

Table 1: *Bacillus* probiotics for human use^a

Product	Manufacturer	Comments/References
Bactisubtil [®]	Produced by Marion Merrell (Levallois- Perret, France) but also by Hoechst and then Aventis Pharma following merger acquisitions. Also cited as being produced by Casella-Med, Cologne, Germany.	Capsule carrying 1 x 10 ⁹ spores of <i>Bacillus cereus</i> strain IP 5832b (ATCC 14893) [n.b., originally deposited as <i>B. subtilis</i>
Bio-Kult [®]	Protexin Health Care http://www.bio-kult.com	<i>B. subtilis</i> is one component of 14 strains carried in this UK probiotic supplement.
Biosporin [®]	(1) Biofarm, Dnepropetrovsk, Ukraine	Biosporin [®] is a mixture of two strains of living antagonistic bacteria <i>B. subtilis</i> 2335 (sometimes referred to as <i>B. subtilis</i> 3) and <i>B. licheniformis</i> 2336 (ratio is 3:1). Originally isolated from animal fodder
	(2) Garars, Russia.	There are a number of versions of this products produced in different countries including a recombinant form, Subalin.
Biovicerin [®]	Geyer Medicamentos S. A. Porto Alegre, RS, Brazil http://www.geyermed.com	<i>B. cereus</i> strain GM Suspension of 10 ⁶ spores ml ⁻¹ .
Bispan [®]	Binex Co. Ltd, Busan, S. Korea www.bi-nex.com	Tablet carrying spores (1.7 x 10 ⁷) of <i>B. polyfermenticus</i> SCD ^c .
Domuvar	BioProgress SpA, Anagni, Italy http://www.giofil.it	Vial carrying 1 x 10 ⁹ spores of <i>Bacillus clausii</i> in suspension, labelled as carrying <i>B. subtilis</i> . No longer marketed.
Enterogermina [®]	Sanofi Winthrop SpA, Milan, Italy www.automedicazione.it	Vial (5 ml) carrying 1 x 10 ⁶ spores of <i>B. clausii</i> in suspension. At least four different strains of <i>B. clausii</i> present and product originally labelled as carrying <i>B. subtilis</i> .
Flora- Balance	Flora-Balance, Montana, USA	Capsules labelled as carrying <i>Bacillus laterosporus</i> BOD ^c but containing <i>Brevobacillus laterosporus</i> BOD.

	www.flora-balance.com	
Sustenex®	Ganeden Biotech Inc., Ohio, USA www.sustenex.com	<i>B. coagulans</i> GanedenBC ³⁰ . This is a patented strain that has GRAS approval in the USA.
Lactipan plus	Istituto Biochimico Italiano SpA, Milan, Italy	Capsule carrying spores of <i>Bacillus subtilis</i> labelled as carrying 2×10^9 spores of <i>Lactobacillus sporogenes</i> ^c .
Lactospore	Sabinsa Corp., Piscataway, NJ, USA www.sabinsa.com	Labelled as <i>Lactobacillus sporogenes</i> ^c but contains <i>B. coagulans</i> $6-15 \times 10^9 \text{ g}^{-1}$.
Medilac-Vita	Hanmi Pharmaceutical Co. Ltd., Beijing, China http://www.hanmi.co.kr	<i>B. subtilis</i> strain RO179 (at 10^8 g^{-1}) in combination with <i>Enterococcus faecium</i> .
Nature's First Food	Nature's First Law, San Diego, CA, USA http://www.rawfood.com	42 species listed as probiotics including: <i>B. subtilis</i> , <i>B. polymyxa</i> ^c , <i>B. pumilus</i> and <i>B. laterosporus</i> ^c .
Neolactoflorene	Newpharma S.r.l., Milan, Italy	Mixture of lactic acid bacteria inc. <i>L. acidophilus</i> , <i>B. bifidum</i> and <i>L. sporogenes</i> ^c <i>L. sporogenes</i> at $3.3 \times 10^5 \text{ CFU g}^{-1}$ whose valid name is <i>B. coagulans</i> and is mislabelled as a strain of <i>B. subtilis</i> .
Primal Defense™	Garden of Life® Palm Beach, Florida, USA. www.gardenoflife.com/	<i>B. subtilis</i>

Table 2: *Bacillus* probiotics for veterinary use^a

Brand	Animal	Manufacturer	Comments
AlCare™	Swine	Alpharma Inc., Melbourne, Australia www.alpharma.com.au/alcare.htm	<i>B. licheniformis</i> (NCTC 13123) at 10^9 - 10^{10} spores kg^{-1} . This is a non- bacitracin producing strain. Not licensed in the EU.
BioGrow®	Poultry, calves and swine	Provita Eurotech Ltd., Omagh, Northern Ireland, UK.	Listed as containing spores of <i>B. licheniformis</i> ($1.6 \times 10^9 \text{ CFU g}^{-1}$) and <i>B. subtilis</i> ($1.6 \times 10^9 \text{ CFU g}^{-1}$).

		http://www.provita.co.uk	
BioPlus [®] 2B	Piglets ^a , Chickens, turkeys for fattening ^c	Christian Hansen Hoersholm, Denmark http://www.chbiosystems.com	Mixture (1/1) of <i>B. licheniformis</i> (DSM 5749) and <i>B. subtilis</i> (DSM 5750) at 1.6 x 10 ⁹ CFU g ⁻¹ of each bacterium. EU approved ^a .
Esporafeed Plus [®]	Swine	Norel, S.A. Madrid, Spain	1 x 10 ⁹ <i>B. cereus</i> (CECT 953). Not licensed in the EU.
Lactopure	Poultry, calves and swine	Pharmed Medicare, Bangalore, India http://www.pharmedmedicare.com	Labelled as <i>Lactobacillus sporogenes</i> ^b but contains <i>B. coagulans</i> .
Neoferm BS 10	Poultry, calves and swine	Sanofi Sante Nutrition Animale, France	2 strains of <i>B. clausii</i> (CNCM MA23/3V and CNCM MA66/4M). Not licensed in the EU.
Toyoferin [®]	BioProgress SpA, Anagni, Italy http://www.giofil.it	Asahi Vet S.A., Tokyo (Head Off.), Japan http://www.asahi-kasei.co.jp	<i>B. cereus</i> var <i>toyoi</i> (NCIMB-40112/CNCM-1012) at a minimum concentration of 1 x 10 ¹⁰ CFU g ⁻¹ mixed with maize flour (4% by weight) and calcium carbonate (90% by weight). Licensed in the EU ^a .

^aauthorised for unlimited use by the EU.

^bnot recognised as a *Bacillus* species (www.bacterio.cict.fr)

Table 3: *Bacillus* probiotics for aquaculture^a

Brand	Manufacturer	Comments
BaoZyme-Aqua	Sino- Aqua Corp., Kaohsiung, Taiwan www.sino-aqua.com	<i>B. subtilis</i> strains Wu-S and Wu-T at 10 ⁸ CFU g ⁻¹ , product also contains <i>Lactobacillus</i> and <i>Saccharomyces</i> spp.
Biostart [®]	Microbial Solutions, Johannesburg, South Africa and Advanced Microbial Systems, Shakopee, MN, USA	Mixture of: <i>B. megaterium</i> , <i>B. licheniformis</i> , <i>Paenibacillus polymyxa</i> and two strains of <i>B. subtilis</i> [45].
Liquallife [®]	Cargill, Animal Nutrition Division www.cargill.com	Undefined <i>Bacillus</i> species.
Promarine [®]	Sino-Aqua company Kaohsiung, Taiwan www.sino-aqua.com	Carries four strains of <i>B. subtilis</i> .
Sanocare Sanolife Sanoguard>	INVE Technologies nv Dendermonde, Belgium www.inve.com	Various <i>Bacillus</i> species.

^aThis shows just a selection of registered products from international companies. In shrimp-producing countries the number of 'local' products is substantial, for example, in Vietnam over 30 different products are sold.