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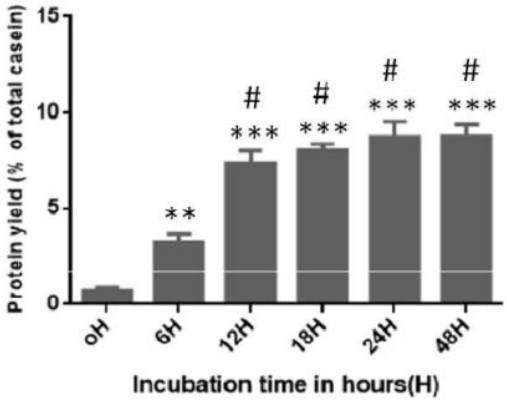
PENDING

(IN201811018301) Non-enzymatic method for large scale isolation of casein from milk



NEED

Food industries lose up to 35% product quality due to inconsistent milk protein extraction. Existing methods involve high heat, complex filtration, or chemical residues. But what if high-purity β-casein could be isolated without denaturing the protein or introducing harsh chemicals?

TECHNOLOGY OVERVIEW

This invention introduces a room-temperature process using glacial acetic acid to isolate β-casein from milk with 99.9% purity. It uses centrifugation and selective filtration to separate casein fractions efficiently, enabling scalable production for food, feed, and material industries with minimal impurity and high yield.

TECHNOLOGY KEY FEATURES

Uses 1% acetic acid at room temp; 25–35% β-casein yield with 99.9% purity; enables 14–16% total casein recovery; eliminates denaturation; supports scale-up for dairy, bioplastics, and supplement applications.

MARKET ANALYSIS

The global casein market is projected to reach $5.4B by 2033, growing at 6.1% CAGR. India's dairy protein segment grows at 7.8% CAGR. Key drivers: clean-label proteins, infant nutrition, functional food, and bio-based adhesives. (Sources: IMARC Group, Market Research Future)

Target Industries

, Dairy processors producing functional proteins; nutraceutical companies using β-casein in supplements; specialty manufacturers developing casein-based glues, paints, or biofilms.

AT A GLANCE

- SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 12 (Responsible Consumption and Production)

Read more here

Technology is available for licensing/ co-development.

Reach out to Prof. Deepak Chitkara, Coordinator, BITS Technology Enabling Centre,
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