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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT,
TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

[Continued on next page]

(54) Title: AMINO ACID SALTS OF PROSTAGLANDINS

(57) Abstract: The present invention
is directed to novel amino acid
prostaglandin salts and methods of
making and using them.

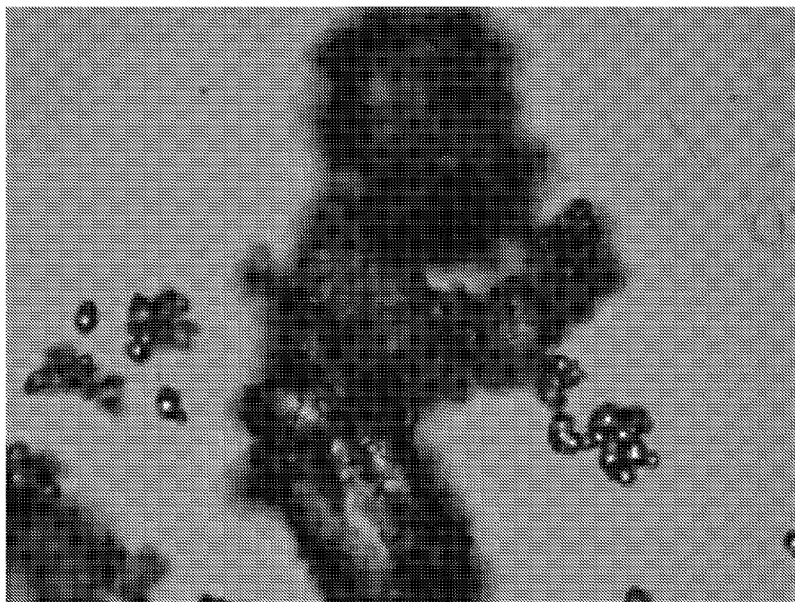


FIG. 1



(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. A61K31/155 A61K31/5575 C07C279/14 C07C291/02 C07C405/00

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)

A61K C07C

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 005 133 A (MOROZOWICH WALTER) 25 January 1977 (1977-01-25) the whole document	1-17, 31-45, 56-61
X	US 3 931 282 A (MUCHOWSKI JOSEPH M ET AL) 6 January 1976 (1976-01-06) columns 3-4; example 32 columns 14-15 ----- -/--	1-17, 31-45, 56-61



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

"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

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16/11/2010

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/062590

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 985 791 A (MUCHOWSKI JOSEPH M ET AL) 12 October 1976 (1976-10-12) cited in the application column 2, lines 12-45 column 4, lines 42-64 column 14, lines 31-64 column 15, lines 28-42; claim 1; example 28 -----	1-17, 31-45, 56-61
X	GB 2 025 413 A (SYNTEX INC) 23 January 1980 (1980-01-23) cited in the application page 1, line 53 - page 2, line 9 page 3, lines 9-29, 41-54; claims 1, 5, 6; examples 4, 7 -----	1-17, 31-33, 35-45, 56-61

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/062590

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.:

11-14, 37, 39-43, 45(completely); 1-10, 15-17, 31-36, 38, 44
56-61(partially)

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.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 11-14, 37, 39-43, 45(completely); 1-10, 15-17, 31-36, 38, 44, 56-61(partially)

amino acid salt of prostaglandin fo formula (II) wherein Z = aryl for medical use

2. claims: 1-10, 15-17, 38, 44, 56-61(all partially)

amino acid salt of a 3-hydroxy-5-oxo-cyclopentyl
PG-derivative for medical use

3. claims: 18-30, 46-55

amino acid salt of prostaglandin as intermediate in chemical
synthesis

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/062590

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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