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(54) Title: COMPOSITION COMPRISING BACTERIA AND LECITHIN

(57) Abstract: The present invention relates to a composition comprising live food grade bacterium and lecithin wherein the water activity of the composition is at least 0.5 and the amount of fat is between 10 and 80 wt%. It was surprisingly found that lecithin enhances the viability of bacteria in compositions.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. A23L1/30 A23D7/00 A23L1/03 A23C9/123 A23J7/00

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 A23D A23C A23J

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, BIOSIS, WPI Data, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	DONTHIDI A R ET AL: "Effect of lecithin on viability and stability of probiotics" JOURNAL OF PHARMACY AND PHARMACOLOGY, vol. 58, no. Suppl. 1, 2006, page A34, XP008089455 & BRITISH PHARMACEUTICAL CONFERENCE; MANCHESTER, UK; SEPTEMBER 04 -06, 2006 ISSN: 0022-3573 cited in the application the whole document ----- -/--	1-5,8,10
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Further documents are listed in the continuation of Box C.

See patent family annex.

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PCT/EP2008/057831

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 339 750 A (ALTON SPILLER INC [US]) 2 November 1989 (1989-11-02) cited in the application claims 1,6,10,16; examples 1-3 page 2, lines 10-19 page 6, lines 20-41 page 7, lines 28-34 page 8, lines 31-45	1-8,10, 11
X	JP 2003 334065 A (NISSEI BIO KK) 25 November 2003 (2003-11-25) cited in the application claims 1,2,8; example 1	1-12
X	US 4 713 341 A (BILY ROBERT R [US]) 15 December 1987 (1987-12-15) cited in the application column 1, lines 36-48; claim 1; examples 1-8	1-12
X	WO 01/32038 A (HUNZA DI MARIA CARMELA MARAZZI [IT]; PISTOLESI ELVIRA [IT]; CESTARO BE) 10 May 2001 (2001-05-10) cited in the application claims 1,7; example 5 page 4, lines 20-30	1-12
X	US 2007/160589 A1 (MATTSON PETER H [US]) 12 July 2007 (2007-07-12) cited in the application claims 1,17; examples 1-3 page 2, left-hand column, paragraph 13 - page 3, right-hand column, paragraph 25	1-12
X	DE 42 20 509 A1 (WILKE RUEDIGER [DE]; WILKE REINHARD [DE]) 23 December 1993 (1993-12-23) page 2, line 68; claims 1,2,6,11; example 1	1,4-11
X	GB 19344 A A.D. 1913 (SCHOU EINAR VIGGO [DK]) 20 August 1914 (1914-08-20) page 1, lines 5-34; claims 1,2	1-12
X	STEFAN A ET AL: "Water in oil macroemulsions sustain lon term viability of microbial cells in organic solvents" BIOTECHNOLOGY AND BIOENGINEERING, WILEY & SONS, HOBOKEN, NJ, US, vol. 81, 1 January 2003 (2003-01-01), pages 323-328, XP002428601 ISSN: 0006-3592 page 324, left-hand column, paragraph 1 page 325, left-hand column, paragraph 2 - right-hand column, paragraph 1	1,4-8, 10,11
	-/--	

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2008/057831

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	EP 1 932 432 A (FRIESLAND BRANDS BV [NL]) 18 June 2008 (2008-06-18) page 4, column 6, paragraph 27; claims 1,2,5; examples 2,3	1-12
A	WO 84/04675 A (HANSENS CHR BIO SYSTEMS AS [DK]) 6 December 1984 (1984-12-06) claims 1,20,28; example 4	1-13

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2008/057831

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0339750	A	02-11-1989	AU 618097 B2 12-12-1991
			AU 3571989 A 24-11-1989
			DE 68900900 D1 09-04-1992
			DK 258290 A 21-12-1990
			ES 2030259 T3 16-10-1992
			GR 3004076 T3 31-03-1993
			JP 3505158 T 14-11-1991
			SU 1837777 A3 30-08-1993
			WO 8910059 A1 02-11-1989
			US 4950489 A 21-08-1990
<hr/>			
JP 2003334065	A	25-11-2003	NONE
<hr/>			
US 4713341	A	15-12-1987	NONE
<hr/>			
WO 0132038	A	10-05-2001	AT 293895 T 15-05-2005
			AU 1275401 A 14-05-2001
			DE 60019784 D1 02-06-2005
			EP 1225814 A1 31-07-2002
			JP 2003521241 T 15-07-2003
<hr/>			
US 2007160589	A1	12-07-2007	NONE
<hr/>			
DE 4220509	A1	23-12-1993	NONE
<hr/>			
GB 191319344	A	20-08-1914	NONE
<hr/>			
EP 1932432	A	18-06-2008	NONE
<hr/>			
WO 8404675	A	06-12-1984	AU 3018684 A 18-12-1984
			EP 0147428 A1 10-07-1985
			JP 60501160 T 25-07-1985