

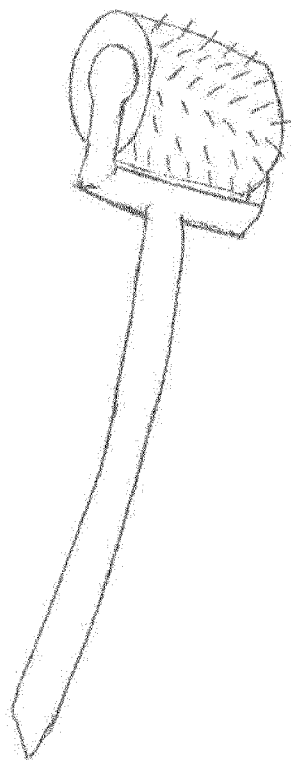


- (51) International Patent Classification:  
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*A61K 31/728* (2006.01)
- (21) International Application Number: PCT/EP2015/061598
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- (74) Agent: **ZACCO DENMARK A/S**; Arne Jacobsens Allé 15, DK-2300 Copenhagen S (DK).
- (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, BN, BR, BW, BY, BZ, CA, CH, CL, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,

[Continued on next page]

(54) Title: COMPOSITIONS FOR PROMOTING THE HEALING OF WOUNDS

Figure 1



(57) Abstract: The present invention provides compositions comprising granulocyte-macrophage colony-stimulating factor (GM-CSF), sucrose octasulfate or sucralfate and hyaluronic acid for the treatment, pre-emptive treatment or prophylaxis of ulcers, wounds and other injuries to the skin or membranes of the body. Other aspects of the invention are methods of treatment or prevention using the compositions described, as well as an application device for use in the methods provided.





MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, 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, RS, SE,

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**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))
- with sequence listing part of description (Rule 5.2(a))

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

4 February 2016

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2015/061598

## Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:
  - a.  forming part of the international application as filed:
    - in the form of an Annex C/ST.25 text file.
    - on paper or in the form of an image file.
  - b.  furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
  - c.  furnished subsequent to the international filing date for the purposes of international search only:
    - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
    - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
2.  In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2015/061598

## 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.  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 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:

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 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 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.:

1-31, 40-53

### 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**

International application No  
PCT/EP2015/061598

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61K38/19 A61K31/728 A61K31/70  
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  
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, WPI Data, BIOSIS, COMPENDEX, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2014/128173 A1 (TRIFOILIUM APS [DK]) 28 August 2014 (2014-08-28)  pages 5,14-15; claim 12 -----	1-6,8,9, 11-31, 40-53
Y	WO 92/14480 A1 (AMGEN INC [US]) 3 September 1992 (1992-09-03) page 20, lines 3-20; claims 1,14 -----	1-31, 40-53
Y	WO 2008/116116 A2 (BREM HAROLD [US]; TOMIC MARJANA [US]) 25 September 2008 (2008-09-25) page 4, lines 2-17; claims 1,17,18; example 2 -----	1-31, 40-53
Y	CA 2 020 200 A1 (BUKH MEDITEC [DK]) 30 December 1991 (1991-12-30) claims 1-2; examples 7, 12 -----	1-31, 40-53
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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  23 July 2015	Date of mailing of the international search report  16/12/2015
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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  Bochelen, Damien
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## INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/061598

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 2013/007960 A1 (URGO LAB [FR]; DEV ET DE RECH IND SOC D [FR]; BOUSCHBACHER MARIELLE [F] 17 January 2013 (2013-01-17) page 4, lines 14-23 page 10, lines 4-10 page 11, line 12 -----	1-31, 40-53

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/EP2015/061598

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014128173 A1	28-08-2014	EP 2958582 A1 WO 2014128173 A1	30-12-2015 28-08-2014
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WO 9214480 A1	03-09-1992	AU 1462392 A CA 2081104 A1 EP 0526630 A1 FI 924778 A IE 920560 A1 JP H05506673 A NO 924073 A PT 100152 A US 6689351 B1 WO 9214480 A1	15-09-1992 23-08-1992 10-02-1993 21-10-1992 26-08-1992 30-09-1993 21-10-1992 31-05-1993 10-02-2004 03-09-1992
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WO 2008116116 A2	25-09-2008	EP 2139447 A2 US 2009191156 A1 WO 2008116116 A2	06-01-2010 30-07-2009 25-09-2008
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CA 2020200 A1	30-12-1991	NONE	
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WO 2013007960 A1	17-01-2013	AU 2012282275 A1 CA 2839760 A1 CN 103732209 A EP 2731584 A1 FR 2977798 A1 JP 2014520837 A US 2014141058 A1 WO 2013007960 A1	30-01-2014 17-01-2013 16-04-2014 21-05-2014 18-01-2013 25-08-2014 22-05-2014 17-01-2013
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**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

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

1. claims: 1-31, 40-53

A composition comprising a) granulocyte-macrophage-colony stimulating factor (GM-CSF) or a fragment or variant thereof, and b) sucrose octasulfate (SOS) or a salt thereof, such as sucralfate, and hyaluronic acid (HA) and method of treatment of of irritation or lesions.

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2. claims: 32-39

A roller tool for administration of the composition according to any one of the preceding claims, said roller tool comprising a substantially cylindrical roller body having a length and an interior, said roller body comprising two opposingly disposed circular end surfaces and an endless surface, said circular end surfaces each defining an aperture in the center thereof, and said endless surface incorporating randomly spaced protrusions.

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