



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>5</sup> :</b> <b>A61K 47/36, 47/20, 31/375, 31/405</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 91/04058</b> <b>(43) International Publication Date:</b> 4 April 1991 (04.04.91)
<b>(21) International Application Number:</b> PCT/CA90/00306 <b>(22) International Filing Date:</b> 18 September 1990 (18.09.90) <b>(30) Priority data:</b> 612,307 21 September 1989 (21.09.89) CA <b>(71) Applicant (for all designated States except US):</b> NOR-PHARMCO INC. [CA/CA]; 700 Bay Street, 20th Floor, Toronto, Ontario M5G 1Z6 (CA). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> FALK, Rudolf, Edgar [CA/CA]; 57 Rose Park Drive, Toronto, Ontario M4T 1R2 (CA). ASCULAI, Samuel, S. [CA/CA]; 53 McCaul Street, Apt. 252, Toronto, Ontario M6M 2B6 (CA).		<b>(74) Agents:</b> HUGHES, Ivor, M. et al.; 7501 Keele Street, Suite 402, Concord, Ontario L4K 1Y2 (CA). <b>(81) Designated States:</b> AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE*, DE (European patent)*, DK, DK (European patent), ES, ES (European patent), FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US. <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> <b>(88) Date of publication of the international search report:</b> 19 September 1991 (19.09.91)
<b>(54) Title:</b> TREATMENT OF CONDITIONS AND DISEASE <b>(57) Abstract</b> <p>A combination for administration to a mammal which combination employs a therapeutically effective amount of a medicinal and/or therapeutic agent to treat a disease or condition and an amount of hyaluronic acid and/or salts thereof and/or homologues, analogues, derivatives, complexes, esters, fragments and subunits of hyaluronic acid sufficient to facilitate the agent's penetration through the tissue (including scar tissue) at the site to be treated, through the cell membranes into the individual cells to be treated.</p>		

### DESIGNATIONS OF "DE"

Until further notice, any designation of "DE" in any international application whose international filing date is prior to October 3, 1990, shall have effect in the territory of the Federal Republic of Germany with the exception of the territory of the former German Democratic Republic.

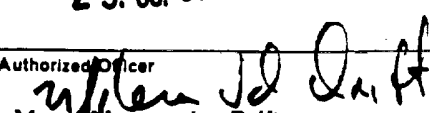
#### FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	ES	Spain	MG	Madagascar
AU	Australia	FI	Finland	ML	Mali
BB	Barbados	FR	France	MN	Mongolia
BE	Belgium	GA	Gabon	MR	Mauritania
BF	Burkina Faso	GB	United Kingdom	MW	Malawi
BG	Bulgaria	GN	Guinea	NL	Netherlands
BJ	Benin	GR	Greece	NO	Norway
BR	Brazil	HU	Hungary	PL	Poland
CA	Canada	IT	Italy	RO	Romania
CF	Central African Republic	JP	Japan	SD	Sudan
CG	Congo	KP	Democratic People's Republic of Korea	SE	Sweden
CH	Switzerland	KR	Republic of Korea	SN	Senegal
CI	Côte d'Ivoire	LI	Liechtenstein	SU	Soviet Union
CM	Cameroon	LK	Sri Lanka	TD	Chad
CS	Czechoslovakia	LU	Luxembourg	TG	Togo
DE	Germany	MC	Monaco	US	United States of America
DK	Denmark				

# INTERNATIONAL SEARCH REPORT

International Application No PCT/CA 90/00306

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) <sup>6</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC <sup>5</sup> : A 61 K 47/36, 47/20, 31/375, 31/405		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>7</sup>		
Classification System	Classification Symbols	
IPC <sup>5</sup>	A 61 K, C 08 L	
Documentation Searched other than Minimum Documentation to the extent that such Documents are included in the Fields Searched <sup>8</sup>		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT <sup>9</sup></b>		
Category <sup>9</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
X	EP, A, 0265116 (FIDIA S.p.A.) 27 April 1988 see page 7, line 53 - page 11, line 17 cited in the application	1-10, 19-24, 26-39, 42- 106, 108-110 114, 176-207 209-216, 218 -223, 225- 241, 243, 247 248, 252-254 258-260, 263 264, 267-270 273, 274
Y		40, 41, 107, 208, 242, 244
	- -	
	./.	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><sup>10</sup> Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"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</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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.</p> <p>"A" document member of the same patent family</p> </div> </div>		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
26th April 1991	23.08.91	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	 Mme. M. van der Drift	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, " with indication, where appropriate, of the relevant passages	Relevant to Claim No.
X	EP, A, 0197718 (FIDIA S.p.A.) 15 October 1986 see page 2, paragraph 2; page 5, paragraph 2 - page 11, paragraph 3; page 19, formulation 1 - page 21, formulation 7	1-10, 19-24, 26-39, 42- 106, 108-110, 114, 176-207, 209-216, 218- 223, 225-241, 243, 247, 248, 252-254, 258- 260, 263, 264, 267-270, 273, 274
Y	cited in the application --	40, 41, 107, 208, 242, 244
X	EP, A, 0216453 (FIDIA S.p.A.) 1 April 1987 see page 9, paragraph 2 - page 10, paragraph 4; page 25, paragraph 2 - page 32, paragraph 4	1-10, 19-24, 26-39, 42- 106, 108-110, 114, 176-207, 209-216, 218- 223, 225-241, 243, 247, 248, 252-254, 258- 260, 263, 264, 267-270, 273, 274
Y	cited in the application --	40, 41, 107, 208, 242, 244
X	EP, A, 0138572 (FIDIA S.p.A.) 24 April 1985 see page 23, paragraph 4 - page 27, paragraph 4; page 38, paragraph 1	1-10, 19-24, 26-39, 42-106, 108-110, 114, 176-207, 209- 216, 218-223, 225-241, 243, 247, 248, 252- 254, 258-260, 263, 264, 267- 270, 273, 274
Y	cited in the application Chemical Abstracts, vol. 76, no. 10, 6 March 1972, (Columbus, Ohio, US), W.E. Sneader et al.: "Possible mechanism for the action of dimethyl sulfoxide on percutaneous absorption", see page 273, abstract 49897f, & J. Pharm., Pharmacol. 1971, 23(Suppl.) 252S -- ./.	40, 41, 107, 208, 242, 244

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, " with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	EP, A, 0224987 (BIOMATRIX INC.) 10 June 1987 see page 14, example 1; page 23, example 10	
A	-- US, A, 4711780 (FAHIM, M.S.) 8 December 1987 see column 1, line 53 - column 2, line 50; example 6 cited in the application	
Y	-- EP, A, 0287210 (MEDICAL RESEARCH INTERNATIONAL LTD) 19 October 1988 see page 2, line 1 - page 3, line 11; - page 3, lines 33-40; page 5, lines 15- 20; tables 1-8; claims 1-10	107,208,209, 242,244
A		103-106,176, 206,207,238- 241,243
P,Y	-- EP, A, 0380367 (STAFFORD-MILLER CONTINENTAL NV-SA) 1 August 1990 see page 2, lines 39-54	107,208,209, 242,244
P,A		103-106,176, 206,207,238- 241,243
Y	-- Database WPI(L), Derwent 87-337226, & JP, A, 62240628 (KAO CORP.) 21 October 1987 see the whole abstract	107,208,209, 242,244
A		103-106,176, 206,207,238- 241,243
Y	-- EP, A, 0245126 (MARUHO CO., LTD) . 11 November 1987 see claims 1-11	107,208,209, 242,244
A		103-106,176, 206,207,238- 241,243
	-----	

## FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

V. ☒ OBSERVATION WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE <sup>1</sup>

This International search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claim numbers \* because they relate to subject matter not required to be searched by this Authority, namely:  
\*Claims searched incompletely: 243, 244

Claims not searched: 11-18, 25, 111-113, 115-175, 217, 224, 245, 246, 249-251, 255-257, 261, 262, 265, 266, 271, 272.

2. ☐ Claim numbers See PCT rule 39.1 (iv) Method of treatment of the human or animal body by therapy 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. ☐ Claim numbers because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. ☒ OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING <sup>2</sup>

This International Searching Authority found multiple inventions in this International application as follows:

- 1.- Claims: 1-10, 19-24, 26-106, 108-110, 114, 176-207, 210-216, 218-223, 225-241, 243, 247, 248, 252-254, 258-260, 263, 264, 267-270, 273, 274: 107, 208, 209, 242, 244 Partially
2. Claims: 107, 208, 209, 242, 244 Partially

1. ☐ As all required additional search fees were timely paid by the applicant, this International search report covers all searchable claims of the International application
2. ☐ As only some of the required additional search fees were timely paid by the applicant, this International search report covers only those claims of the International application for which fees were paid, specifically claims:
3. ☐ 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 claim numbers:
4. ☐ As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

## Remark on Protest

- ☐ The additional search fees were accompanied by applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.**

CA 9000306  
SA 40056

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 10/07/91. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A- 0265116	27-04-88	AU-B- 610087	16-05-91
		AU-A- 7960087	21-04-88
		JP-A- 63105003	10-05-88
		US-A- 4957744	18-09-90
		ZA-A- 8707559	13-04-88
EP-A- 0197718	15-10-86	AU-B- 592077	04-01-90
		BE-A- 904547	03-10-86
		CH-A- 672886	15-01-90
		FR-A- 2579895	10-10-86
		JP-A- 61236732	22-10-86
		LU-A- 86386	02-09-86
		US-A- 4736024	05-04-88
EP-A- 0216453	01-04-87	AU-B- 591501	07-12-89
		AU-A- 5983686	26-02-87
		JP-A- 62064802	23-03-87
		US-A- 4965353	23-10-90
		US-A- 4851521	25-07-89
EP-A- 0138572	24-04-85	AU-A- 3414884	18-04-85
		BE-A- 900810	11-04-85
		CA-A- 1205031	27-05-86
		CH-A- 666897	31-08-88
		FR-A- 2553099	12-04-85
		LU-A- 85582	04-06-85
		JP-A- 61028503	08-02-86
EP-A- 0224987	10-06-87	AU-B- 595524	05-04-90
		AU-A- 6090386	04-06-87
		JP-A- 62129226	11-06-87
US-A- 4711780	08-12-87	EP-A- 0314835	10-05-89
EP-A- 0287210	19-10-88	AU-A- 1308988	15-09-88
EP-A- 0380367	01-08-90	AU-A- 4876190	09-08-90
		CA-A- 2008739	27-07-90
		JP-A- 2270815	05-11-90

EPO FORM P0079

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.**

CA 9000306

SA 40056

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 10/07/91  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A- 0245126	11-11-87	JP-A- 62263122	16-11-87
		US-A- 4873081	10-10-89
-----			