

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 December 2003 (24.12.2003)

PCT

(10) International Publication Number
WO 2003/105751 A3

(51) International Patent Classification⁷: **C07C 49/223**,
49/248, 251/36, C07D 231/12, A61K 31/121, 31/15,
31/415

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(21) International Application Number:
PCT/KR2002/001134

(22) International Filing Date: 17 June 2002 (17.06.2002)

(25) Filing Language: English

(26) Publication Language: English

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

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
23 September 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: NOVEL CURCUMIN DERIVATIVES

(57) Abstract: The present invention relates to a novel curcumin derivative and a pharmaceutical composition, in particular to a novel curcumin derivative with anti-angiogenic activity and a pharmaceutical composition for treating or preventing a disease associated with unregulated angiogenesis.



WO 2003/105751 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 02/01134

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: C07C 49/223, 49/248, 251/36, C07D 231/12, A61JK 31/121, 31/15, 31/415

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)

IPC⁷: C07C, C07D, 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 practicable, search terms used)

REGISTRY, CAPLUS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	US 2003203933 A1 (Lee, Kuo-Hsiung; Ishida, Junko; Ohtsu, Hironari; Wang, Hui-Kang; Itokawa, Hideji; Chang, Chawnshang; Shih, Charles C. Y.; University of North Carolina at Chapel Hill, USA) 30 October 2003 (30.10.2003) <i>compounds 2-9 (fig. 1), claims 1-7, 17-20.</i>	1-10
X	WO 2001/000201 A1 (Emory University, USA) 4 January 2001 (04.01.2001) <i>claims 4, 9, 10, 12, 13.</i>	2, 5-7
X	EP 0245825 A1 (Warner-Lambert Co., USA) 19 November 1987 (19.11.1987) <i>example 1, claim 1.</i>	1-4

☒ 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

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„&“ document member of the same patent family

Date of the actual completion of the international search

13 May 2004 (13.05.2004)

Date of mailing of the international search report

22 June 2004 (22.06.2004)

Name and mailing address of the ISA/AT

Austrian Patent Office

Dresdner Straße 87, A-1200 Vienna

Facsimile No. 1/53424/535

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 02/01134

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Chowdhury, Hemanta; Walia, Suresh; Saxena, Vinod S. "Isolation, characterization and insect growth inhibitory activity of major turmeric constituents and their derivatives against <i>Schistocerca gregaria</i> (Forsk) and <i>Dysdercus koenigii</i> (Walk)" Pest Management Science (2000), 56(12), 1086-1092 (abstract). Chemical Abstracts [online] Copyright 2004 American Chemical Society [retrieved on 11 May 2004 (11.05.2004)]. Retrieved from STN International, Karlsruhe. Chem. Abstr. No. 2000:872086. <i>abstract, compounds RN 316148-96-6, 316148-97-7, 316148-98-8, Demthoxycurcumine, Bisdemethoxycurcumine.</i>	1-4
X	WO 1997/016403 A1 (Geneprint, Inc., USA) 9 May 1997 (09.05.1997) <i>example 45.</i>	1
X	DE 2501220 A1 (Heumann, Ludwig, und Co. G.m.b.H., Fed. Rep. Ger.) 15 July 1976 (15.07.1976) <i>examples 1,10.</i>	1,3
X	CD Römpp Chemie Lexikon - Version 1.0, Stuttgart/New York: Georg Thieme Verlag 1995 <i>Keyword "Curcumine".</i>	11-13

Remarks:

Claims 1 and 2 are unclear, because of the disclaimer in claim 1. Disclaimed are compounds of formula (I), wherein

"when R1 is H,

R2 is not methoxy, R3 is not H or methoxy group, R4 is not H, and both of R5 and R6 are not oxygen"

This denotes the disclaiming of curcumine (R1, R4 are H; R2, R3 are methoxy, R5, R6 are O) and demethoxycurcumine (R1, R3, R4 are H; R2 is methoxy; R5, R6 are O)

Therefore, compound (II) claimed in dependent claim 2 is one of the compounds disclaimed in claim 1.

Claim 4 is unclear, because reference is made to an unnumbered formula according to claim 2, whereas claim 2 covers several formulas.

Claims 11 and 12 are unclear, because no structural definitions of the curcumin derivatives are given.

The method of preparation curcumin derivatives according to claims 11 and 12 is not sufficiently supported by the description, because in the description the method does not apply to other curcumin derivatives than demthoxycurcumine and bisdemethoxycurcumine.

It is noted, that unity of claims 11-13 (method of preparation curcumin derivatives) and claim 1 (curcumin derivatives) is given only, if the method applies to curcumin derivatives which are subject of claim 1.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 02/01134

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
A				none			
DE	A	2501220	1976-07-15	none			
EP	A	245825		CA	C	1330442	1994-06-28
				IE	L	871041L	1987-11-09
				ES	T	2037681T	1993-07-01
				DE	D	3768553D	1991-04-18
				ZA	A	8702997	1988-12-28
				NO	A	871917	1987-11-10
US	A	20032039 33	2003-10-30	WO	A	03088927	2003-10-30
WO	A	19970164 03		none			