

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
14 August 2003 (14.08.2003)

PCT

(10) International Publication Number  
**WO 03/066001 A3**

- (51) International Patent Classification<sup>7</sup>: A01N 37/36, A61K 31/315, 31/555
- (21) International Application Number: PCT/US03/03896
- (22) International Filing Date: 7 February 2003 (07.02.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/355,549 7 February 2002 (07.02.2002) US
- (71) Applicant (for all designated States except US): **THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK** [US/US]; 116th Street and Broadway, New York, NY 10027 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MODAK, Shanta, M.** [US/US]; 184 Howland Avenue, River Edge, NJ 07661 (US). **GAONKAR, Trupti** [IN/US]; 712 West 176th Street, Apt. 5F, New York, NY 10033 (US). **CARAOS, Lauser** [US/US]; 8919 184th Street, Hollis, NY 11423 (US).
- (74) Agent: **KOLE, Lisa, B.**; Baker Botts L.L.P., 30 Rockefeller Plaza, New York, NY 10112-4498 (US).
- (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, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, 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, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, 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:  
13 November 2003
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 03/066001 A3

(54) Title: ZINC SALT COMPOSITIONS FOR THE PREVENTION OF MUCOSAL IRRITATION FROM SPERMICIDES AND MICROBICIDES

(57) Abstract: The addition of low concentrations of combinations of water-soluble organic salts of zinc to gels, creams, lotions or ointments can increase the ability of these products to reduce or prevent exogenous irritants from causing irritation of the underlying substrate. The addition of low concentrations of combinations of water-soluble organic zinc salts to these gels, creams, lotions or ointments also can reduce the irritation of skin or mucous membranes caused by the addition of potentially-irritating substances such as spermicides, microbicides, fungicides or other therapeutic agents to the gel, cream, lotion or ointment. The advantages of this anti-irritant approach over others, which generally employ high concentrations of single zinc salts, are the reduced potential for zinc toxicity, the reduced potential for toxicity related to zinc itself, and the preservation of the desirable biological properties of potentially-irritating therapeutic substances added to the gel, cream, lotion or ointment.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/03896

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A01N 37/36; A61K 31/315, 31/555  
 US CL : 514/163, 188, 494

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)  
 U.S. : 514/163, 188, 494

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,485,915 A (GERSTEIN et al.) 23 December 1969 (23.12.69), see the entire document.	1-67
A	US 5,591,442 A (DIEHL et al.) 07 January 1997 (07.01.97), see the entire document.	1-67
A	US 6,107,261 A (TAYLOR et al.) 22 August 2000 (22.08.00), see the entire document.	1-67

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

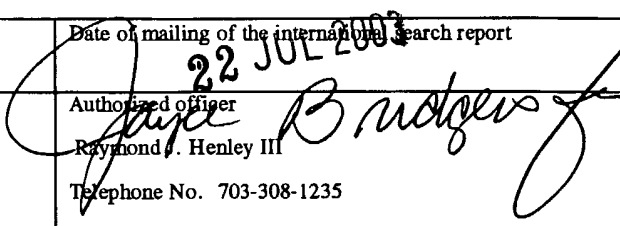
Date of the actual completion of the international search

04 July 2003 (04.07.2003)

Date of mailing of the international search report

22 JUL 2003

Name and mailing address of the ISA/US  
 Mail Stop PCT, Attn: ISA/US  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 Facsimile No. (703)305-3230

Authorized officer  
  
 Raymond J. Henley III  
 Telephone No. 703-308-1235