

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 August 2009 (27.08.2009)

(10) International Publication Number
WO 2009/103754 A3

PCT

(51) International Patent Classification:

A23L 1/30 (2006.01) A61P 43/00 (2006.01)
A61K 31/404 (2006.01) A61P 17/00 (2006.01)

(21) International Application Number:

PCT/EP2009/051958

(22) International Filing Date:

19 February 2009 (19.02.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

08003003.4 19 February 2008 (19.02.2008) EP

(71) Applicant (for all designated States except US): **DSM IP Assets B.V.** [NL/NL]; Het Overloon 1, NL-6411 TE Heerlen (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HUG, Hubert** [DE/DE]; Kapfrain 4/2, 79588 Efringen-Kirchen (DE). **MUSSELR, Bernd** [DE/DE]; Alte Bahnhofstrasse 14, 77933 Lahr (DE). **RAEDERSTORFF, Daniel** [FR/FR]; 5 rue Etienne Bilger, F-68720 Flaxlanden (FR). **WANG-SCHMIDT, Ying** [CN/CH]; In der Weid 20, CH-8143 Stallikon (CH).

(74) Agent: **RABANUS, Birgit**; Wurmisweg 576, CH-4303 Kaiseraugst (CH).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, 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.

(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, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

12 November 2009

(54) Title: NOVEL USE OF 3,3'-DIINDOLYLMETHANE

(57) Abstract: The present invention relates to a novel use of 3,3'-diindolylmethane (CAS1968-05-4) and/or its derivatives in the form of a pharmaceutical and/or nutritional composition to retard or delay typical signs of aging and/or age-related pathological changes.



WO 2009/103754 A3

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2009/051958

A. CLASSIFICATION OF SUBJECT MATTER

INV. A23L1/30 A61K31/404 A61P43/00 A61P17/00

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)

A23L 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, FSTA, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/096886 A (LYCORED LTD [IL]; SELA YORAM [IL]) 30 August 2007 (2007-08-30) claims 1,5	1,2, 10-12
X	GONG YIXUAN ET AL: "3,3'-Diindolylmethane is a novel mitochondrial H(+)-ATP synthase inhibitor that can induce p21(Cip1/Waf1) expression by induction of oxidative stress in human breast cancer cells." CANCER RESEARCH 1 MAY 2006, vol. 66, no. 9, 1 May 2006 (2006-05-01), pages 4880-4887, XP002545928 ISSN: 0008-5472 page 4880, left-hand column, paragraph 1 page 4880, right-hand column, paragraph 3 page 4882, paragraph 1 - page 4886, right-hand column, paragraph 2 ----- -/-	1-12

☒ 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

16 September 2009

Date of mailing of the international search report

29/09/2009

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

Tallgren, Antti

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2009/051958

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AGGARWAL BHARAT B ET AL: "Molecular targets and anticancer potential of indole-3-carbinol and its derivatives." CELL CYCLE (GEORGETOWN, TEX.) SEP 2005, vol. 4, no. 9, September 2005 (2005-09), pages 1201-1215, XP008087499 ISSN: 1551-4005 page 1201, paragraph 1 page 1202, paragraph 2; table 1 -----	1-12
X	JP 2003 081848 A (MARUZEN PHARMA) 19 March 2003 (2003-03-19) claims 1,6 -----	1-12
X	WO 2006/105196 A (BIORESPONSE L L C [US]; ZELIGS MICHAEL A [US]) 5 October 2006 (2006-10-05) paragraphs [0110], [0207]; claims 1,44,66 -----	1-12
X	WO 03/034992 A (BIORESPONSE L L C [US]) 1 May 2003 (2003-05-01) page 10, lines 5-26 -----	1-5,8-12
X	WO 01/20991 A (BIORESPONSE L L C [US]) 29 March 2001 (2001-03-29) page 7, lines 26-28; claims 1-3; example 10 -----	1-12
X	WO 99/49851 A (BIORESPONSE L L C [US]; ZELIGS MICHAEL A [US]; JACOBS IRWIN C [US]) 7 October 1999 (1999-10-07) page 27, line 18 - page 33, line 15; claim 8 -----	1-12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2009/051958

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2007096886	A	30-08-2007	US 2009035369 A1	05-02-2009
JP 2003081848	A	19-03-2003	NONE	
WO 2006105196	A	05-10-2006	CA 2603235 A1 EP 1865929 A2	05-10-2006 19-12-2007
WO 03034992	A	01-05-2003	AU 2002342086 B2 CA 2464665 A1 EP 1446121 A2 NZ 532871 A US 2008145418 A1 US 2003096855 A1	04-09-2008 01-05-2003 18-08-2004 30-05-2008 19-06-2008 22-05-2003
WO 0120991	A	29-03-2001	AU 7605700 A US 6534085 B1	24-04-2001 18-03-2003
WO 9949851	A	07-10-1999	AU 763358 B2 AU 3377299 A CA 2326653 A1 CZ 20003583 A3 EP 1067913 A1 NZ 507637 A US 6086915 A	17-07-2003 18-10-1999 07-10-1999 14-11-2001 17-01-2001 28-11-2003 11-07-2000