



**Biotech Consortium India Limited**

# Functionalized Membrane-Based Process for Selective Isolation and Enrichment of Milk Fat Globules (MFGs)

TECHNOLOGY AVAILABLE FOR TRANSFER

## UNMET NEED AND OPPORTUNITY

Milk fat globule membrane protein (MFGMP) constitutes a fraction of milk proteins that may display important protective effects in early infancy. MFGM in mammalian milk contains many bioactive components with diverse functions and has been linked to cognitive and health benefits to infants. Due to increasing health awareness, dairy industry has focused on this additional milk component as MFGs. These MFGs are extracted usually by standard milk processing technology. MFGs of both large and small size can be isolated separately, but small fat globules extraction efficiency is low by conventional method. Being responsible component for taste, small fat globules are very important in the dairy product. To enrich the concentration of various sized fat globules especially small fat globules for better cream and yogurt production the present technology can be utilized. The global anhydrous milk fat market was worth US\$ 2.9 Billion in 2018, registering a CAGR of 10.7% during 2011-2018. Earlier, the consumption of anhydrous milk fat was largely confined to countries such as Australia and New Zealand, but increased health concerns and fusion foods has enhanced use of milk fats in America, Europe and South Asia.

## TECHNOLOGY

The present invention particularly relates to a functionalized membrane and a process that is non-thermal, environment friendly, faster and causes minimal damage to fat globules by avoiding the other steps of centrifugation and washing which are usually involved in the conventional method of isolating MFG, thereby retaining their health promoting benefits by preventing the structural integrity and loss of the globules. The present functionalized membrane is efficient in isolating small fat globules which are responsible for good taste of a dairy product. Thus provides the selective isolation of MFGs which can be used as

## INTELLECTUAL PROPERTY

Patent application filed in India in 2018

<https://statista.com/statistics/502280/global-dairy-market-value> <https://www.imarcgroup.com/dairy-industry-in-india>

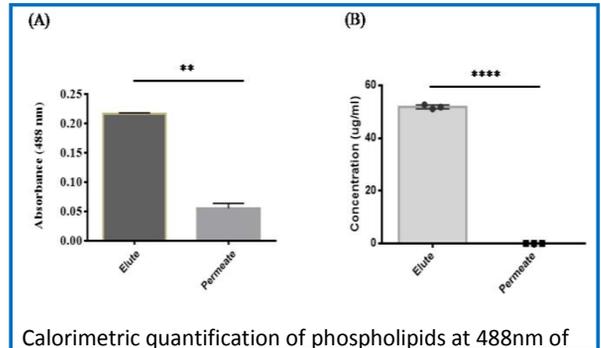
## UNIQUE SELLING PROPOSITION

Functionalized membrane can isolate MFGs directly from milk

1. Simple one step process as compared to conventional multistep processes
2. Less expensive than chromatographic method
3. Environmental friendly as it's a non-thermal, non-chemical process
4. Reusable membrane

## STAGE OF DEVELOPMENT

- Proof of concept is established in lab set-up.
- In-house Lab Validation



- Proof of concept is established in lab set-up.

## APPLICATIONS

- Charge based isolation of molecules from various fluids
- Phospholipids isolation directly from whole milk
- Water treatment in Waste water treatment plant

## LICENSING OPPORTUNITY

BCIL is looking for a suitable industrial partner for commercialization of Functionalized Membrane for MFGs isolation.

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