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- (71) **Applicant (for all designated States except US):** **BAYER PHARMA AKTIENGESELLSCHAFT** [DE/DE]; Muller Strasse 178, 13353 Berlin (DE).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **TEREBESI, Ildiko** [DE/DE]; Reichensteiner Weg 5, 14195 Berlin (DE). **ZURTH, Christian** [DE/DE]; Herrnholzweg 21 a, 13469 Berlin (DE). **ULBRICH, Hannes-Friedrich** [DE/DE]; Fischerhutenstr. 55, 14163 Berlin (DE).
- (74) **Common Representative:** **BAYER PHARMA AKTIENGESELLSCHAFT**; Law and Patents, Patents and Licensing, Muller Strasse 178, 13353 Berlin (DE).
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(54) **Title:** LOW-DOSE TRANSDERMAL PATCHES WITH HIGH DRUG RELEASE

(57) **Abstract:** The present invention relates to the field of pharmaceutical formulation techniques. The invention provides a low dosage pharmaceutical composition for transdermal delivery of hormones, preferably a progestin, such as a Gestodene, and an estrogen, preferably Ethinylestradiol so as to achieve plasma concentration profiles effective in inhibiting ovulation in a woman.

# INTERNATIONAL SEARCH REPORT

International application No PCT/EP2011/065261
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A. CLASSIFICATION OF SUBJECT MATTER  
 INV. A61K9/70 A61K31/565 A61K31/57  
 ADD.

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 A61L

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)  
 EPO-Internal , COMPENDEX, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 541 137 A2 (SCHERING AG [DE] BAYER SCHERING PHARMA AG [DE] ) 15 June 2005 (2005-06-15)	1,6, 8-17 , 19-25
Y	paragraph [0014] - paragraph [0015] paragraph [0031] paragraph [0034] paragraph [0077] paragraph [0084] - paragraph [0089] paragraph [0099] paragraph [0102] paragraph [0104] examples 1, 3, 4  -----  -/--	2-5 , 7 , 18

Further documents are listed in the continuation of Box C.       See patent family annex.

\* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent 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>	<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 when the document is taken alone</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>"&amp;" document member of the same patent family</p>
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Date of the actual completion of the international search  12 June 2012	Date of mailing of the international search report  19/06/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Zal fen , Al i na
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## INTERNATIONAL SEARCH REPORT

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	wo 2006/117139 A2 (SCHERING AG [DE] ; LANGGUTH THOMAS [DE] ; BRACHT STEFAN [DE] ) 9 November 2006 (2006-11-09) page 3, lines 10-18 page 3, line 32 - page 4, line 15 page 4, line 22 - page 5, line 3 exampl es 1-3 -----	2-5 ,7, 18
Y	US 2006/251707 AI (SCHUMACHER JOCHEN [DE] ET AL) 9 November 2006 (2006-11-09) paragraph [0017] - paragraph [0021] exampl es 1, 4-12 -----	2,3,5,7
A	wo 2005/055975 A2 (SCHERING AG [DE] ) 23 June 2005 (2005-06-23) exampl es 3,4 -----	1-25

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2011/065261

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1541137	A2	15-06-2005	AR 046762 AI 21-12 -2005
			AT 457168 T 15-02 -2010
			CN 101843603 A 29- 09-2010
			CR 8465 A 06-06 -2007
			DK 1541137 T3 26-04 -2010
			EP 1541137 A2 15-06 -2005
			EP 2138169 A2 30- 12-2009
			ES 2340925 T3 11-06 -2010
			HK 1074801 AI 20-05 -2010
			HN 2004000526 A 01-02 -2010
			HR 20100254 TI 30-06 -2010
			MY 144053 A 15- 08-2011
			PE 10352005 AI 08-02 -2006
			PT 1541137 E 17-05 -2010
			SI 1541137 TI 30-06 -2010
			SV 2006001970 A 16- 02-2006
			TW 1257299 B 01-07 -2006
-----			
Wo 2006117139	A2	09-11-2006	AR 055927 AI 12-09 -2007
			AU 2006243442 AI 09-11 -2006
			BR PI0611087 A2 03-08 -2010
			CA 2605112 AI 09-11 -2006
			CN 101171001 A 30-04 -2008
			CR 9483 A 21-01 -2008
			DO P2006000100 A 31-01 -2007
			EA 200702344 AI 30-12 -2008
			EP 1719504 AI 08-11 -2006
			EP 1879560 A2 23-01 -2008
			JP 2008540352 A 20-11 -2008
			KR 20080003854 A 08-01 -2008
			PE 14142006 AI 26-01 -2007
			UY 29511 AI 31-08 -2006
			Wo 2006117139 A2 09-11 -2006
			ZA 200710418 A 26-08 -2009
-----			
US 2006251707	AI	09-11-2006	AR 043248 AI 20-07 -2005
			AT 333271 T 15-08 -2006
			AU 2004212675 AI 02-09 -2004
			BR PI0407615 A 14-02 -2006
			CA 2515918 AI 02-09 -2004
			CR 7952 A 06-02 -2006
			DK 1594483 T3 20-11 -2006
			EC SP056030 A 27-01 -2006
			EP 1594483 AI 16-11 -2005
			ES 2270345 T3 01-04 -2007
			HK 1085394 AI 19-03 -2010
			HR 20050828 A2 31-03 -2006
			IL 170295 A 31-05 -2010
			IS 8031 A 15-09 -2005
			JP 4528296 B2 18-08 -2010
			JP 2006518348 A 10-08 -2006
			KR 20050103499 A 31-10 -2005
			ME P14008 A 10-06 -2010
			MX PA05008778 A 25-05 -2006
			NZ 541807 A 31-07 -2009
			PE 10282004 AI 18-02 -2005
			PT 1594483 E 29-12 -2006
			RS 20050639 A 21-09 -2007

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2011/065261

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		SI 1594483 T1	31-12-2006
		us 2006251707 A1	09-11-2006
		UY 28189 A1	30-04-2004
		Wo 2004073696 A1	02-09-2004
-----			
WO 2005055975	A2	23-06-2005	
		AR 047140 A1	11-01-2006
		AU 2004296539 A1	23-06-2005
		BR PI0416979 A	21-02-2007
		CA 2548739 A1	23-06-2005
		CN 101415402 A	22-04-2009
		CR 8461 A	07-12-2006
		EA 200601084 A1	29-12-2006
		EC SP066689 A	31-10-2006
		EP 1541136 A1	15-06-2005
		EP 1703892 A2	27-09-2006
		HN 2004000525 A	17-09-2010
		JP 2007534643 A	29-11-2007
		KR 20060096512 A	11-09-2006
		NZ 547733 A	26-02-2010
		PE 08632005 A1	02-11-2005
		SV 2006001971 A	15-02-2006
		WO 2005055975 A2	23-06-2005
		ZA 200605632 A	25-06-2008
-----			