

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number
WO 2004/019974 A3

(51) International Patent Classification⁷: **C07K 14/54**,
A61K 39/00, A61P 11/00, A61K 39/385, A61P 37/08

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(21) International Application Number:
PCT/GB2003/003703

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 28 August 2003 (28.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0220212.5 30 August 2002 (30.08.2002) GB
0304672.9 28 February 2003 (28.02.2003) GB

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

- *with international search report*
- *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments*

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(88) Date of publication of the international search report:
22 July 2004

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*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: IMMUNOGENIC COMPOSITION COMPRISING AN IL-13 ELEMENT AND T CELL EPITOPES, AND ITS THER-
APEUTIC USE

(57) Abstract: The present invention relates to isolated immunogens and their use in the treatment of diseases that are treatable with neutralisation of IL-13, such as COPD, asthma and atopic disorders such as hayfever, contact allergies and atopic dermatitis. In particular the invention relates to the neutralisation of the biological effects of IL-13 by raising an immune response against the IL-13 by vaccination of a mammal with immunogens comprising the native or mutated amino acid sequence of IL-13, and foreign T-helper epitopes either inserted in, or attached to the IL-13 sequence or present in carrier polypeptides. Also provided by the present invention are DNA vaccines that comprise a polynucleotide sequence that encodes the immunogens of the present invention. The invention further relates to pharmaceutical compositions comprising such immunogens and their use in medicine and to methods for their production.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 03/03703

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/54 A61K39/00 A61P11/00 A61K39/385 A61P37/08

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)

IPC 7 A61K C07K

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 practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/34645 A (THE GOVERNMENT OF THE UNITED STATES OF AMERICA) 17 May 2001 (2001-05-17) the whole document	1-38
Y	WO 01/62287 A (ADVANCED BIOTHERAPY) 30 August 2001 (2001-08-30) cited in the application the whole document	1-7
Y	WO 99/51643 A (THE PENN STATE RESEARCH FOUNDATION) 14 October 1999 (1999-10-14) the whole document	1-38
Y	WO 00/65058 A (M & E BIOTECH) 2 November 2000 (2000-11-02) cited in the application the whole document	1-38
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

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"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

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Date of the actual completion of the international search

14 May 2004

Date of mailing of the international search report

28/05/2004

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INTERNATIONAL SEARCH REPORT

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PCT/GB 03/03703

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 02/070711 A (GLAXO GROUP LIMITED) 12 September 2002 (2002-09-12) cited in the application the whole document -----	1-38

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/03703

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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:

Although claim 36-38 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

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 fee, this Authority did not invite payment of any additional fee.
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.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 03/03703

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