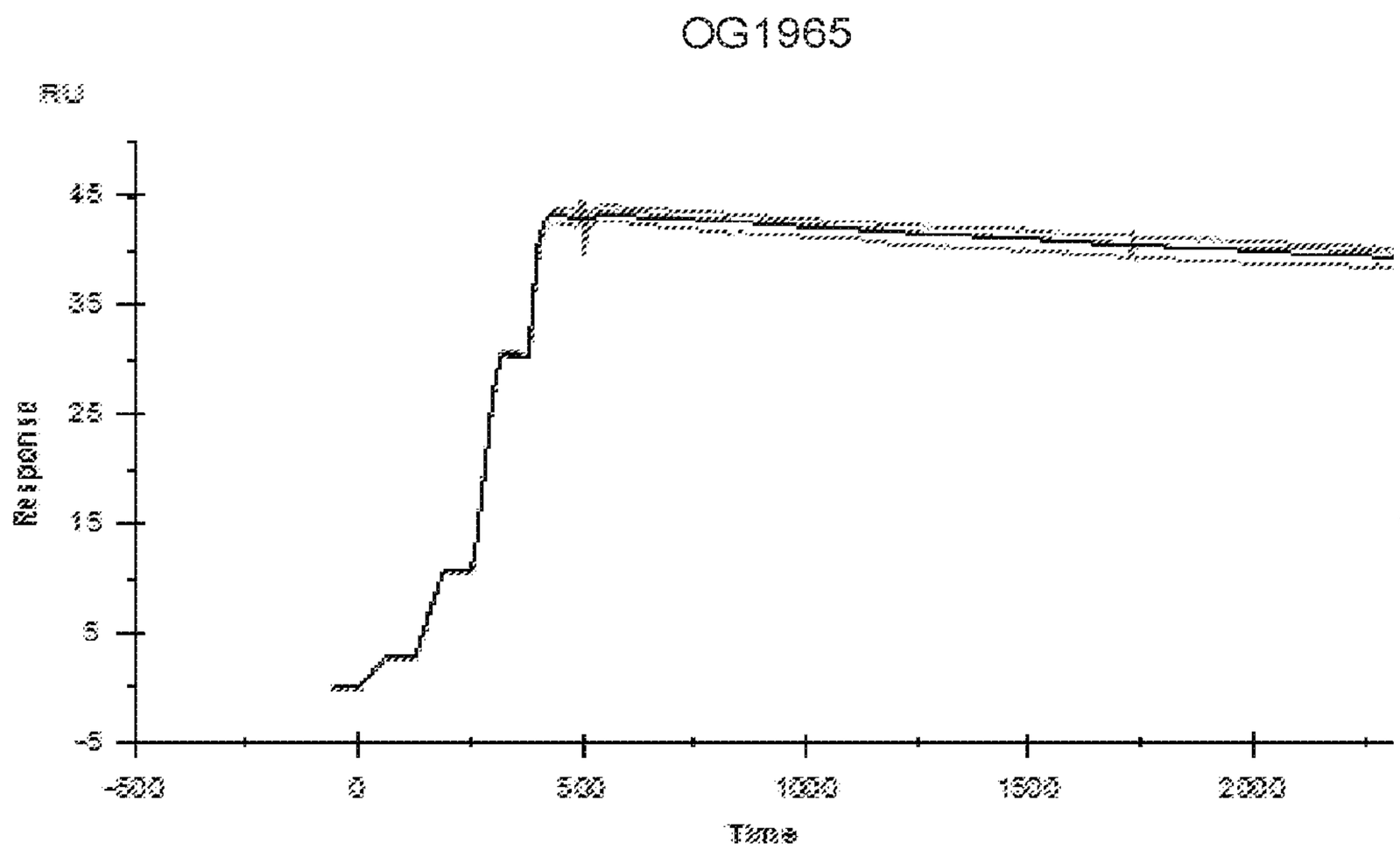


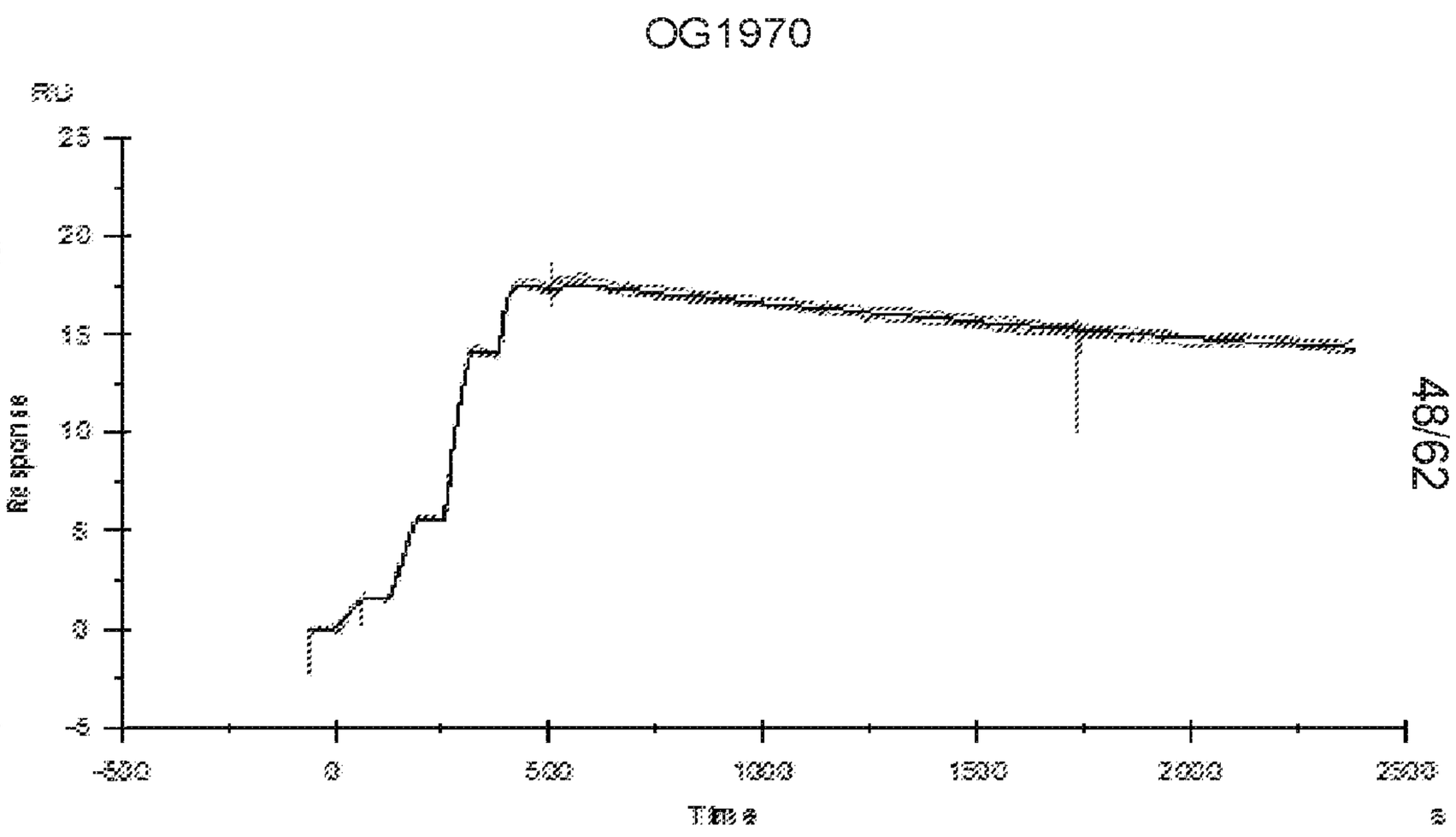
	ka (1/Ms)	kd (1/s)	KD (M)
25°	1.40E+07	5.08E-05	3.64E-12
37°	2.55E+07	2.41E-04	9.56E-12

SUBSTITUTE SHEET (RULE 26)

FIG. 20

25 Degrees Single Cycle Kinetics on a Protein A Chip



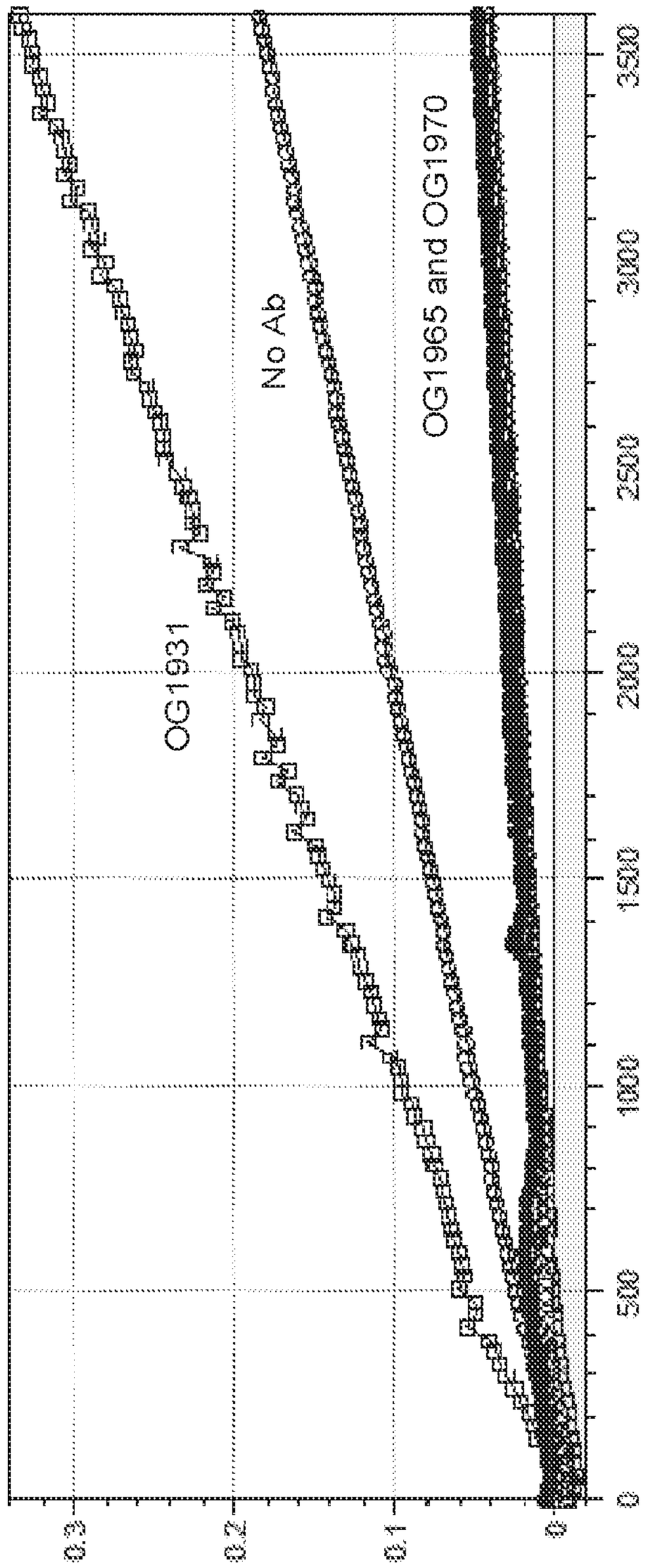


Kinetic Exclusion Assay data at 37 degrees and Biacore data at 25 degrees

Molecule	Platform (˚C)	K_{on} (M)	K_{off} (M)	K_D (pM)
OG1965	Biacore (25˚)	2.52×10^{7}	6.30×10^{-3}	2.50
	KinExA (37˚)	3.06×10^{7}	1.79×10^{-4}	5.86
OG1970	Biacore (25˚)	2.16×10^{7}	1.33×10^{-4}	6.14
	KinExA (37˚)	3.67×10^{7}	2.96×10^{-4}	8.07

SUBSTITUTE SHEET (RULE 26)

FIG. 21



	Vmax (milliOD/min)	% control
OG1931	5.5885	179.8527
OG1965	0.81	26.067940 73
OG1970	0.655	21.079631 12

FIG. 22A

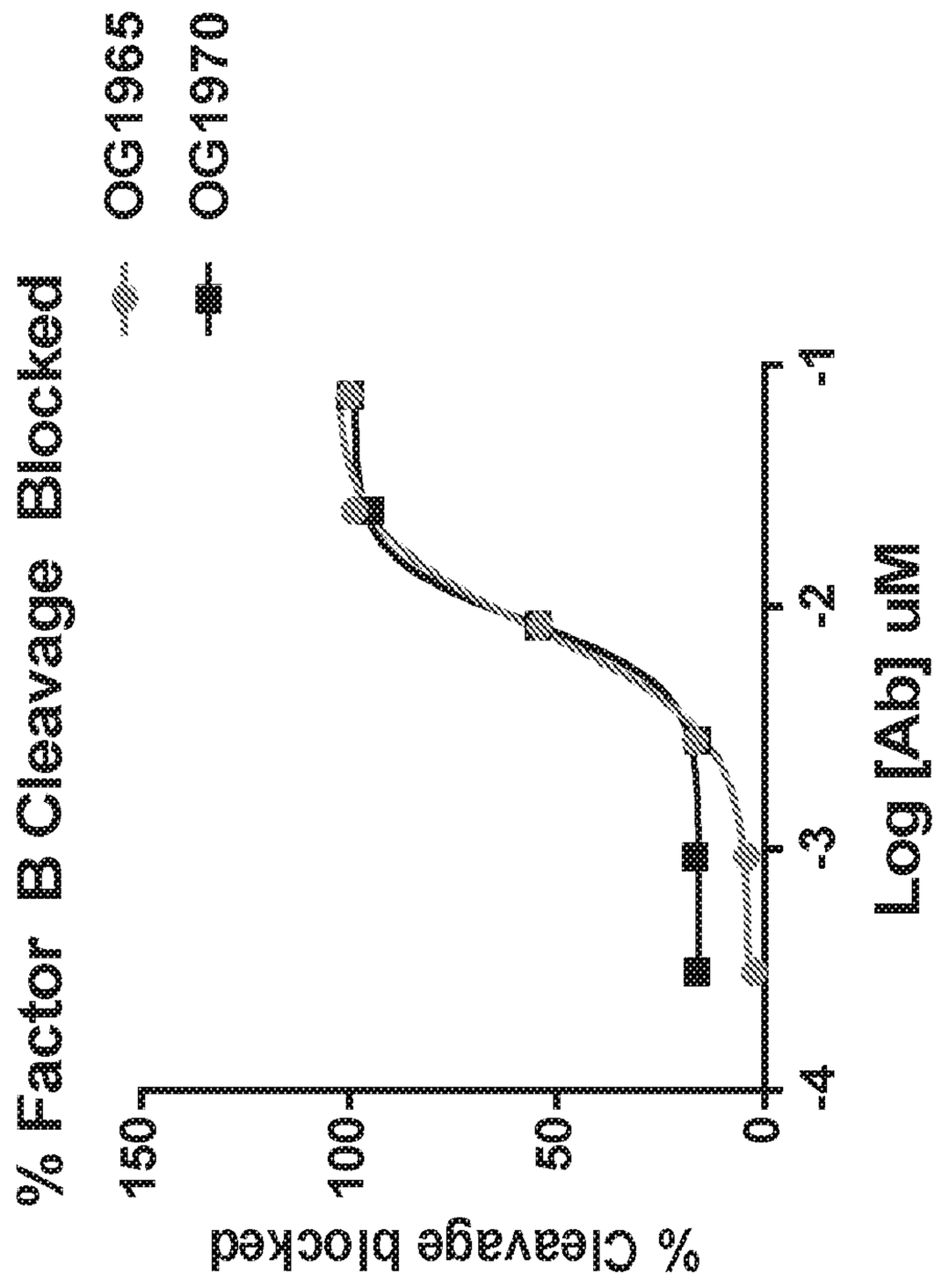
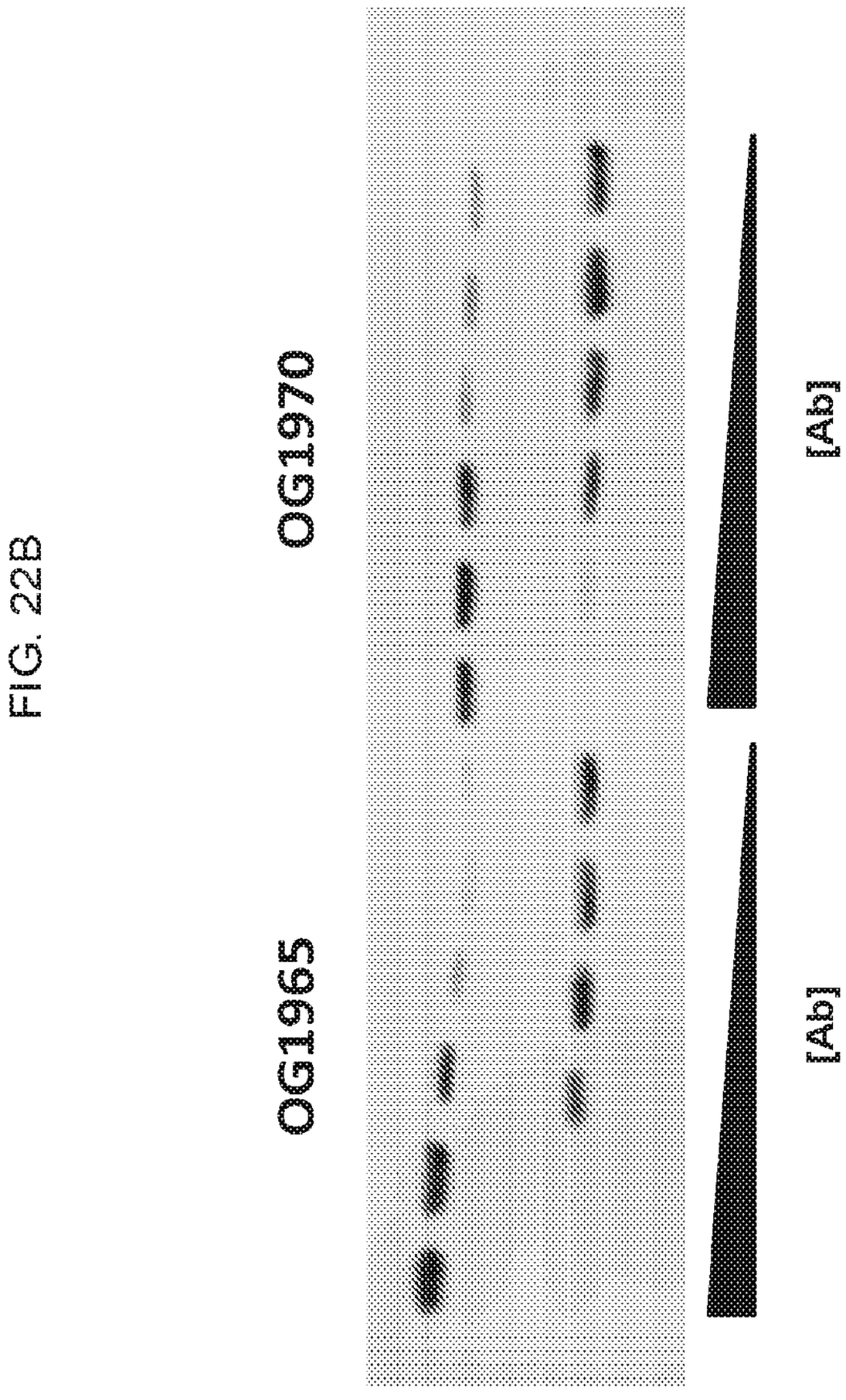

% Factor B Cleavage Blocked
OG1965
OG1970
150
100
50
0
% cleavage blocked
-1
-2
-3
-4
Log [Ab] uM

FIG. 22B



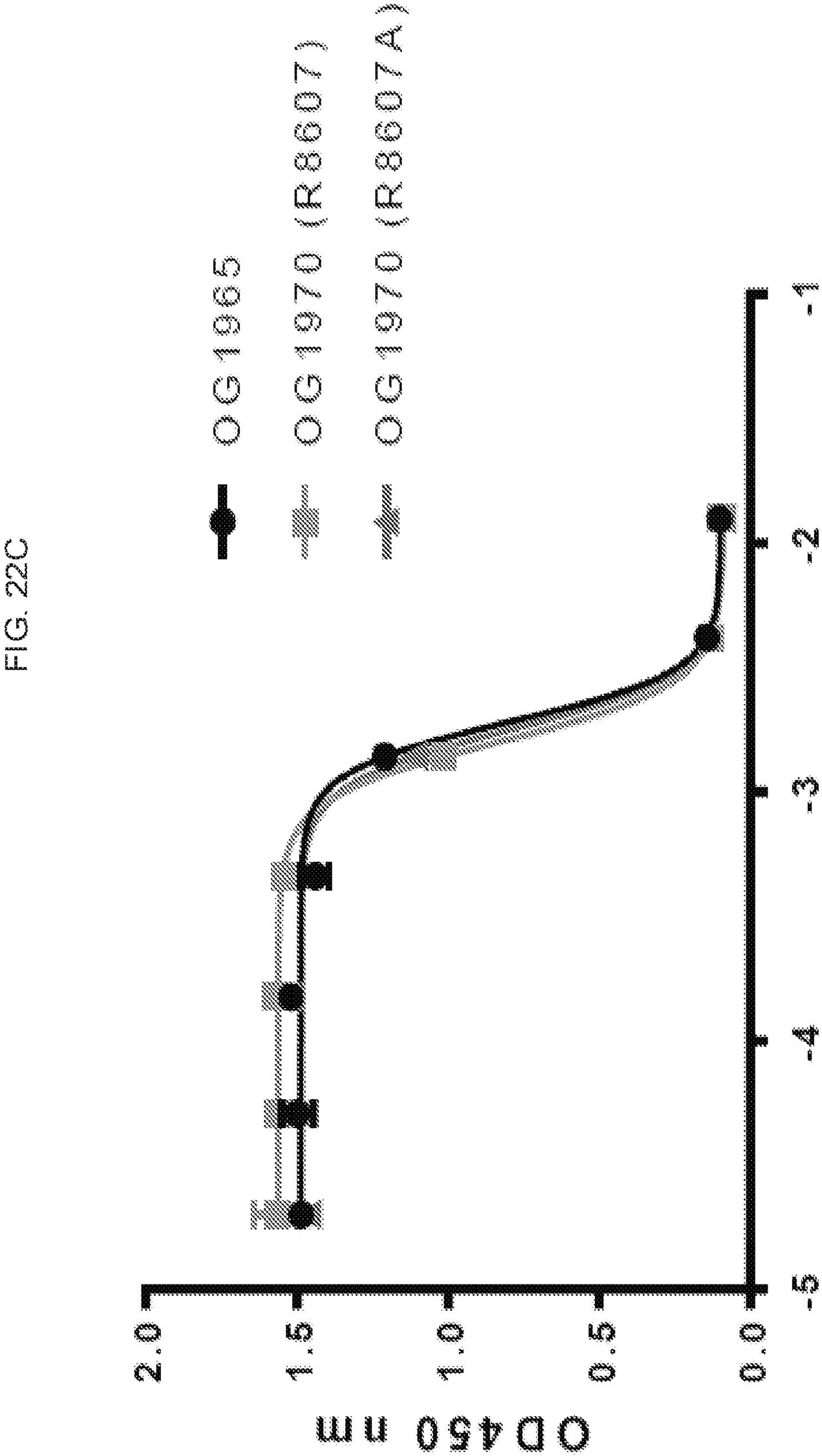

OG1965
OG1870 (R8
OG1970 (R8
Log [Ab] µM
-1
-2
-3
-4
Factor B Cleavage Assay ELISA
OD450 nm
2.0
1.5
1.0
0.5
0.0

FIG. 22C

FIG. 23

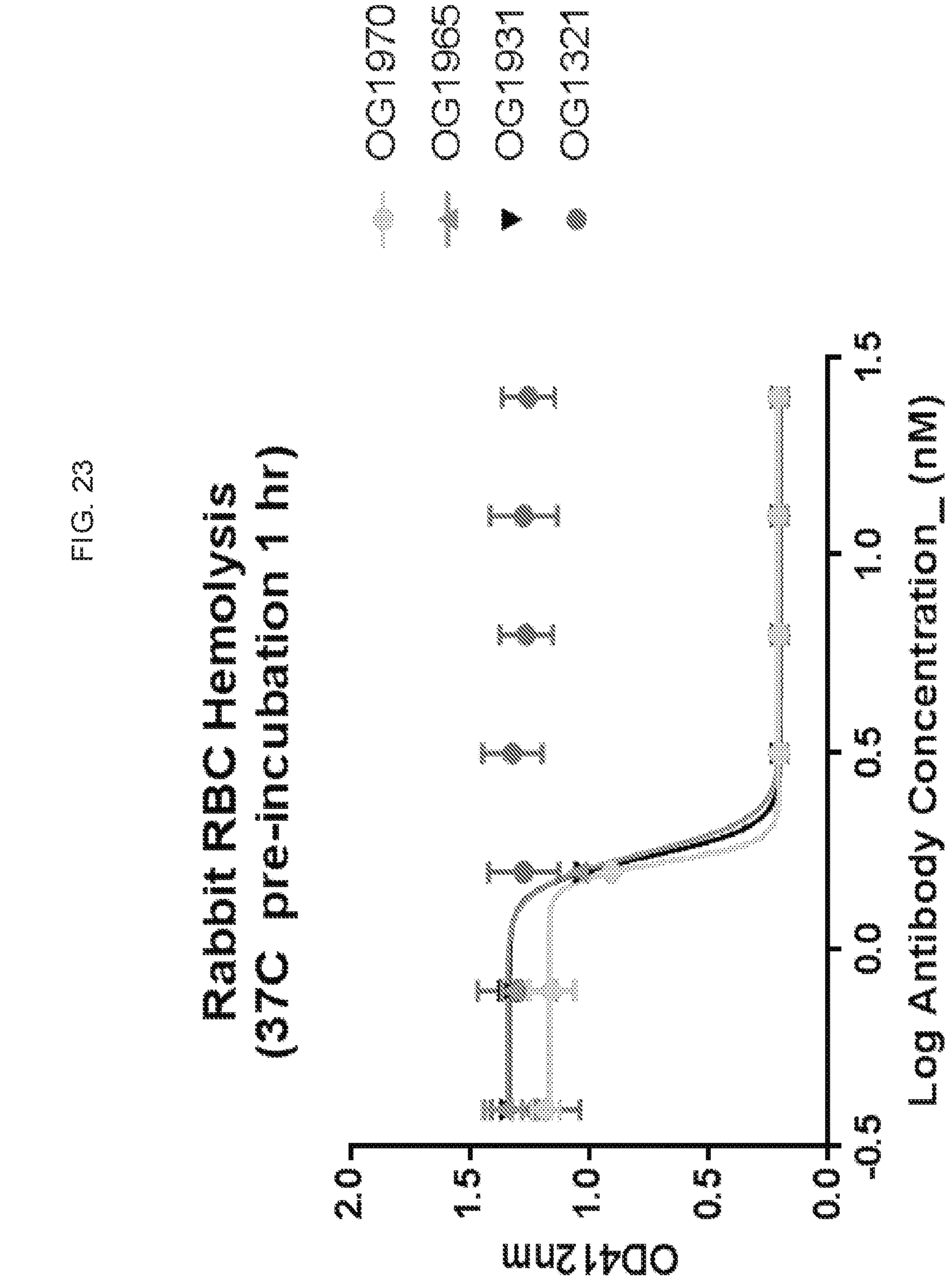
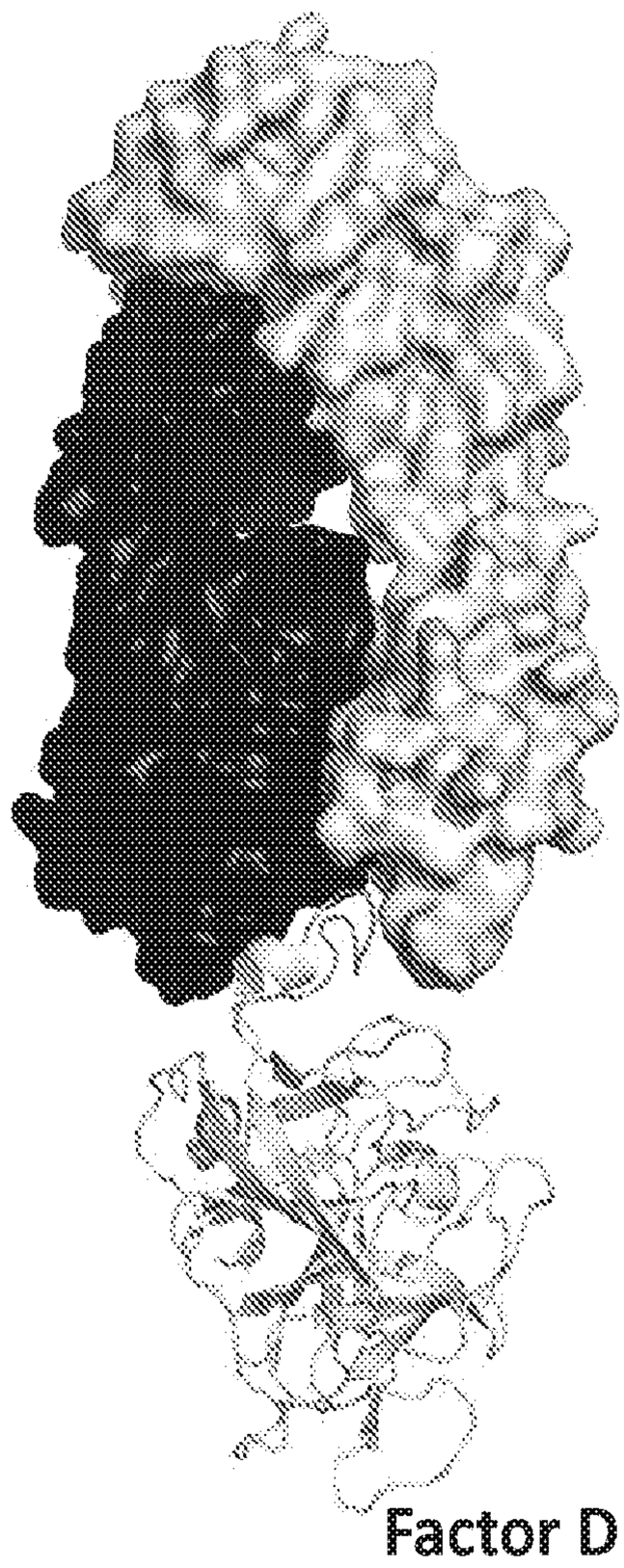

Rabbit RBC Hemolysis
(37C pre-incubation 1 hr)
OG1970
OG1965
OG1931
OG1321
OD412nm
2.0
1.5
1.0
0.5
0.0
0.5
0.0
0.5
1.0
1.5
Log Antibody Concentration_ (nM)

FIG. 24A



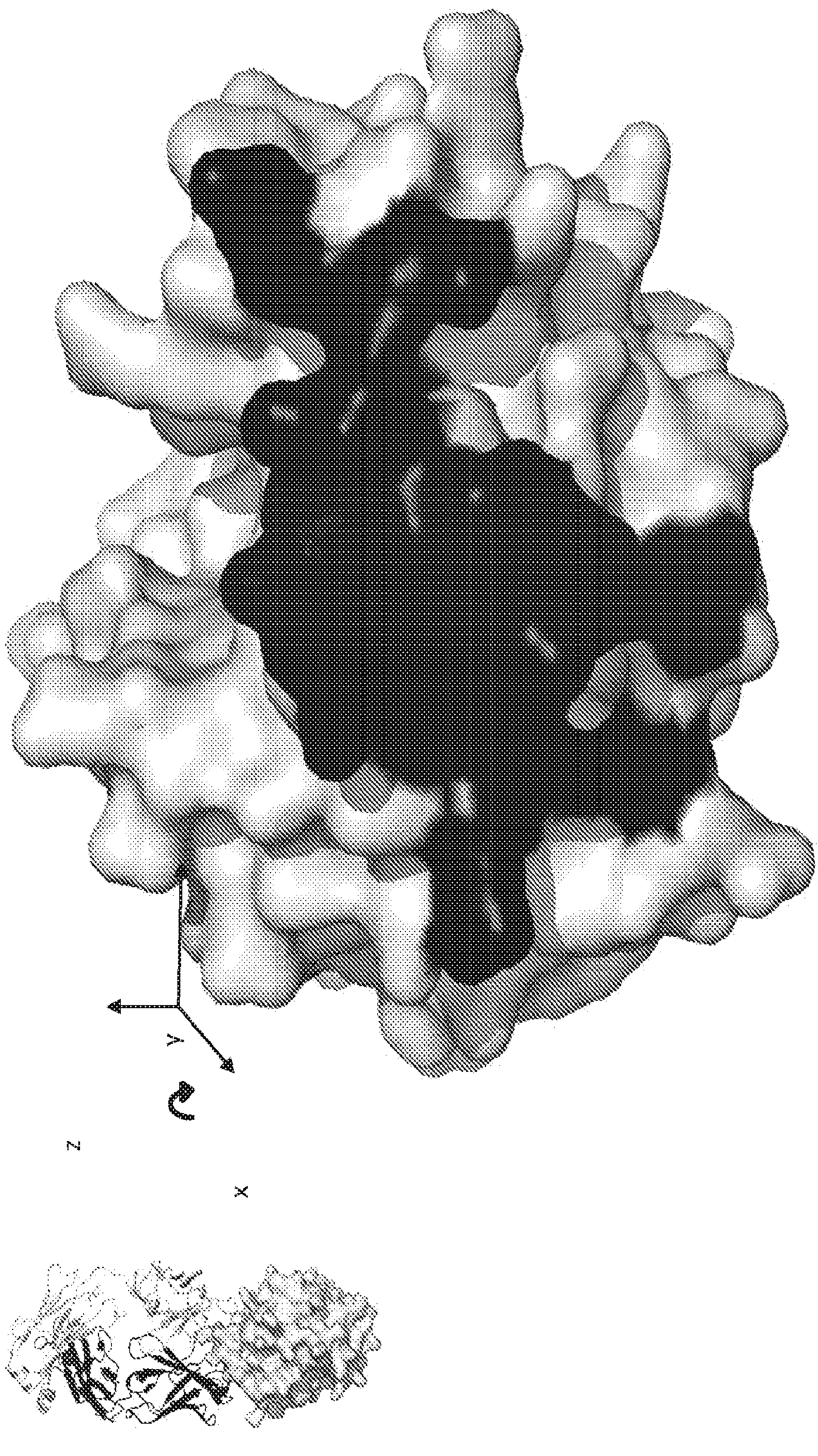


FIG. 24B

FIG. 25

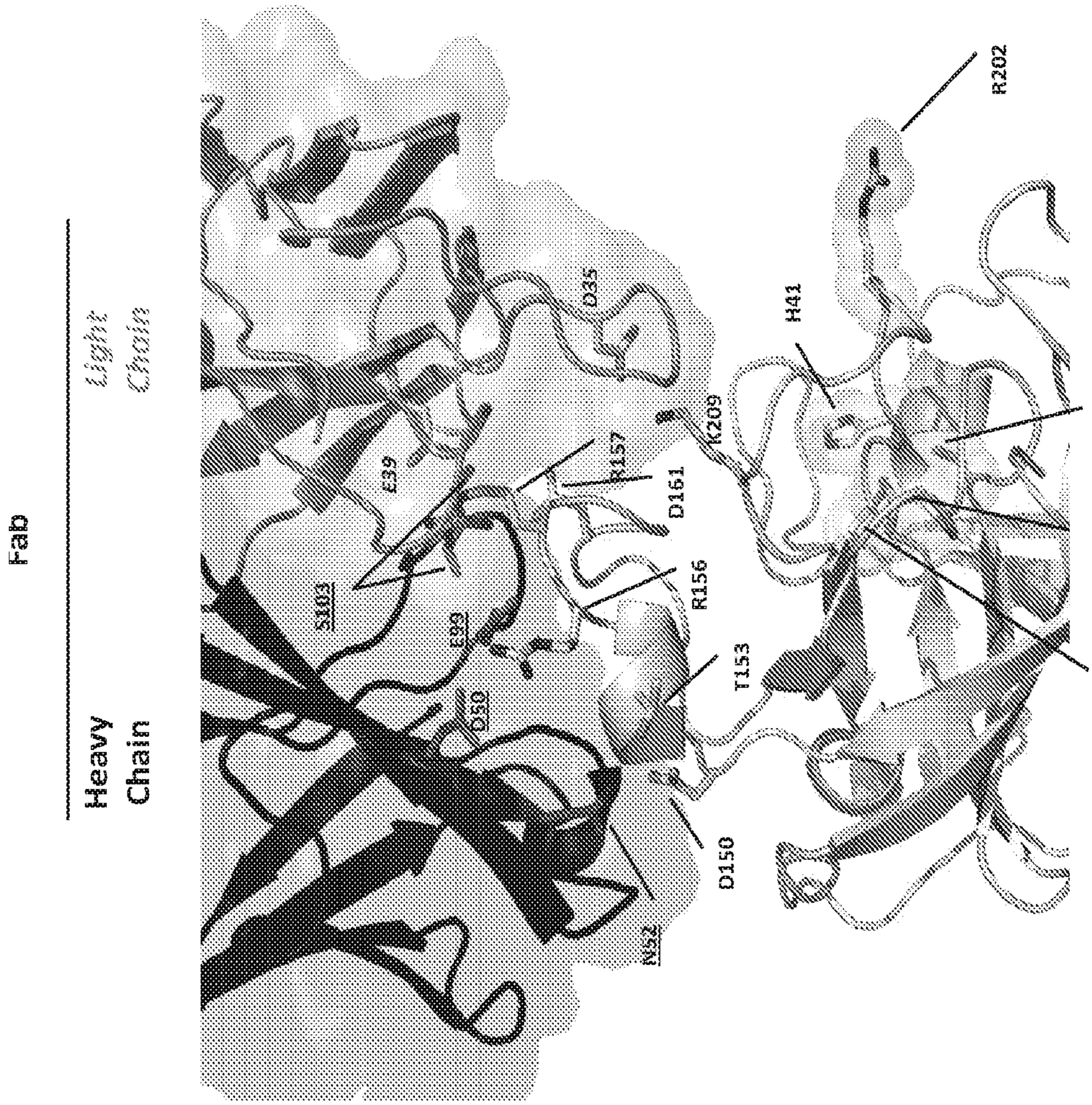

Fab
Heavy Chain
Light Chain
S183
R202
H41
D35
E39
R157
D161
K209
S183
E99
D50
R156
T153
D150
N52
D89
D177
Factor D

FIG. 26A

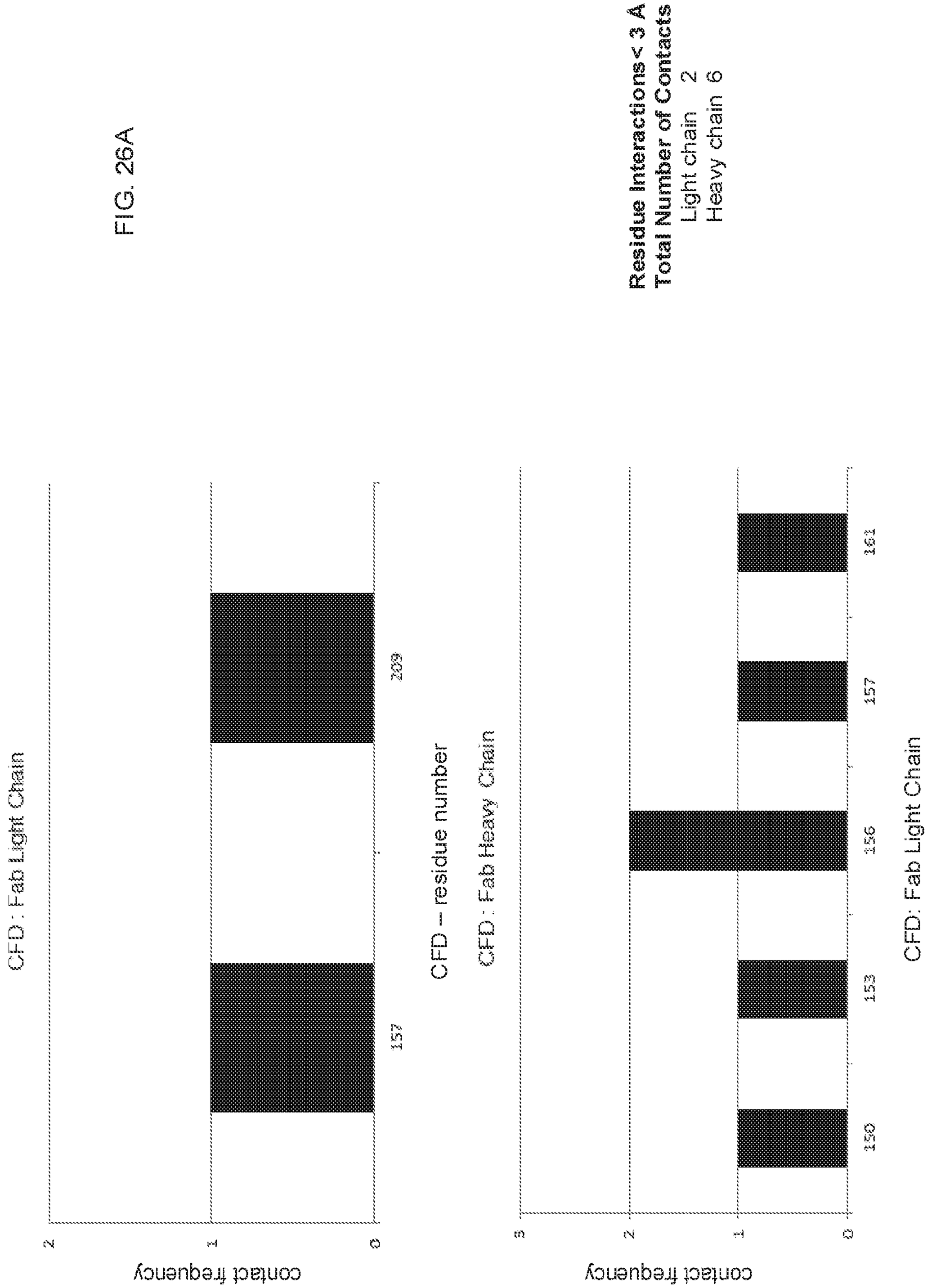

Residue Interactions < 3 Å
Total Number of Contacts
Light chain 2
Heavy chain 6
CFD: Fab Light Chain
CFD – residue number
CFD: Fab Heavy Chain
CFD: Fab Light Chain
contact frequency
191
203
157
156
157
153
150
157
3
2
1
0

FIG. 26B

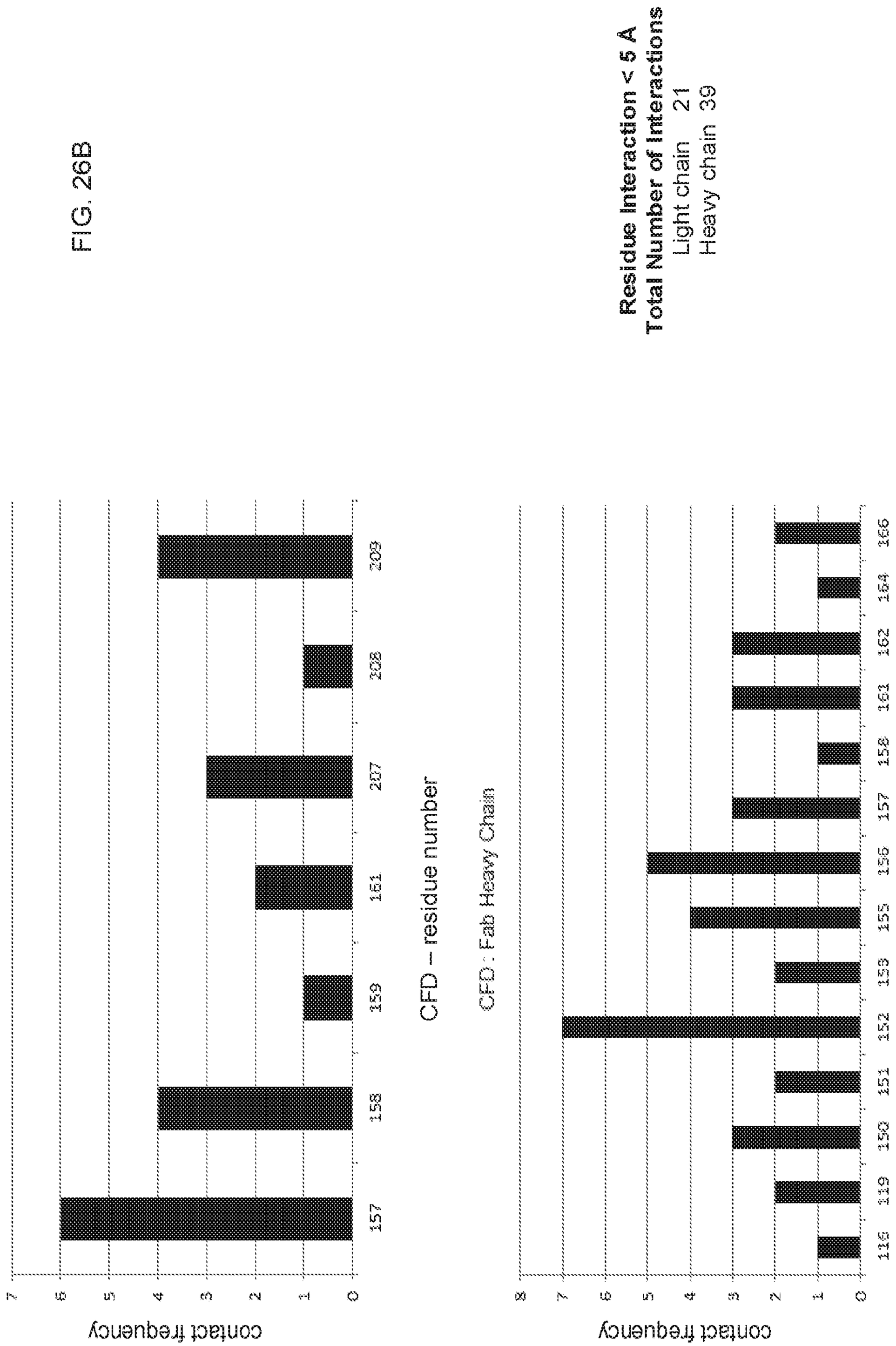
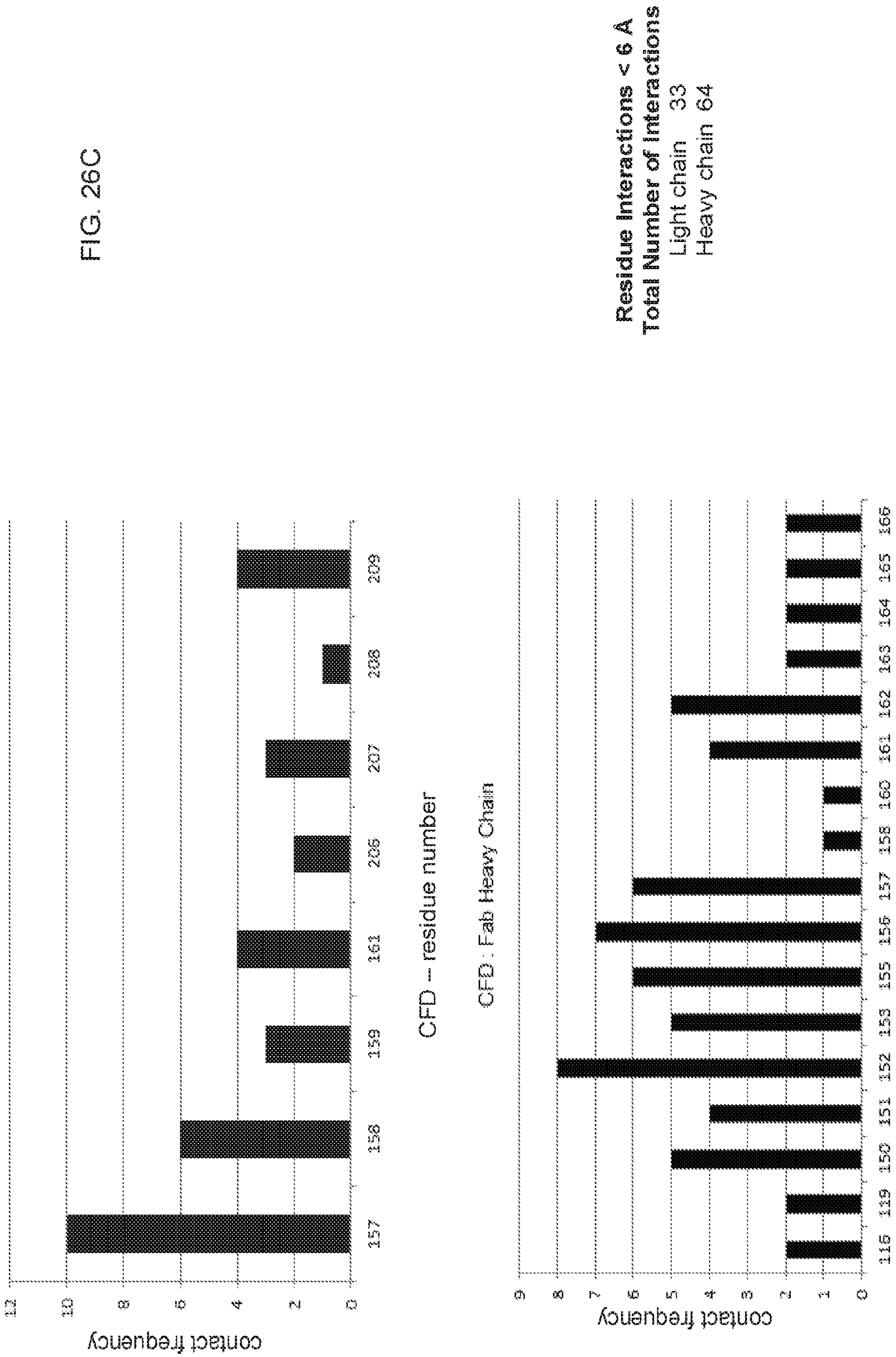

Residue Interaction < 5 Å
Total Number of Interactions
Light chain 21
Heavy chain 39
CFD : Fab Light Chain
CFD – residue number
159
161
207
208
158
157
contact frequency
CFD : Fab Heavy Chain
CFD – residue number
152
153
155
156
157
158
161
162
150
119
151
115
contact frequency

FIG. 26C


Residue Interactions < 6 Å
Total Number of Interactions
Light chain 33
Heavy chain 64
CFD : Fab Light Chain
CFD – residue number
contact frequency
12
10
8
6
4
2
0
157
158
159
161
205
207
208
CFD : Fab Heavy Chain
CFD – residue number
contact frequency
0
1
2
3
4
5
6
7
8
9
116
119
150
151
152
153
155
156
157
158
160
161
162
163
164
165
166

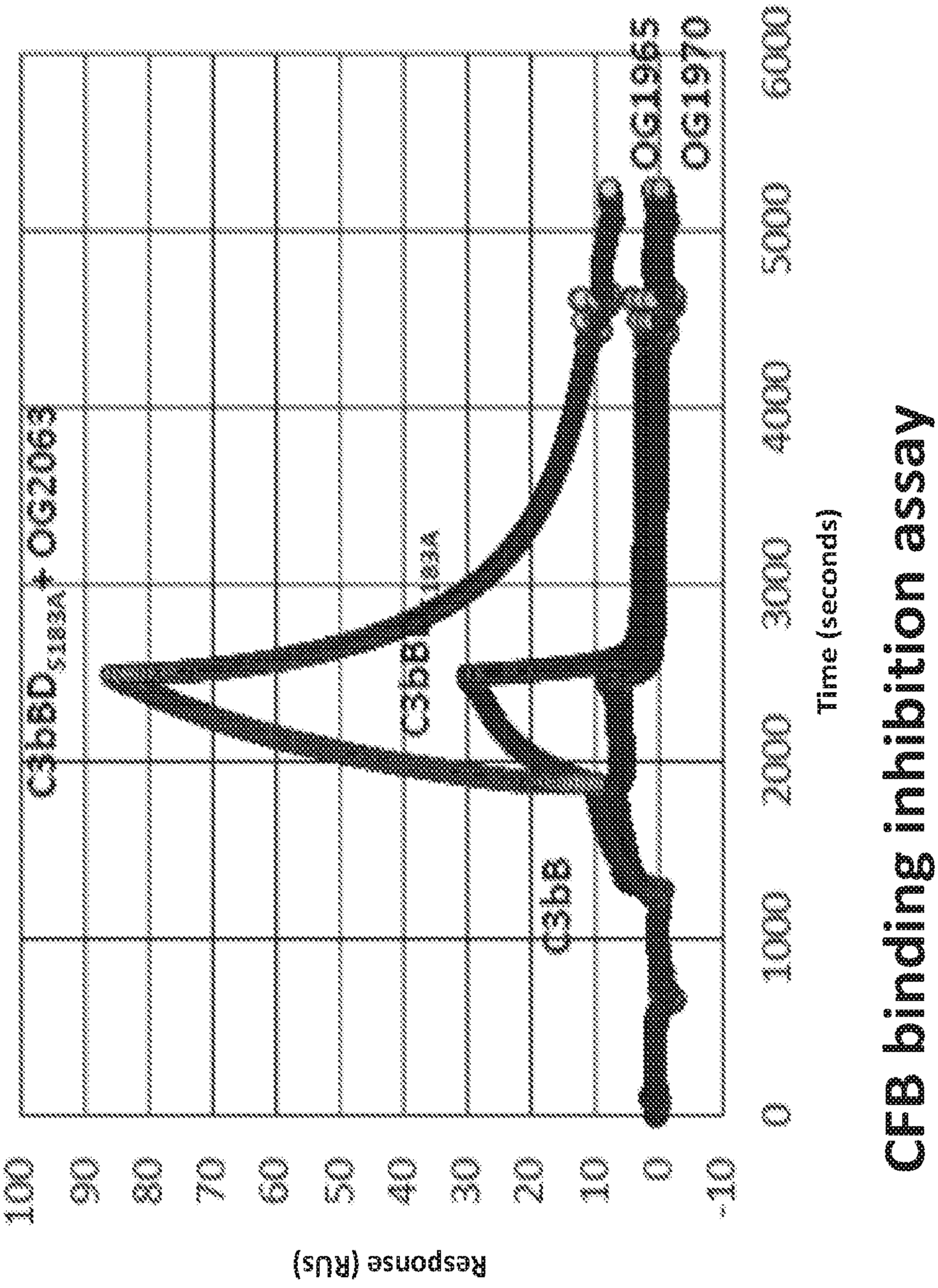

CFB binding inhibition assay
Response (RUs)
Time (seconds)
0
1000
2000
3000
4000
5000
6000
0
10
20
30
40
50
60
70
80
90
100
C3bB + OG2063
C3bB + 2%
C3bB
OG196S
OG197O

FIG. 27

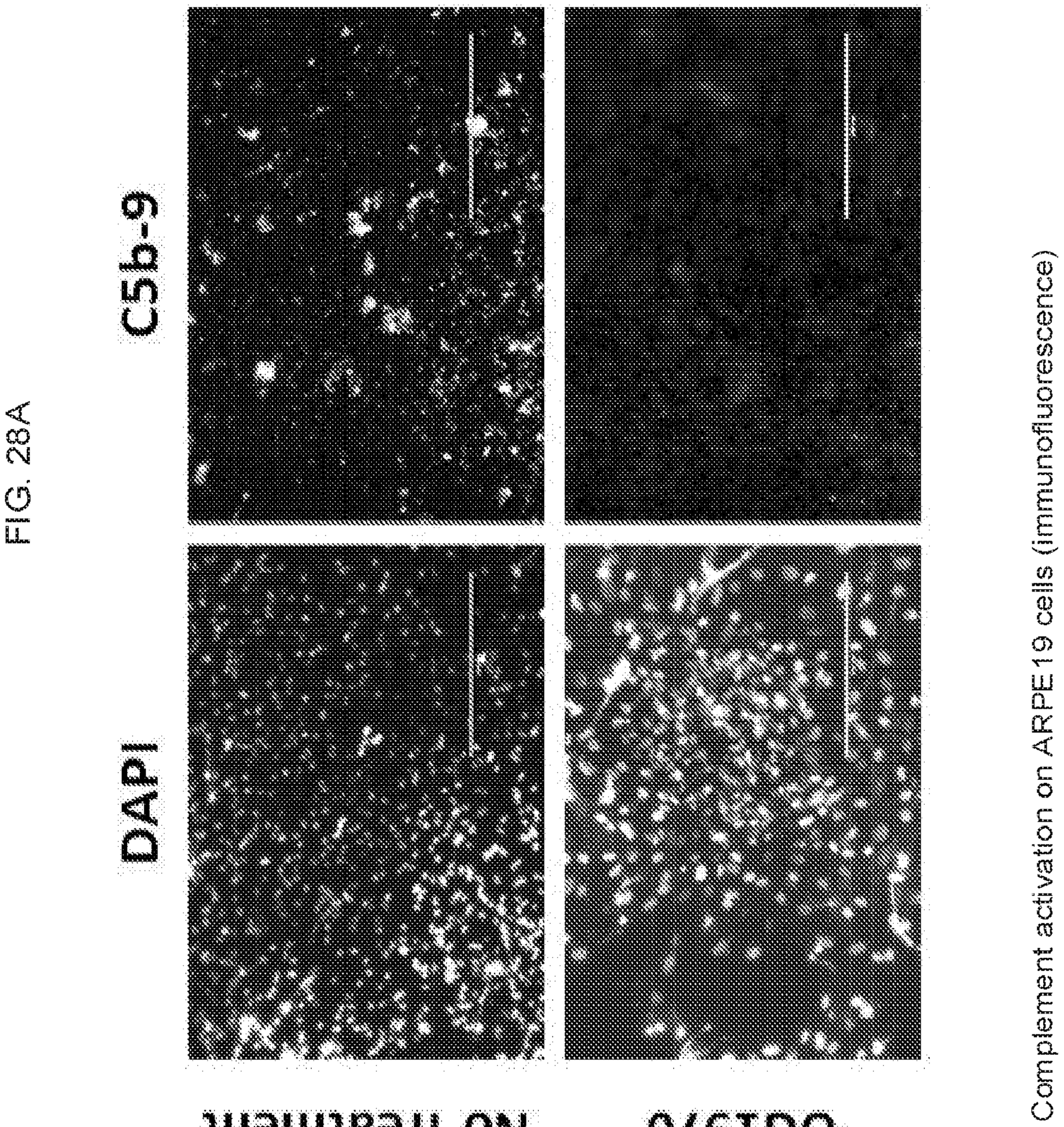

C5b-9
DAPI
No Treatment
OCI970
Complement activation on ARPE19 cells (immunofluorescence)

FIG. 28A

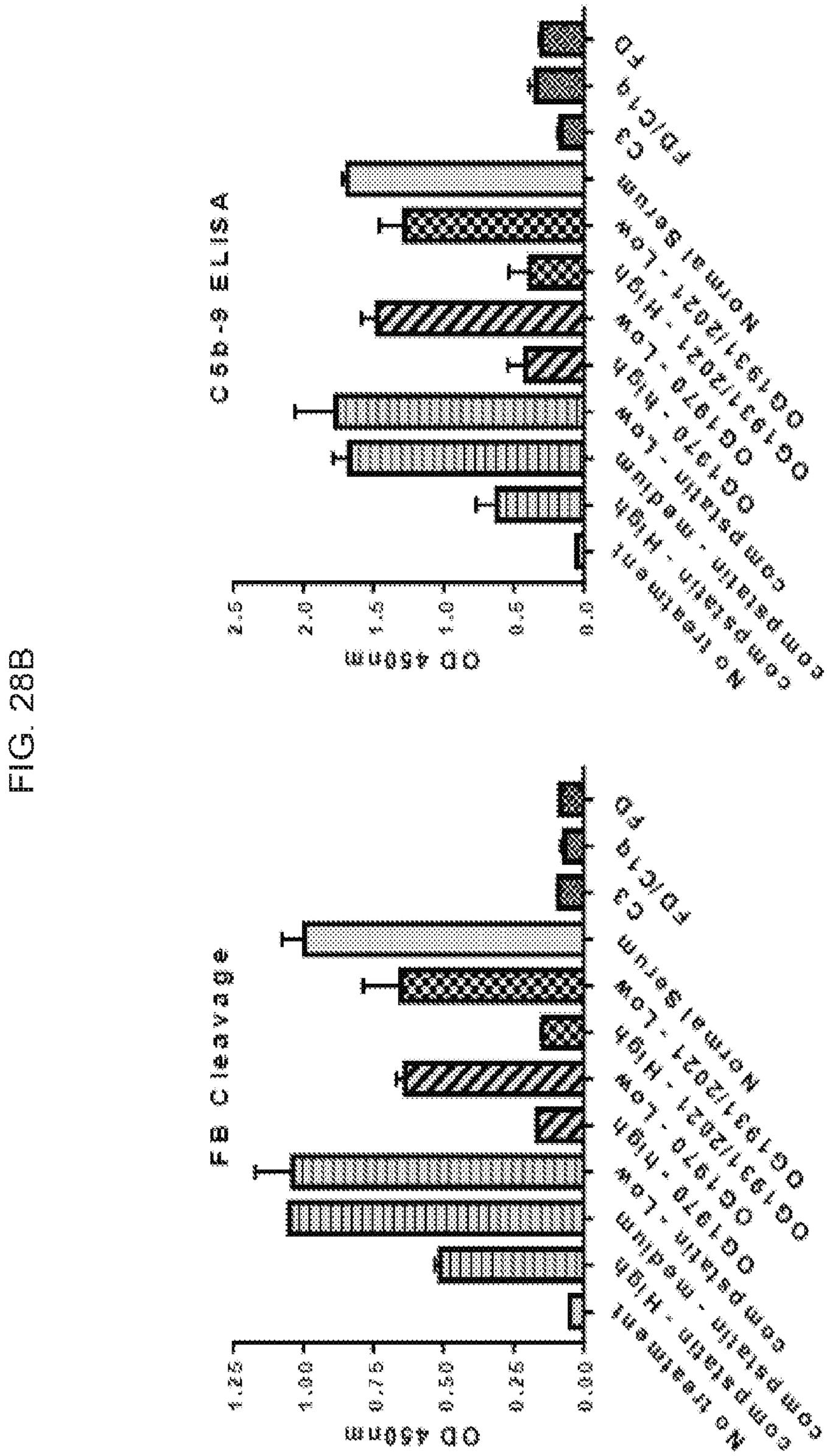
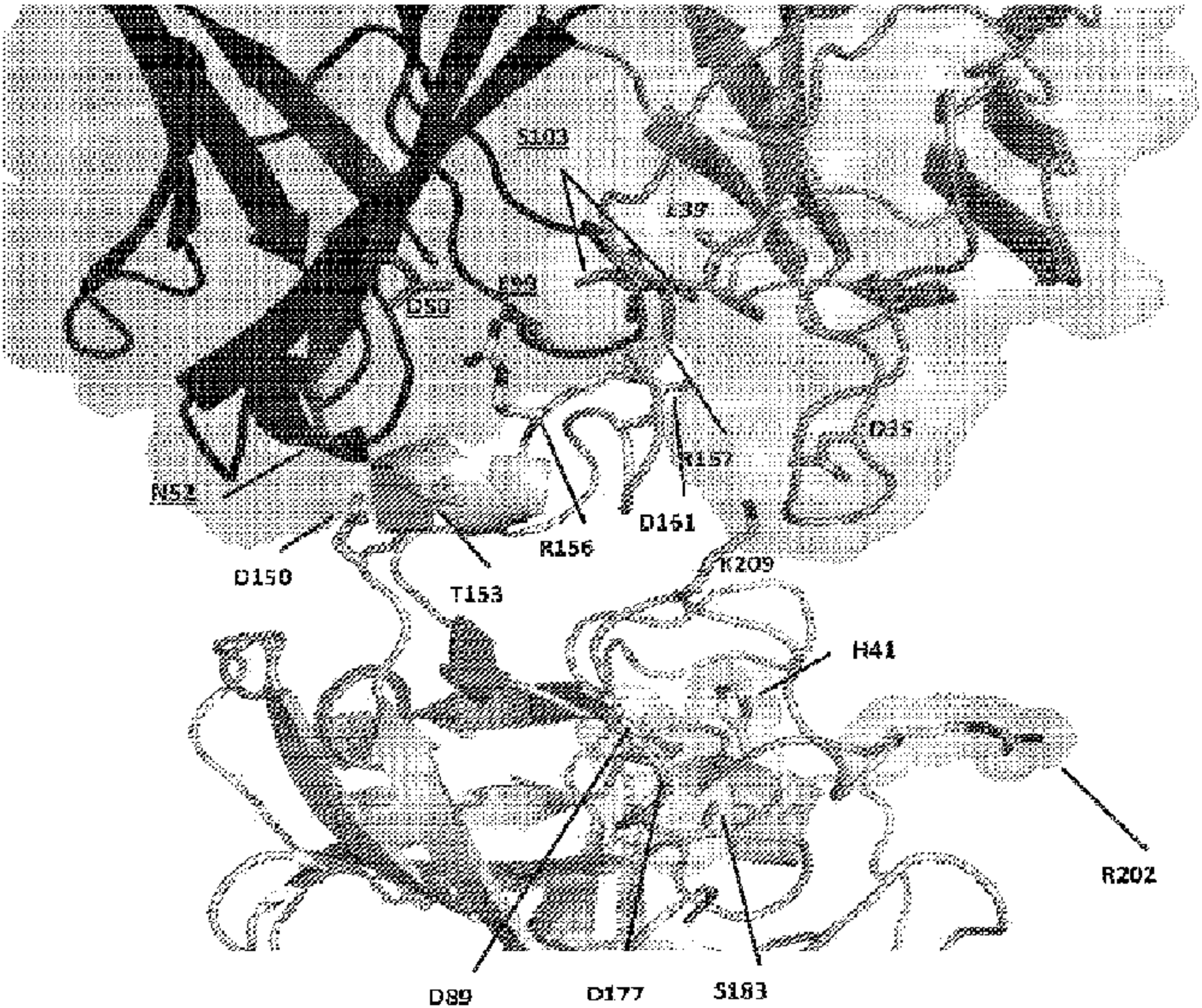

C5b-9 ELISA
OD 450nm
2.5
2.0
1.5
1.0
0.5
0.0
No treatment
Compstatin - high
Compstatin - medium
CCG1970 - low
CCG1970 - high
CCG193423 - low
CCG193423 - high
Normal human serum
FD/C3
FB Cleavage
OD 450nm
1.25
1.00
0.75
0.50
0.25
0.00
C3
FD/C3
Complement activation on ARPE19 cells (ELISAs)

FIG. 28B

FIG. 25


Fab
Heavy Chain
Light Chain
S103
L39
D50
Y33
D35
R157
N52
D161
R156
K209
D150
T153
H41
R202
D89
D177
S183
Factor D