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- (71) **Applicant (for all designated States except US):** **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford Middlesex UB6 0NN (GB).
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- (74) **Agents:** **KUCERNAK, Lynn** et al.; GlaxoSmithKline, Global Patents CN925.1, 980 Great West Road, Brentford Middlesex TW8 9GS (GB).
- (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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,

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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))
- of inventorship (Rule 4.17(iv))

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))

(88) **Date of publication of the international search report:**

13 December 2012

(54) **Title:** CCK COMPOSITIONS

(57) **Abstract:** The present invention relates to drug fusions and conjugates that have improved serum half lives. These fusions and conjugates comprise immunoglobulin (antibody) single variable domains and insulintropic and/or incretin and/or gut peptide molecules. The invention further relates to uses, formulations, compositions and devices comprising such drug fusions and conjugates. The invention also relates to compositions which comprise more than one insulintropic and/or incretin and/or gut peptide molecules present as part of a fusion or conjugate and to uses and formulations thereof.



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/056330

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K47/48 C12N15/62 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A61K C12N		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/059106 A2 (DOMANTIS LTD [GB]; HOLMES STEVE [GB]; HOLT LUCY J [GB]; JESPER LAUREN) 8 June 2006 (2006-06-08) cited in the application pages 44, 74; figure 19c; example 18 -----	1-17, 19-46
X	WO 2009/121804 A1 (GLAXO GROUP LTD [GB]; HERRING CHRISTOPHER [GB]; HOLT LUCY J [GB]; JESP) 8 October 2009 (2009-10-08) pages 3-5; claims 1-7, 9 -----	1-3, 7-15, 20-46
X,P	WO 2011/039096 A1 (GLAXO GROUP LTD [GB]; HAMILTON BRUCE [GB]; HERRING CHRISTOPHER [GB]; P) 7 April 2011 (2011-04-07) the whole document -----	1-46
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 11 October 2012		Date of mailing of the international search report 26/10/2012
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Mabit, Hélène

INTERNATIONAL SEARCH REPORT

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

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

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

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

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

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-3(completely); 7-15, 20-46(partially)

a composition comprising a single fusion or conjugate wherein said fusion or conjugate comprises or consists of (a) at least two molecules which are selected from insulinotropic and/or incretin and/or gut peptide molecules, are which are present as a fusion or conjugate with (b) a protein or peptide which extends the half life of the insulinotropic and/or incretin and/or gut peptide molecules.

2. claims: 4-6, 16-19(completely); 7-15, 20-46(partially)

A composition, which comprises at least two individual fusions or conjugates and wherein each individual fusion or conjugate comprises or consists of (a) one or more insulinotropic and/or incretin and/or gut peptide molecules; present as a fusion or as a conjugate with (b) a protein or peptide which extends the half life of the insulinotropic and/or incretin and/or gut peptide molecules.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/056330

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