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(74) Agents: CORLESS, Peter, F. et al.; Edwards Angell Palmer & Dodge LLP, P.O. Box 55874, Boston, MA 02205 (US).

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(71) Applicant (for all designated States except US): GOVERNMENT OF THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPT. OF HEALTH AND HUMAN SERVICES [US/US]; 6011 Executive Boulevard, Suite 325, Rockville, MD 20852 (US).

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(72) Inventor; and

(75) Inventor/Applicant (for US only): DIMITROV, Dimiter, S. [US/US]; 1019 Storrington Drive, Frederick, MD 21702 (US).

[Continued on next page]

(54) Title: ANTI-HIV DOMAIN ANTIBODIES AND METHOD OF MAKING AND USING SAME

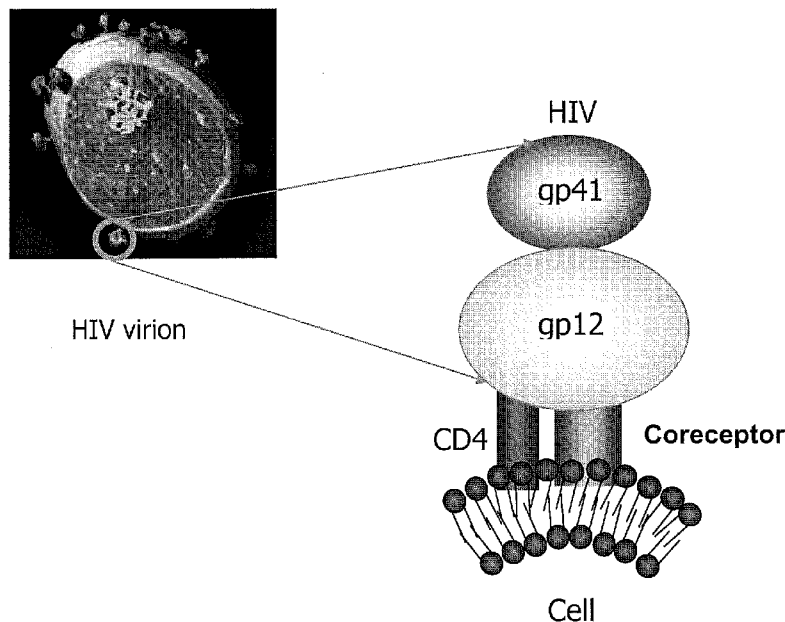


Figure 1

(57) Abstract: The invention provides single domain antibodies and derivatives thereof that bind antigens of interest, which are stable, soluble, and do not tend to aggregate. The antigen of interest may comprise a CD4 inducible epitope of HIV gp120. The invention also provides methods for constructing a dAb library and methods for screening dAb libraries to identify the dAb of the invention. The invention also provide methods of treating or preventing conditions by antigen neutralization by administering the dAbs of the invention.



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- *with international search report (Art. 21(3))*
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/030351

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/00 C07K16/10

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

B. FIELDS SEARCHED

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

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, EMBASE, BIOSIS, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/085815 A (DOMANTIS LTD [GB]; TOMLINSON IAN [GB]; STOOP ADRIAN ALLART [GB]; SEPP) 2 August 2007 (2007-08-02) pages 71-74 pages 62-64 pages 39-40 pages 214-220 sequences 2153,2316,2292	1,2,7,8, 10-12, 14,15, 18-20, 22,23, 27,28, 32-35
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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 document but published on or after the international filing date
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- *P* document published prior to the international filing date but later than the priority date claimed

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- *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

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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

Bumb, Peter

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/030351

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages.	Relevant to claim No.
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Y	LABRIJN ARAN F ET AL: "Access of antibody molecules to the conserved coreceptor binding site on glycoprotein gp120 is sterically restricted on primary human immunodeficiency virus type 1" JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 77, no. 19, 1 October 2003 (2003-10-01), pages 10557-10565, XP002387039 ISSN: 0022-538X page 10559 - page 10562 figure 6 tables 1,2	1-31,45, 46
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/030351

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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Y	US 2007/269422 A1 (BEIRNAERT ELS [BE] ET AL) 22 November 2007 (2007-11-22) example 3	17,25
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/030351

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.:

See additional sheet(s)

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: 1-35, 45-46

domain antibody or fragment thereof comprising structural features which are at least 60% identical to the FR and/or CDR1, 2 or 3 of the anti-gp120 CD4i epitope dAbs m0 and/or m36; domain antibody library based on the FR of m0; medical use of such a domain antibody.

2. claims: 36-44

A method for producing a dAb library comprising the steps of introducing a CDR1-, CDR2- and CDR3-repertoire into an unspecified VH framework nucleotide sequence

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/030351

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