



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <p>(51) International Patent Classification ⁶ : C12N 1/20, A23C 9/12, A61K 35/74, C12R 1/22</p> | <p>A3</p> | <p>(11) International Publication Number: WO 98/35014 (43) International Publication Date: 13 August 1998 (13.08.98)</p> |
| <p>(21) International Application Number: PCT/IE98/00010 (22) International Filing Date: 11 February 1998 (11.02.98) (30) Priority Data: PCT/IE97/00007 11 February 1997 (11.02.97) WO (34) Countries for which the regional or international application was filed: AU et al. (71) Applicants (for all designated States except US): FORBAIRT trading as BIORESEARCH IRELAND [IE/IE]; Glasnevin, Dublin 9 (IE). UNIVERSITY COLLEGE CORK [IE/IE]; College Road, Cork (IE). (72) Inventors; and (75) Inventors/Applicants (for US only): COLLINS, John, Kevin [IE/IE]; Spur Hill, Doughcloyne, County Cork (IE). O'SULLIVAN, Gerald, Christopher [IE/IE]; Ballinveltig, Curraheen Road, Bishopstown, Cork (IE). THORNTON, Gerardine, Mary [IE/IE]; Ballymah, Waterfall, County Cork (IE). O'SULLIVAN, Marian, Mary, Geraldine [IE/IE]; 126 Castle Farm, Shankill, County Dublin (IE). (74) Agent: ANNE RYAN & CO.; 60 Northumberland Road, Ballsbridge, Dublin 4 (IE).</p> | <p>(81) Designated States: AU, CA, JP, MX, NO, NZ, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>With an indication in relation to a deposited microorganism furnished under Rule 13^{bis} separately from the description.</i> <i>Date of receipt by the International Bureau:</i> 9 March 1998 (09.03.98) (88) Date of publication of the international search report: 19 November 1998 (19.11.98)</p> | |
| <p>(54) Title: PROBIOTIC STRAINS FROM <i>LACTOBACILLUS SALIVARIUS</i> AND ANTIMICROBIAL AGENTS OBTAINED THEREFROM</p> | | |
| <p>(57) Abstract</p> <p>A strain of <i>Lactobacillus salivarius</i> isolated from resected and washed human gastrointestinal tract inhibits a broad range of Gram positive and Gram negative microorganisms and secretes a product having antimicrobial activity into a cell-free supernatant. The activity is produced only by growing cells and is destroyed by proteinase K and pronase E, the inhibitory properties of the strain and its secretory products being maintained in the presence of physiological concentrations of human bile and human gastric juice. The strain exhibits a broad spectrum of activity against bacteria including <i>Listeria</i>, <i>Staphylococcus</i> including methocillin resistant <i>St. aureus</i> (MRSA), and <i>Bacillus</i>, but does not inhibit many closely related <i>lactobacilli</i>. An antimicrobial agent is obtained from the strain which has bacteriocin-like properties.</p> | | |

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IE 98/00010

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 6 C12N1/20 A23C9/12 A61K35/74 C12R1/22

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 6 C12N A23C 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)

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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| X | ARIHARA, K. ET AL.: "Salivacin 140, a novel bacteriocin from Lactobacillus salivarius subsp. salicinius T140 active against pathogenic bacteria" LETTERS IN APPLIED MICROBIOLOGY, vol. 22, 1996, pages 420-424, XP002072786 cited in the application see page 421, right-hand column, last paragraph - page 423, left-hand column, paragraph 2; tables 1,2 <div style="text-align: center;">---</div> <div style="text-align: center;">-/--</div> | 1,2,5-7, 10-12 |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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| Date of the actual completion of the international search 27 July 1998 | Date of mailing of the international search report 12/08/1998 |
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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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| X | <p>WO 89 05849 A (CHR. HANSEN'S LABORATORIUM A/S) 29 June 1989 see page 5, line 2 - page 7, line 6 see page 7, line 23 - page 8, line 7 see page 9, line 4 - page 12, line 12 see page 13, line 12 - line 21; examples 1,4,5,12</p> | <p>1,5,6, 10,11</p> |
| X | <p>EP 0 384 319 A (VISKASE CORPORATION) 29 August 1990 see page 3, line 22 - line 58 see page 4, line 15 - line 57 see page 8, line 24 - line 27</p> | <p>6,10</p> |
| A | <p>KLAENHAMMER, T.R.: "Genetics of bacteriocins produced by lactic acid bacteria" FEMS MICROBIOLOGY REVIEWS, vol. 12, no. 1-3, 1993, pages 39-86, XP002072788 cited in the application see page 63, right-hand column - page 74, left-hand column 'Lactobacillus'</p> | <p>1-13</p> |
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Information on patent family members

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