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Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report (Art. 21(3))

— with sequence listing part of description (Rule 5.2(a))

[Continued on next page]

(54) Title: HLA-G COMPOSITIONS AND METHODS OF USE THEREOF

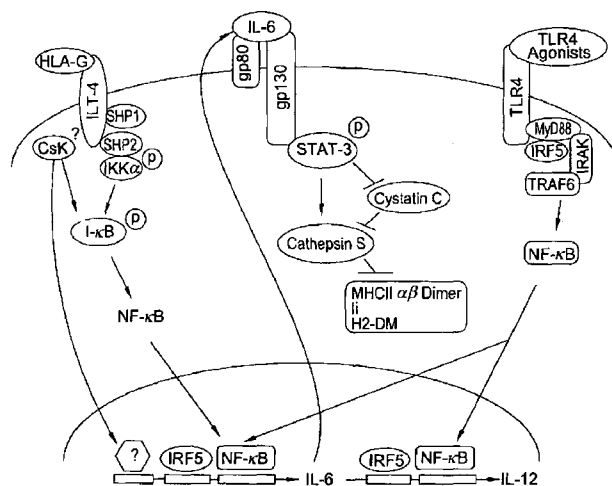


FIG. 8

(57) Abstract: It has been discovered that HLA-G dimers are potent ligands of ILT2 and ILT4 on immune cells and enhance signal transduction through ILT2 and ILT4. Enhanced signal transduction through ILT-2, ILT-4 or both down-regulates the biological activity of T cells and dendritic cells. HLA-G compositions including HLA-G dimers are provided that are useful for modulating activity of immune cells. Preferred compositions include microparticles having HLA-G dimers on the surface of the microparticles. The microparticles optionally include a targeting moiety to target the microparticles to specific immune cells. In a preferred embodiment the microparticles are targeted to T cells or dendritic cells expressing ILT2 or both ILT2 and ILT4, respectively. The HLA-G dimer can include any HLA-G protein that is capable of forming a dimer. Preferred HLA-G proteins include HLA-G1 and HLA-G5. In certain embodiments the microparticles include dimers of HLA-G1 and HLA-G5.



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26 November 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 09/33084

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B32B 33/00 (2009.01)

USPC - 428/403

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)

USPC - 428/403

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC - 428/403

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWest: PGPB,USPT,USOC,EPAB,JPAB; Google; PubMed; microparticle, HLA-G, dimer, target, cell, ILT2, ILT4, biodegrade, anitbody, antigen, ligand, dendritic, CD11c

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2008/0003236 A1 to King et al. 03 January 2008 (03.01.2008), para [0018], [0060]-[0064], [0085] and [0087]	1-4
Y	Human inhibitory receptors Ig-like transcript 2 (ILT2) and ILT4 compete with CD8 for MHC class I binding and bind preferentially to HLA-G.? by Shiroishi et al. Proc Natl Acad Sci U S A. 2003 Jul 22;100(15):8856-61. Epub 09 July 2003 (09.07.2003), Ab.	1-4

☐ Further documents are listed in the continuation of Box C.

* 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

16 March 2009 (16.03.2009)

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05 JUN 2009

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 09/33084

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.: 5-20
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 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.