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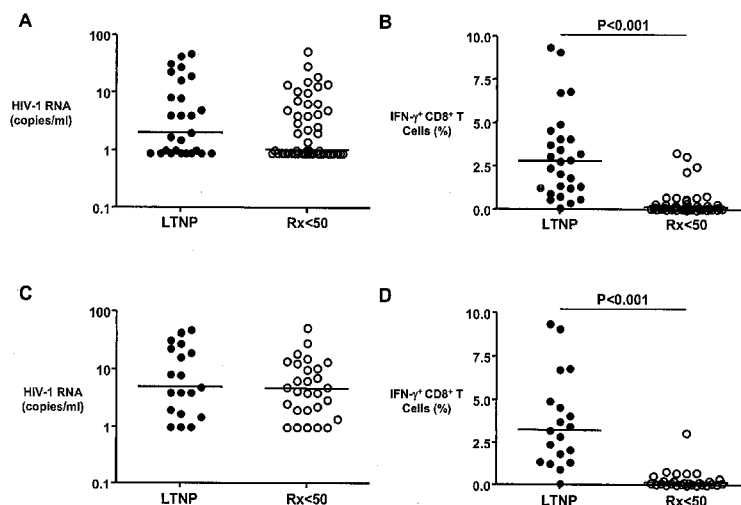
Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: INDUCTION OF PROLIFERATION, EFFECTOR MOLECULE EXPRESSION, AND CYTOLYTIC CAPACITY OF HIV-SPECIFIC CD8+ T CELLS

Figure 1.



(57) Abstract: Provided is a method of activating an immune cell of a subject with Human Immunodeficiency Virus (HIV), comprising contacting the immune cell with a phorbol ester and a calcium ionophore. Also provided is a composition comprising immune cells of a subject diagnosed with HIV, wherein the immune cells are activated by contact with a phorbol ester and a calcium ionophore. Methods of using the disclosed compositions are also disclosed.





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see Notice of 4 February 2010

A. CLASSIFICATION OF SUBJECT MATTER*A61K 31/235(2006.01)i, A61P 37/00(2006.01)i, A61P 31/18(2006.01)i, A61K 33/06(2006.01)i, A61K 31/555(2006.01)i*

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)

IPC8 as above

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)

PubMed, Google Scholar (keywords: HIV-specific CD8+ T-cell, AIDS, phorbol ester, ionomycin)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHIRMULA, NARENDRA et al., 'Human immunodeficiency virus Tat induces functional unresponsiveness in T cells', Journal of Virology, 69(1), pp. 492-498 (1995) See p. 492 (line 1-14, left column), and Table 1 (CD8+ T cells, pretreatment with Tat (0.4 µg/ml), PMA with ionomycin)	1-6, 9, 15, 21, 29, 34
A	MARYLYN M. ADDO et al., 'Fully Differentiated HIV-1 Specific CD8+ T Effector Cells Are More Frequently Detectable in Controlled than in Progressive HIV-1 Infection', PLoS ONE, 3(e321), pp. 1-7 (March 2007) See the whole document	1-6, 9, 15, 21, 29, 34
A	TOKS AKERELE et al., 'Normalized CD8+ but CD4+ lymphocyte IL-2 expression is associated with early treatment with highly active antiretroviral therapy', Clinical Immunology, 121, pp. 191-197 (2006) See the whole document	1-6, 9, 15, 21, 29, 34
A	STEFAN KOSTENSE et al., 'Persistent number of tetramer+ CD8+ T cells, but loss of interferon-γ + HIV-specific T-cells during progression to AIDS', Blood, 99(7), pp. 2505-2511 (April 2002) See the whole document	1-6, 9, 15, 21, 29, 34

 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 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

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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.: 7-8, 10-14, 16-20, 22-28, 30-33, 35-42
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 7-8, 10-14, 16-20, 22-28, 30-33, 35-42 substantially pertain to methods for treatment of the human body by therapy, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
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:

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 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.