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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR (utility model), KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
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(54) Title: THERAPEUTIC TREATMENTS COMPRISING ADMINISTRATION OF CERTAIN STEROIDS FOR BLOOD CELL DEFICIENCIES

(57) Abstract: The present invention provides methods and compositions to prevent or treat a hematopoietic disorder such as thrombocytopenia or neutropenia by administering to a subject an effective amount of a steroid such as 3,7,16,17-tetrahydroxy-androst-5-ene, 3,16,17-trihydroxyandrostane, 3-hydroxy-16-haloandrostane-17-one or 3,17-dihydroxy-16-haloandrostane.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/26771

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61K31/565 A61K31/566 A61P7/06

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

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)

CHEM ABS Data, EPO-Internal, WPI Data, PAJ, EMBASE, SCISEARCH, BIOSIS, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SINGER J W ET AL: "STEROIDS AND HEMATOPOIESIS PART 1 THE EFFECT OF STEROIDS ON IN-VITRO ERYTHROID COLONY GROWTH STRUCTURE ACTIVITY RELATIONSHIPS" JOURNAL OF CELLULAR PHYSIOLOGY, vol. 88, no. 2, 1976, pages 127-134, XP001015349 ISSN: 0021-9541 figure 1 page 132, column 1, paragraph 2 page 132, column 2, paragraph 4 page 130; examples 3,10; table 1 page 131; examples 2,12,17; table 1 ---	1-6, 8-10, 14-28, 30,31
X	WO 97 13500 A (SUPERGEN INC) 17 April 1997 (1997-04-17)	1-6, 8-10, 12-31
Y	page 6, line 16 - line 24 ---	4,7,11
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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:

- *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
- *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

15 August 2001

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27/08/2001

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/26771

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 17992 A (SUPERGEN INC) 22 May 1997 (1997-05-22)	1-6, 8-10, 12-20, 22-31
Y	page 12, line 17 - line 24 page 18, paragraph 2 ---	4,7,11
X	US 4 602 008 A (KRSEK GEORGE) 22 July 1986 (1986-07-22)	1-6, 8-10, 12-20, 22-31
Y	page 1, paragraph 4 example 9 column 2, paragraph 2 - paragraph 4 ---	4,7,11
Y	US 5 763 433 A (MORFIN ROBERT) 9 June 1998 (1998-06-09) column 1, paragraph 5 - paragraph 6 column 5, line 50 - line 60 claim 7 ---	1-6, 8-10, 12-20, 22-31
Y	LAFAYE, PIERRE ET AL: "The 7.alpha.-hydroxysteroids produced in human tonsils enhance the immune response to tetanus toxoid and Bordetella pertussis antigens" BIOCHIM. BIOPHYS. ACTA (1999), 1472(1-2), 222-231 , XP001014347 page 229, column 1, paragraph 3 page 223, column 1, paragraph 1 page 230, column 1, paragraph 2 - paragraph 3 ---	1-6, 8-10, 12-20, 22-31
Y	DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 1983 FEDOROVSKAYA N A ET AL: "CHARACTERISTICS OF IMMUNO HEMATOLOGIC PARAMETERS IN PATIENTS WITH HYPOPLASTIC ANEMIA DURING REMISSION" Database accession no. PREV198477064932 XP002174053 abstract & GEMATOLOGIYA I TRANSFUZIOLOGIYA, vol. 28, no. 7, 1983, pages 29-32, ISSN: 0234-5730 --- -/--	1-6, 8-10, 12-20, 22-31

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/26771

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>PIERELLI LUCA ET AL: "Erythropoietin addition to granulocyte colony-stimulating factor abrogates life-threatening neutropenia and increases peripheral-blood progenitor-cell mobilization after epirubicin, paclitaxel, and cisplatin combination chemotherapy: Results of a randomized comparison." JOURNAL OF CLINICAL ONCOLOGY, vol. 17, no. 4, April 1999 (1999-04), pages 1288-1295, XP001015368 ISSN: 0732-183X page 1292, column 2, paragraph 3 -page 1293, column 2, paragraph 1 -----</p>	4,7,11
Y	<p>ALONZI TONINO ET AL: "Interleukin-6 and CAAT/enhancer binding protein beta-deficient mice act as tools to dissect the IL-6 signalling pathway and IL-6 regulation." IMMUNOBIOLOGY, vol. 198, no. 1-3, December 1997 (1997-12), pages 144-156, XP001015352 ISSN: 0171-2985 page 153, line 3 - line 12 -----</p>	4,7,11

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1-19,22-31 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed.

Present claim 12 relate to compounds defined by reference to a desirable characteristic or property, namely the activity as neutrophil or monocyte stimulator. The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. Moreover, claims 1-9,12-15,18-22,30-31 relate to a therapeutic application which is actually not well defined.

In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds described in claims 20-21, optionally in association with the compounds mentioned in claims 4,7,11,13 in relation to the therapeutic applications defined in claims 10,16-17,23-24.

Claims searched completely: 20-21.

Claims searched incompletely: 1-18,22-31.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
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