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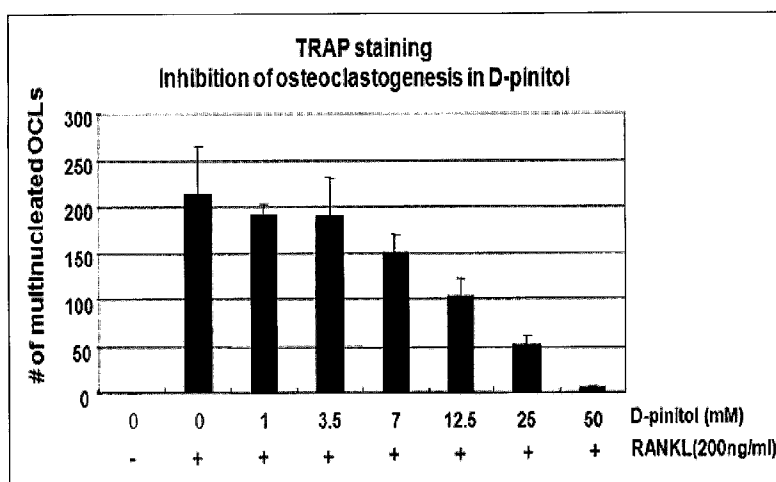
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[Continued on next page]

(54) Title: COMPOSITION FOR PREVENTION OR TREATMENT OF BONE METABOLISM DISORDER COMPRISING  
D-PINITOL AS AN ACTIVE INGREDIENT

**Fig. 6**



(57) Abstract: The present invention provides a composition for inhibiting osteoclastogenesis and a pharmaceutical composition for preventing or treating a bone metabolism disorder, which comprise D-pinitol as an active ingredient. The present compositions have an inhibitory activity on the differentiation of osteoclast and are useful in the prevention or treatment of a bone metabolism disorder resulting from overactivity or hyper-proliferation of osteoclasts.

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## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/KR2008/005192****A. CLASSIFICATION OF SUBJECT MATTER***A61K 31/075(2006.01)i, A61K 9/24(2006.01)i, A61K 47/00(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)

IPC : 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)

EKIPASS(KIPO internal), PUBMED, STN(CA Plus)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                          | Relevant to claim No. |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A         | WO 2004/084875 A1 (AMICOGEN INC.) 7 October 2004 (07.10.2004)<br>See the whole document.                                    | 1-5, 8-9              |
| A         | KR 10-2005-0111667 A (MD BIOALPHA) 28 November 2005 (28.11.2005)<br>See the whole document.                                 | 1-5, 8-9              |
| A         | EP 1241155 A1 (COMPANIA GENERAL DEL ALGARROBO DE ESPANA, S.A.)<br>18 September 2002 (18.09.2002)<br>See the whole document. | 1-5, 8-9              |
| A         | WO 96/29063 A2 (WASHINGTON UNIVERSITY) 26 September 1996 (26.09.1996)<br>See the whole document.                            | 1-5, 8-9              |

☐ 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

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"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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"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

International application No.

**PCT/KR2008/005192****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.: 6, 7  
because they relate to subject matter not required to be searched by this Authority, namely:  
The subject-matter of claims 6 & 7 pertains to the methods for treatment of the human or animal body by therapy, as well as diagnostic methods, and thus relates to a subject matter which this International Searching Authority is not required to search under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT.
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.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/KR2008/005192**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)                                            | Publication<br>date                                  |
|-------------------------------------------|---------------------|-----------------------------------------------------------------------|------------------------------------------------------|
| WO 2004-084875 A1                         | 07.10.2004          | EP 1605926 A1<br>JP 2006-521291 A                                     | 21.12.2005<br>21.09.2006                             |
| KR 10-2005-0111667 A                      | 28.11.2005          | None                                                                  |                                                      |
| EP 1241155 A1                             | 18.09.2002          | EP 1241155 A1<br>EP 1241155 B1<br>US 2003-0040609 A1<br>US 6699511 B2 | 18.09.2002<br>05.01.2005<br>27.02.2003<br>02.03.2004 |
| WO 96-29063 A2                            | 26.09.1996          | CA 2214635 A1<br>JP 11-502223 A<br>US 5827896 A<br>WO 96-29063 A3     | 26.09.1996<br>23.02.1999<br>27.10.1998<br>31.10.1996 |