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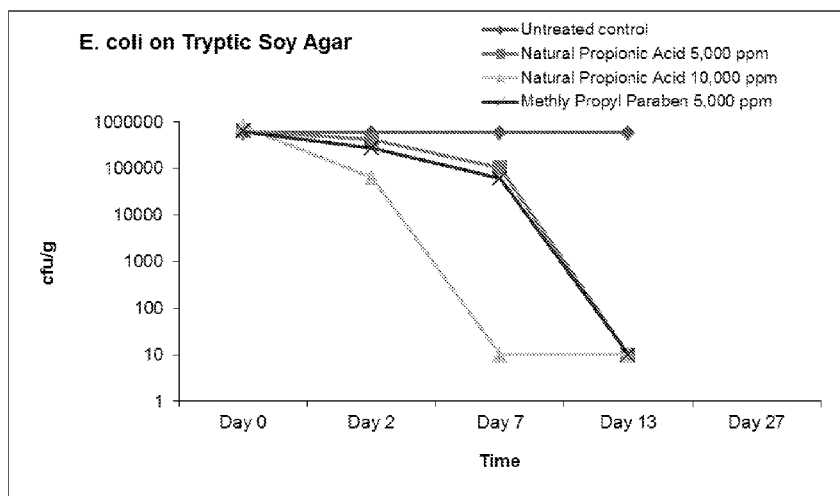
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(54) Title: USE OF PROPIONIC ACID AS AN ANTIMICROBIAL



(57) Abstract: Propionic acid is used to curb the growth of *Candida albicans*, *Aspergillus niger*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Staphylococcus aureus* in personal care products, and kills all within 7 days. Carnosic acid may be substituted for some of the propionic acid to provide a synergistic combination. The propionic salt can be from any source but, in a preferred embodiment, is obtained by extracting soy glycerin via ethanol distillation, then fermenting the soy glycerin with propionii bacteria and drying the ferment. A powder composition is standardized to a desired minimum propionic salt content.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 12/32993

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A21D 4/00 (2012.01)

USPC - 426/335

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)

IPC(8)- A21D 4/00 (2012.01);

USPC- 426/335

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC- 426/43, 532, 626, 25;

Patents and NPL (classification, keyword; search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWest (US Pat, PgPub, EPO, JPO), GoogleScholar (PL, NPL), FreePatentsOnline (US Pat, PgPub, EPO, JPO, WIPO, NPL);

search terms: albicans, niger, coli, aeruginosa, aureus, propionic, carnosic, acid, personal, care, cosmetic, cream, skin

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 570 794 A2 (MCGEE) 24 November 1993 (24.11.1993), pg 2, ln 1-7; pg 3, ln 39 to pg 4, ln 25; pg 5, ln 8-23; pg 6, ln 30-32	1, 5-7 ----- 2-4, 8-10
Y	US 2007/0104809 A1 (COYNE et al.) 10 May 2007 (10.05.2007), para [0055], [0058], [0060], [0090], [0100], [0101]	2-4, 8-10
Y	WO 2010/016467 A1 (KIDO et al.) 11 February 2010 (11.02.2010), English Abstract only	1-10
Y	US 5,336,500 A (RICHTER et al.) 09 August 1994 (09.08.1994), col 3-14	1-10

Further documents are listed in the continuation of Box C.

* 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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“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

26 June 2012 (26.06.2012)

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