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Bactericidal Lanbiotic Inhibits Gram-negative Bacteria

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A Gram-negative and Gram-positive Bactericidal Lantibiotic

Lantibiotics are peptide-based antimicrobial compounds produced by several types of bacteria that inhibit other closely-related bacteria. The most common lantibiotic exhibits a wide range of effectiveness against most Gram-positive bacteria, supporting its common use in extending shelf life. However, this lantibiotic is ineffective in preventing the growth of Gram-negative bacteria such as E. coli and Salmonella. The researchers at the University of Minnesota have discovered a lantibiotic from a culture of Bifidobacterium longum, a dominant species in the human intestines. This lantibiotic is the first bacteriocin described to date to have natural bactericidal and inhibitory action against both Gram-negative and Gram-positive bacteria, including E.coli and Salmonella.

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This technology is available via a standard negotiated license agreement. Please contact us for specific details.

Natural Lantibiotic as a Broad Spectrum Bactericide

The technology relates to an isolated lantibiotic that is bactericidal to both **Gram-negative** and **Gram-positive** microbes, especially in conditions which do not damage the outer membrane of these microbes. Given that the enzymatic activities of gram-negative bacteria, particularly *Salmonella* and *E. coli*, are responsible for widespread contamination, safety recalls, and consumer illness, the technology has the potential to eliminate the bacterial threats presented by these and other pathogens. This inhibition and elimination of the bacterial threat can extend shelf life in a variety of food products including dairy, eggs, canned meat, and canned seafood. It can be used as a food preservative, probiotic and dietary supplement to inhibit a wider variety of spoilage and pathogenic bacteria in foods such as deli meats as compared to current lantibiotics. It is a natural preservative that can displace artificial chemical preservatives, giving appeal to foods as 'safe' and 'nutritious' and can be labeled as 'contains no preservatives'. As a product of *Bifidobacterium longum*, the peptide has been sequenced, partially purified, and partially characterized and is on the Generally Recognized as Safe (GRAS) list.

BENEFITS OF NATURAL BACTERICIDAL LANTIBIOTIC:

- Bactericide for use against *both* Gram-Positive (*Lactobacillus, Lactococcus, Streptococcus, Staphylococcus, Bacillus*) and Gram-negative bacteria (*E. coli, Salmonella, Serratia, Proteus*)
- Effective at neutral pH
- Stable in varying manufacturing and storage conditions
- Widely applicable in food industry to extend shelf life, nutrition industry as dietary supplement and pharmaceutical industry as alternative to antibiotics

Technology ID
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Category
Life Sciences/Biologics
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