BCIL Biotech Consortium India Limited

A novel process for the production of off odour/flavor free protein hydrolysate enriched with lysine from maize gluten meal and uses thereof

TECHNOLOGY AVAILABLE FOR TRANSFER

UNMET NEED AND OPPORTUNITY

Protein deficiency is a serious problem worldwide, affecting over 80% of Indians. Animal-derived proteins are expensive and have limited availability. Maize gluten meal, a by-product of maize (corn) wet-milling processing, is a rich source of protein. However, its unpleasant aroma, taste, and low solubility limit its use in human food.

The current technology utilizes a combination of green solvents and enzymatic hydrolysis to transform maize gluten meal into a high-quality protein hydrolysate with enhanced functional and nutritional properties.

STAGE OF DEVELOPMENT

The technology is developed at Lab scale with TRL 3-4. Laboratory-scale experiments have demonstrated the feasibility of the technology and produced promising results in terms of odor and flavor removal, protein hydrolysate yield, and amino acid profile. A prototype process has been developed and tested, indicating the potential for scalability.

INTELLECTUAL PROPERTY

Indian Patent Granted

UNIQUE SELLING PROPOSITION

- Odorless and flavorless: The technology utilizes limonin, a food grade solvent to remove or mask unpleasant odour and taste from maize gluten meal making it suitable for human consumption.
- Vegetarian protein source: The product is plant-based and suitable for vegetarians and vegans.
- Balanced amino acid profile: Enzymatic hydrolysis enhances absorption, solubility, and lysine content, resulting in a protein hydrolysate with a balanced amino acid profile.
- Sustainable and environmentally friendly: The technology employs a green solvent and enzymatic hydrolysis which reduces environmental impact compared to chemical hydrolysis methods

TECHNOLOGY

The present innovative technology utilizes a combination of green solvents and enzymatic hydrolysis to transform maize gluten meal into a high-quality protein hydrolysate with enhanced functional and nutritional properties. This process involves:

- Deodorization: Removing unpleasant odors using chemical treatment.
- Enzymatic hydrolysis: Breaking down protein into smaller peptides using enzyme.

LICENSING OPPORTUNITY

BCIL is looking for suitable industrial partner for commercialization of this nanotechnology for delivery of biomedical cargos.

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