

Researchers in Singapore use milk to develop potential new treatment for leaky gut

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The intestinal or gut barrier is crucial for nutrient absorption and preventing harmful substances from leaking into the blood stream. Under diseased conditions, the disruption of the gut barrier may increase its permeability and result in a "leaky gut".

The "leaky gut" syndrome often comes with symptoms like chronic diarrhoea, constipation, or bloating. It has been associated with many diseases, including inflammatory bowel disease and non-alcoholic fatty liver disease.

According to researchers at Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), in collaboration with Professor Huaxi Yi from Ocean University of China, milk-derived extracellular vesicles (mEVs), a type of natural nanoparticles present in bovine and human breast milk, are reported to restore gut barrier integrity, prevent leakage of bacterial toxins into the blood stream, and alleviate gut and liver disorders.

The mEVs are obtained by removing milk fat, proteins and lactose with an in-house approach developed by the researchers. They discovered that large amounts of proteins and small nucleic acids carried in mEVs are associated with gut barrier function. The mEVs extracted from both human breast milk and cow milk carry similar therapeutic contents. The treatment efficacy of mEVs was demonstrated in laboratory models.

As per the research team, a human adult may need to drink 1 litre of milk a day to achieve therapeutic effects on the leaky gut. The mEVs are thus more beneficial for individuals with lactose intolerance.

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