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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
6 December 2007 (06.12.2007)

PCT

(10) International Publication Number
WO 2007/138031 A3

(51) International Patent Classification:
C07C 323/40 (2006.01) *A61K 8/46* (2006.01)

(21) International Application Number:
PCT/EP2007/055157

(22) International Filing Date: 29 May 2007 (29.05.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/803,645 1 June 2006 (01.06.2006) US

(71) Applicant *(for all designated States except US)*: **SYMRISE GMBH & CO. KG** [DE/DE]; Mühlenfeldstrasse 1, 37603 Holzminden (DE).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **LEY, Jakob** [DE/DE]; Schubertstrasse 5a, 37603 Holzminden (DE).

(74) Agents: **STILKENBÖHMER, Uwe** et al.; c/o Eisenführ, Speiser & Partner, Postfach 10 60 78, 28060 Bremen (DE).

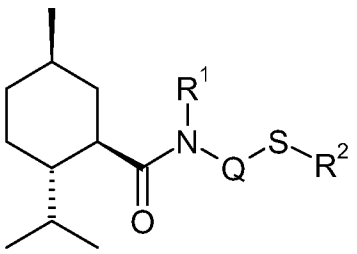
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, 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, 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, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

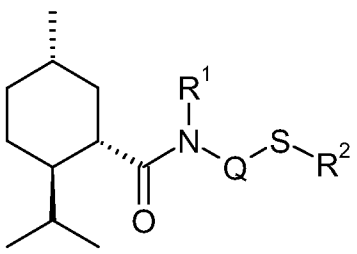
Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
6 March 2008

(54) Title: MENTHANE CARBOXYLIC ACID N-(ALKYLTHIOALKYL)AMIDES AND USE THEREOF AS PHYSIOLOGICALLY ACTIVE COOLING ACTIVE INGREDIENTS



(I)



(ent-I)

(57) Abstract: The present invention relates to a compound or mixture of compounds selected from the group consisting of compounds of the formulae (I) and (ent-I) wherein in the formulae (I) and (ent-I) R^1 means hydrogen or a linear, branched or cyclic, saturated or unsaturated hydrocarbon residue having 1 to 10 carbon atoms,R^2 means a linear, branched or cyclic, saturated or unsaturated hydrocarbon residue having 1 to 10 carbon atoms and Q means a linear or branched, saturated, unsubstituted or substituted, alkylene group, which, including optionally present substituents, comprises a total of 1 to 12 carbon atoms.

WO 2007/138031 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2007/055157

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07C323/40 A61K8/46

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)
C07C 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, CHEM ABS Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DATABASE WPI Week 200427 Derwent Publications Ltd., London, GB; AN 2004-287101 XP002462579 -& JP 2004 059474 A (HASEGAWA CO LTD) 26 February 2004 (2004-02-26) cited in the application claims 1-3; examples 1-12 abstract ----- -/--	1-16

[X] Further documents are listed in the continuation of Box C.

[X] 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	Date of mailing of the international search report
17 December 2007	10/01/2008

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	GRAMMENOUDI, S

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2007/055157

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WATSON H R ET AL: "NEW COMPOUNDS WITH THE MENTHOL COOLING EFFECT" JOURNAL OF THE SOCIETY COSMETIC CHEMISTS, SOCIETY OF COSMETIC CHEMISTS,, US, vol. 29, no. 4, 1978, pages 185-200, XP009045124 ISSN: 0037-9832 cited in the application page 5, table II	1-16
A	US 4 060 091 A (WATSON HUGH R ET AL) 29 November 1977 (1977-11-29) claims 1-10	1-16
A	GB 2 233 873 A (WARNER LAMBERT CO [US]) 23 January 1991 (1991-01-23) claim 1	1-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2007/055157

Box No. 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. [X] Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claim 16 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

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 No. 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:

1. [ ] As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers 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.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

[ ] The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

[ ] No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2007/055157

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2004059474 A	26-02-2004	NONE	
US 4060091 A	29-11-1977	NONE	
GB 2233873 A	23-01-1991	CA 2021222 A1	18-01-1991
		JP 2923336 B2	26-07-1999
		JP 3053849 A	07-03-1991
		US 5009893 A	23-04-1991