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31 August 2006
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) **Title:** MICROCAPSULES COMPRISING A METHYLSXANTHINE AND A CORTICOSTEROID

(57) **Abstract:** A pharmaceutical formulation comprises a plurality of seamless minicapsules having a diameter of from 0.5 mm to 5 mm, at least some of the minicapsules containing a methyxanthine as one active ingredient, and at least some of the minicapsules containing a corticosteroid as another active ingredient.



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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/IE2005/000106

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61K9/50 A61K31/4422

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

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, WPI Data, PAJ, BIOSIS, MEDLINE, EMBASE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 670 163 A (DR. RENTSCHLER ARZNEIMITTEL GMBH & CO) 6 September 1995 (1995-09-06) claims 1-3 column 2, line 20 - line 24 -----	1-44, 70-73, 78-93
A	US 2003/078194 A1 (CHO YOUNG W ET AL) 24 April 2003 (2003-04-24)  paragraph [0020] - paragraph [0029] example 1 claims 1-12 -----	1-44, 70-73, 78-93
A	EP 0 922 451 A (UNIVERSITA DI PAVIA; UNIVERSITA' DEGLI STUDI DI MILANO; UNIVERSITA' DE) 16 June 1999 (1999-06-16) claims 1-14 -----	1-44, 70-73, 78-93
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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

2 February 2006

Date of mailing of the international search report

**13.1.05.2006**

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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/IE2005/000106

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 0 778 083 A (FREUND INDUSTRIAL CO., LTD) 11 June 1997 (1997-06-11)</p> <p>example 2 column 11, line 38 - line 51 column 12, line 7 - line 13 claim 1</p> <p style="text-align: center;">-----</p>	<p>1-44, 70-73, 78-93</p>

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IE2005/000106

## Box 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 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 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.:

see annex

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-44; partially: 70-73, 78-93

Seamless multiparticulate formulation comprising a methylxanthine and a corticosteroid

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2. claims: 45-69, 74-77 partially: 70-73, 78-93

Formulation comprising seamless minicapsules having a diameter from 0.5 mm to 5 mm, having an encapsulating medium and the minicapsules containing at least two different active ingredients

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IE2005/000106

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0670163	A	06-09-1995	CZ 9402300 A3	12-04-1995
			DE 4332041 A1	23-03-1995
			HU 70054 A2	28-09-1995
			JP 7247215 A	26-09-1995
			NO 943288 A	22-03-1995
			SK 111894 A3	10-05-1995
-----				
US 2003078194	A1	24-04-2003	CN 1582143 A	16-02-2005
			EP 1439821 A1	28-07-2004
			JP 2005508938 T	07-04-2005
			MX PA04003440 A	17-02-2005
			WO 03030865 A1	17-04-2003
-----				
EP 0922451	A	16-06-1999	AT 243508 T	15-07-2003
			DE 69815800 D1	31-07-2003
			DE 69815800 T2	29-04-2004
			DK 922451 T3	13-10-2003
			ES 2202723 T3	01-04-2004
			IT MI972652 A1	28-05-1999
			PT 922451 T	28-11-2003
-----				
EP 0778083	A	11-06-1997	DE 69628394 D1	03-07-2003
			DE 69628394 T2	04-03-2004
			JP 3759986 B2	29-03-2006
			JP 9155183 A	17-06-1997
			US 5882680 A	16-03-1999
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