

S K BIOBIZ PVT LTD

Pioneering Microbial Solutions
for Nurturing Nature



SKBPL SUPPORTS

- Manufacturing and Supply of Quality Probiotics
- Contract Research
- Contract Manufacturing of your Probiotics
- Manufacturing in White Label



Manufactured and Marketed by

S K Biobiz Pvt Ltd

Unit I, G1-G4, Sancheti warehousing Complex, 10th Mile,

Mumbai Agra Road, Jaulke, Tal. Dindori, Nashik - 422206,

Maharashtra, India. Email: info@skbiobiz.com | Contact: +91 966557603

www.skbiobiz.com

SK BIOBIZ PVT LTD

Pioneering Microbial Solutions for Nurturing Nature



Bacillus amyloliquefaciens SKB 2109 (MCC0568)

Description : Spray dried probiotic powder. Brown to beige cream-color in appearance.

Composition : *Bacillus amyloliquefaciens* SKB 2109 (MCC0568) spores

Microbiological specifications

- Cell count : 100×10^9 CFU/g (1×10^{11} CFU/g)
- Non-Lactic Count < 5000 / g
- *E-coli* absent in 10 g
- *Salmonella sp.* absent in 10 g
- *Pseudomonas aeruginosa* absent/g
- *Staphylococcus aureus* absent/g

Mode of Action

- Production of enzymes
- Production of Bioactive metabolites
- Increase Short chain fatty acid
- Immunomodulation of host

Storage : Shelf life is 36 months when stored in the original, sealed package at or below 25°C. Frozen storage will extend shelf life

Packaging : High barrier foil laminated pouch Quantity 1 Kg, 5 Kg, 20 Kg

Directions : Mix 40 g to 50 g per 1000 kg (metric ton) of feed to achieve 0.4×10^6 to 0.5×10^6 CFU/g of complete feed

Purity and legal status

Local regulations should always be consulted concerning the status of this product, as legislation regarding its intended use may vary from country to country. AFFCO registered for sale in USA

Safety and handling

MSDS is available on request, Acute and Sub acute toxicity studies data available. Data for antibiotic resistance, virulence genes, Cytotoxicity available

Certifications

FSSAI (FDA), GMP, Halal, AFFCO registration, FAMIQs

GMO status

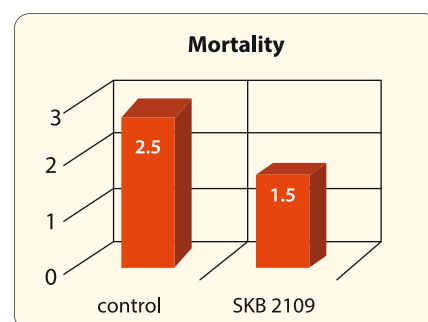
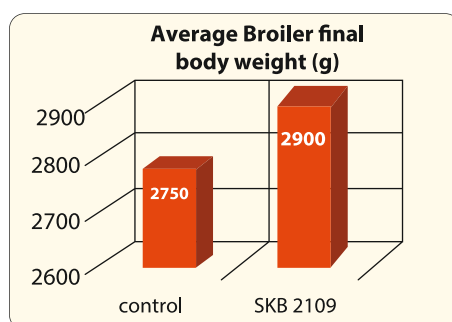
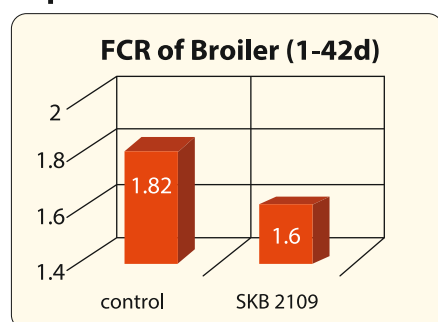
Bacillus amyloliquefaciens does not consist of, nor contains, nor is produced from genetically modified organisms according to the definitions of Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22 September 2003



Main Function

- SKB 2109 improves digestibility, increases feed efficiency and helps reduce FCR.
- Balances microflora in the intestine, improves proliferation of beneficial gut microbiota, promotes average daily gain
- Decrease inflammation of intestinal tract
- SKB 2109 shows antioxidant activity and improves immune response
- SKB 2109 produces bioactive metabolites which show activities against pathogenic *E-coli*, *Staphylococcus*, *Clostridium species* etc. Improves overall performance of animal product and can serve as an ideal supplement to reduce use of antibiotic treatment

Experimental data



Enzyme profiling for SKB2109

Cellulase	Positive
Xylanase	Positive
Lipase	Positive
Amylase	Positive
Phytase	Positive
Phosphatase	Positive
Urease	Positive
Catalase	Positive
Uricase	Positive

Viability of SKB 2109 at variable time & temperature

Sr. No.	Incubation Temperature & Time	Count CFU/ml	% Retention of viability
1	45°C for 60 minutes	10.00 X 10 ⁹	100
2	60° C for 45 minutes	9.80 X 10 ⁹	98
3	70° C for 30 minutes	9.80 X 10 ⁹	98
4	80° C for 20 minutes	9.50 X 10 ⁹	95
5	90° C for 10 minutes	9.00 X 10 ⁹	90

Owing to its properties viz. enzyme production, gastric pH and bile salt stability, temperature stability, non cytotoxic nature, production of bioactive metabolites, its proven in vivo efficacy towards treatment and reversal of *E-coli*, induced diarrhea in mice and rats and its safe nature based on acute toxicity studies, *Bacillus amyloliquefaciens* SKB2109 can serve as an ideal candidate to qualify as probiotic in animal feed industry.

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Bacillus coagulans Lab-19 (MCC0554/DSM34743)

An Ideal choice of Probiotic for health of your animals

Description : Spray dried probiotic powder. Light brown to beige cream-color in appearance.

Synonym: *Heyndrickxia coagulans*, *Weizmania coagulans*

Composition : *Bacillus coagulans* Lab-19 spores

Microbiological specifications

- Cell count > 100×10^9 CFU/g (1×10^{11} CFU/g)
- Non-Lactic Count < 5000 /g
- *E-coli* absent in 10g
- *Salmonella sp.* absent in 10g
- *Pseudomonas aeruginosa* absent/g
- *Staphylococcus aureus* absent/g
- *Bacillus cereus* not more than 500 cfu/g

Mode of Action

- Production of Lactic acid
- Produces antimicrobial peptides, secondary metabolites
- Production of organic acids, Short chain fatty acids
- Production of Enzymes (Cellulase, Amylase, Lipase, Protease, Phytase, Uricase, Urease, Cellulase, Phosphatase)
- Antioxidant properties
- Shows activity against cancer cell line
- Effective against pathogenic strains of *E-coli*, *Salmonella*, *S.aureus*, *Clostridium species*

Storage : Shelf life is 36 months when stored in the original, sealed package at or below $25 \pm 2^\circ\text{C}$, RH 65%. Frozen storage will extend shelf life

Packaging :

- High barrier foil laminated pouch Quantity 1 Kg, 5 Kg
- Secondary packaging: Corrugated boxes/HDPE drum

Purity and legal status

Local regulations should always be consulted concerning the status of this product, as legislation regarding its intended use may vary from country to country. AFFCO registered for sale in USA

Safety and handling

MSDS is available on request, Acute and Sub acute toxicity studies data available.
Data for antibiotic resistance, virulence genes, Cytotoxicity available

GMO status

Bacillus coagulans does not consist of, nor contains, nor is produced from genetically modified organisms according to the definitions of Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22 September 2003.



Properties of *Bacillus coagulans* Lab-19/MCC 0554/DSMZ 34743 (A well characterized probiotic spore)

• Whole Genome sequencing	Available
• 16s rDNA sequencing	Available
• Strain depositions	MCC Pune, India; DSMZ Germany
• Heat stable	25° C to 90° C
• Palletization	Stable
• pH Stable	Recovery > 79% at pH 2.0 Recovery > 90% at pH 9.0
• Bile salt tolerant	Stable
• Compatible	Electrolytes, organic acid, Anticoccidial chemicals, Antibiotics
• Shelf life	3 years (25 ± 2° C, RH 65)
• Acute toxicity (Rats)	Non Toxic
• Sub-Acute toxicity (Rats)	Non Toxic
• Cytotoxicity	Non cytotoxic to human cells (VERO and CHO cell line)
• Efficacy studies	Poultry, Swine

Improves

- Gut health
- Immunity
- Relieves stress

Method of application (Direct fed microbial)

- Water soluble probiotic powder
- Water probiotic tablets/Bolus (effervescent tablets)
- Can be incorporated in Feed (Mix 40 g to 50 g per 1000 kg (metric ton) of feed to achieve 0.4×10^6 to 0.5×10^6 CFU/g of complete feed)

Publication:

Invitro and Invio evaluation of probiotic potential and safety assessment of *Bacillus coagulans* SKB Lab-19 (MCC 0554) in humans and animal healthcare.

"Regulatory Toxicology and Pharmacology"; 133 (2022)105218

Certifications

FSSAI (FDA), GMP, Halal, AFFCO registration, FAMIQs

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Bacillus licheniformis SKB 1809 (MCC0561)

Description : Spray dried probiotic powder. Brown to beige cream-color in appearance.

Composition : *Bacillus licheniformis* SKB 1809 (MCC0561) spores

Microbiological specifications

- Cell count : 100×10^9 CFU/g (1×10^{11} CFU/g)
- Non-Lactic Count < 5000 / g
- *E-coli* absent in 10 g
- *Salmonella sp.* absent in 10 g
- *Pseudomonas aeruginosa* absent/g
- *Staphylococcus aureus* absent/g

Mode of Action

- Production of enzymes
- Production of Bioactive metabolites
- Increase Short chain fatty acid
- Immunomodulation of host
- Anti-inflammatory activity

Storage : Shelf life is 36 months when stored in the original, sealed package at or below 25°C. Frozen storage will extend shelf life

Packaging : High barrier foil laminated pouch Quantity 1 Kg, 5 Kg, 20 Kg.

Directions :

Mix 40g to 50g per 1000 kg (metric ton) of feed to achieve 0.4×10^6 to 0.5×10^6 CFU/g of complete feed.

Purity and legal status :

Local regulations should always be consulted concerning the status of this product, as legislation regarding its intended use may vary from country to country. AFFCO registered for sale in USA

Safety and handling :

MSDS is available on request, Acute and Sub acute toxicity studies data available.
Data for antibiotic resistance, virulence genes, Cytotoxicity available

Certifications :

FSSAI (FDA), GMP, Halal, AFFCO registration, FAMIQs

GMO status :

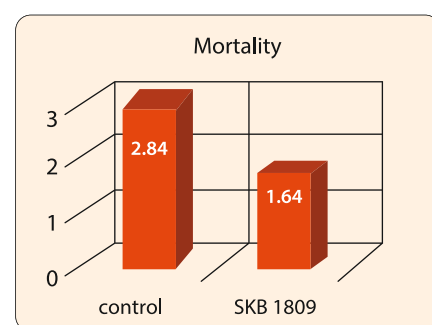
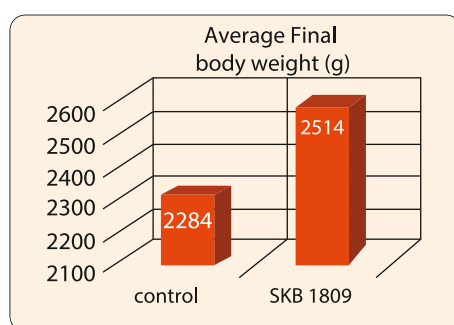
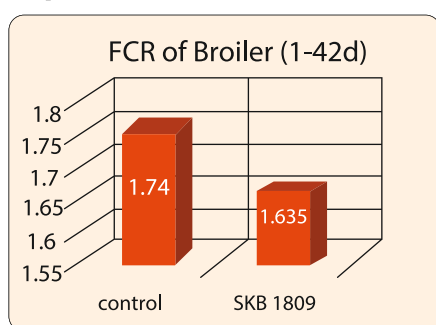
Bacillus licheniformis does not consist of, nor contains, nor is produced from genetically modified organisms according to the definitions of Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22 September 2003.



Main Function

- SKB 1809 improves digestibility, increases feed efficiency and helps reduce FCR.
- Balances microflora in the intestine, promotes average daily gain
- Decrease inflammation of intestinal tract
- SKB 1809 shows antioxidant activity and improves immune response
- SKB 1809 produces bioactive metabolites which show activities against pathogenic *E-coli*, *Staphylococcus*, *Clostridium species* etc. Improves overall performance of animal product and can serve as an ideal supplement to reduce use of antibiotic treatment.

Experimental data



Enzyme profiling for SKB1809

Cellulase	Positive
Xylanase	Positive
Lipase	Positive
Amylase	Positive
Phytase	Positive
Phosphatase	Positive
Urease	Positive
Nitrate reductase	Positive
Catalase	Positive
Uricase	Positive

Viability of SKB 1809 at variable time & temperature

Sr. No	Incubation Temperature & Time	Count, CFU/ml	% Retention of viability
1	45° C for 60 minutes	10.00 x 10 ⁹	100
2	60° C for 45 minutes	9.80 x 10 ⁹	98
3	70° C for 30 minutes	9.70 x 10 ⁹	97
4	80° C for 20 minutes	9.40 x 10 ⁹	94
5	90° C for 10 minutes	8.90 x 10 ⁹	89

pH Stable: Recovery > 73% at pH 2.0; Recovery > 90% at pH 9.0

Owing to its properties viz. enzyme production, gastric pH and bile salt stability, temperature stability, non cytotoxic nature, production of bioactive metabolites, its proven in vivo efficacy in chicken, its safe nature based on acute toxicity studies, *Bacillus licheniformis* SKB1809 can serve as an ideal candidate to qualify as probiotic in animal feed industry.

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Bacillus pumilus SKB 2008(MCC0565)

An Ideal choice of Probiotic for health of your animals

Description : Spray dried probiotic powder. Light brown to beige cream-color in appearance.

Composition : *Bacillus pumilus* 2008 (MCC0565) spores

Microbiological specifications

- Cell count $> 100 \times 10^9$ CFU/ g (1×10^{11} CFU/g)
- Non-Lactic Count < 5000 / g
- *E-coli* absent in 10 g
- *Salmonella sp.* absent in 10 g
- *Pseudomonas aeruginosa* absent/g
- *Staphylococcus aureus* absent/g
- *Bacillus cereus* not more than 500 cfu/g

Improves

- Gut health
- Immunity
- Reduces gut inflammation
- Excellent activity against pathogenic bacteria and fungi

Storage : Shelf life is 36 months when stored in the original, sealed package at or below $25 \pm 2^\circ\text{C}$, RH 65%. Frozen storage will extend shelf life

Packaging :

High barrier foil laminated pouch Quantity 1 Kg, 5 Kg, 20 Kg
Secondary packaging: Corrugated boxes/HDPE drum

Purity and legal status :

Local regulations should always be consulted concerning the status of this product, as legislation regarding its intended use may vary from country to country. AFFCO registered for sale in USA

Safety and handling :

MSDS is available on request, Acute and Sub acute toxicity studies data available.
Data for antibiotic resistance, virulence genes, Cytotoxicity available

GMO status :

Bacillus pumilus does not consist of, nor contains, nor is produced from genetically modified organisms according to the definitions of Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22 September 2003.



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Certifications :

FSSAI (FDA), GMP, Halal, AFFCO registration, FAMIQs

Properties of *Bacillus pumilus* SKB 2008/MCC 0565 (A well characterized probiotic spore)

Whole Genome sequencing	Available
16s rDNA sequencing	Available
Strain depositions	MCC Pune, India
Heat stable	25°C to 90°C
Palletization	Stable
pH Stable	Recovery > 70% at pH 2.0 Recovery > 90% at pH 9.0
Bile salt tolerant	Stable
Compatible	Electrolytes, organic acid, Anticoccidial chemicals, Antibiotics
Shelf life	36 months (25 ± 2°C, RH 65)
Acute toxicity (Rats)	Non Toxic
Sub-Acute toxicity (Rats)	Non Toxic
Cytotoxicity	Non cytotoxic to human cells (VERO and CHO cell line)
Efficacy studies	Poultry, Swine

Mode of Action

- Produces antimicrobial peptides, secondary metabolites, Bacteriocins
- Inhibition of pathogen attachment
- Production of organic acids, Short chain fatty acids
- Production of Enzymes (Cellulase, Amylase, Lipase, Protease, Phytase, Uricase, Urease, Cellulase, Phosphatase)
- Immunomodulatory activities: stimulation of immunoglobulin A
- Antioxidant properties
- Shows activity against cancer cell line
- Effective against pathogenic strains of *E-coli*, *Salmonella*, *S.aureus*, *Clostridium*, *Penicillium*, *Pseudomonas*

Method of application (Direct fed microbial)

- Water soluble probiotic powder
- Water probiotic tablets/Bolus (effervescent tablets)
- Can be incorporated in Feed
- Mix 40g to 50g per 1000 kg (metric ton) of feed to achieve 0.4×10^6 to 0.5×10^6 CFU/g of complete feed

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Bacillus subtilis SKB 2074 (MCC0563)

Description : Spray dried probiotic powder. Brown to beige cream-color in appearance.

Composition : *Bacillus subtilis* SKB 2074 (MCC0563) spores

Microbiological specifications

- Cell count : 100×10^9 CFU/g (1×10^{11} CFU/g)
- Non-Lactic Count < 5000/g
- *E-coli* absent in 10g
- *Salmonella sp.* absent in 10 g
- *Pseudomonas aeruginosa* absent/g
- *Staphylococcus aureus* absent/g

Mode of Action

- Production of enzymes
- Production of antimicrobials
- Production of organic acids
- Immunomodulation of host
- Antioxidant activity

Storage : Shelf life is 36 months when stored in the original, sealed package at or below 25°C. Frozen storage will extend shelf life

Packaging :

High barrier foil laminated pouch Quantity 1 Kg, 5 Kg, 20 Kg

Directions :

Mix 40 g to 50 g per 1000 kg (metric ton) of feed to achieve 0.4×10^6 to 0.5×10^6 CFU/g of complete feed.

Purity and legal status :

Local regulations should always be consulted concerning the status of this product, as legislation regarding its intended use may vary from country to country. AFFCO registered for sale in USA

Safety and handling :

MSDS is available on request, Acute and Sub acute toxicity studies data available.
Data for antibiotic resistance, virulence genes, Cytotoxicity available

Certifications :

FSSAI (FDA), GMP, Halal, AFFCO registration, FAMIQs

GMO status :

Bacillus subtilis does not consist of, nor contains, nor is produced from genetically modified organisms according to the definitions of Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22 September 2003



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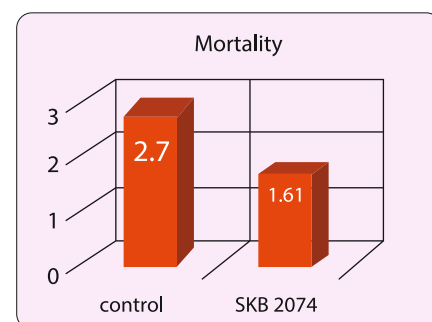
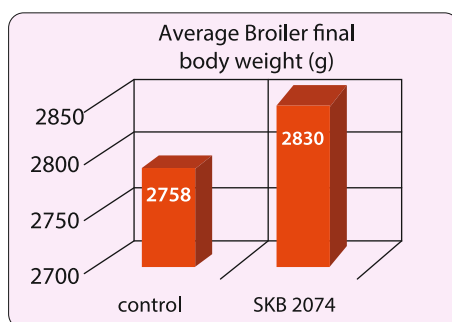
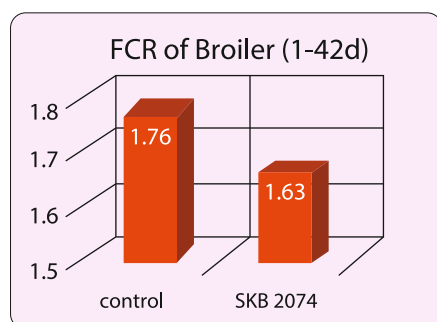
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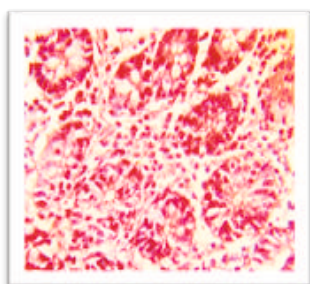
Main Function

- SKB 2074 improves digestibility, increases feed efficiency and helps reduce FCR.
- Balances microflora in the intestine, promotes average daily gain
- Decrease inflammation of intestinal tract
- SKB 2074 shows antioxidant activity and improves immune response
- Effective antimicrobial activities against pathogenic *E-coli*, *Staphylococcus*, *Clostridium* species etc. Improves overall performance of animal product and can serve as an ideal supplement to reduce use of antibiotic treatment.

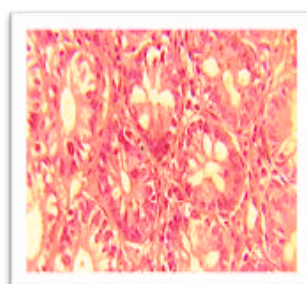
Experimental data



Effect of SKB2074 on E-coli induced diarrhea



Representation of photomicrographs of H&E stained showed damage of mucosal epithelium and crypt cell architecture compared in control group after infection



After treatment with SKB 2074 restoration or no damage to the mucosal epithelium with complete crypt cell architecture and integrity of goblet cells and no erosion nor cell infiltration observed

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