Bifidobacterial Probiotics for Nursing and Weaning

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ABSTRACT

Researchers at the University of California, Davis have developed an isolated strain of Bifidobacterium to be used in infant probiotics that can be produced at a commercially viable scale.

FULL DESCRIPTION

Infant Bifidobacterium strains can metabolize human milk oligosaccharides (HMOs), while the variety found in adults can only ferment oligosaccharides found in plants. Breast-fed infants are unique as they have the proper gut microbiome to process human milk. These bacteria have been widely studied in order to replicate their effects, but there can be manufacturing difficulties in growing these infant-derived strains effectively. Further research is needed in order to identify novel probiotics that mimic the functional effects of infant-borne Bifidobacterium in situ, but can also be grown at a commercial scale.

Researchers at the University of California Davis have isolated a strain of Bifidobacterium that can be used as a probiotic to enrich the diets for both breast-fed and formula-fed infants. Such probiotic strains are useful when weaning and adjusting an infant's diet to solid foods, as well as when an infant's diet is supplemented with formula. The new strain has a more robust growth and novel activation of key catabolic pathways compared to other Bifidobacterium, furthering its dietary benefits. The new strain can grow better than existing Bifidobacterial strains, and it is more commercially viable to produce in large quantities. In the future, this new strain can be included with a mixture of other probiotics without disruption. This research can be applied to improve infant health and nutrition during an essential phase of development.

APPLICATIONS

- Use in infant probiotics during weaning or other dietary changes
- Diet enrichment for both breast-fed and formula-fed infants

FEATURES/BENEFITS

- Shorter lag time and enhanced activation compared to other Bifidobacterial strains
- Can be grown quickly in a variety of environments
- Complementary to other healthy bacteria in the digestive system and additional probiotics

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OTHER INFORMATION

KEYWORDS

Bifidobacterium, Human milk oligosaccharides (HMO), Probiotic, Infant health, Digestive system

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Nutraceuticals
- **Biotechnology**
  - Food
  - Health
- **Medical**
  - Disease: Digestive System
  - New Chemical Entities, Drug Leads
  - Therapeutics
- **Research Tools**
  - Other

RELATED CASES

2022-572-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Prebiotic Oligosaccharides
- Reducing Free Milk Glycan Monomers Generated by the Neonate Gut Microbiota Eliminates Colonization by Dysbiotic Microbiome Members

- Additional Glycosyl Hydrolase is Critical to Bacteria's Ability to Consume HMOs
- Bifidobacterial Probiotic Supplements for Infants
- Increased Microorganism Alcohol Tolerance Via Transformation of its pntAB Locus
- Glycoprotein Cleaving Enzyme Isolated from Bifidobacteria

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