Lycotec

L-tug – lipid folding disruption technology for Functional Food and Beverages

Engineering edible fats and oils to reduce rate of digestion

Technology

L-tug is a technology specifically targeting animal fats, chocolate and vegetable oils, overconsumption of which may result in hyper-lipidaemia and such conditions as metabolic syndrome, obesity, diabetes and atherosclerosis.

It is based on the physiology of digestion that the larger the diameter of the lipid particle, the longer it takes to digest it. By expanding the diameter of this particle by 2-fold, for example, it would increase its surface by 4-fold, hence reduce the rate of digestion by 4-fold.

The application of this technology does not involve any chemical modifications or changes in taste of the products, only a physical disruption of the lipid folding. This effect remains even when the lipids are incorporated into other food or beverage matrixes, for example milk or other dairy products.

The properties are also preserved even in fermented food products such as yogurts.

IP Protection

A composition of matter patent application was filed 2 December 2011. A technology patent application was filed 7 February 2018.

Applications

The efficacy of L-tug technology in lipid management has been clinically validated for a number of products including dairy butter, some vegetable oils, chocolate and ice cream.

L-tug:

- is a platform technology which can be used for different food or beverage products which contain lipids
- is safe and can be applied at the final stage of manufacturing of fat or oil products
- is thermo-resistant and retains its properties after baking, cooking or boiling

Regulatory

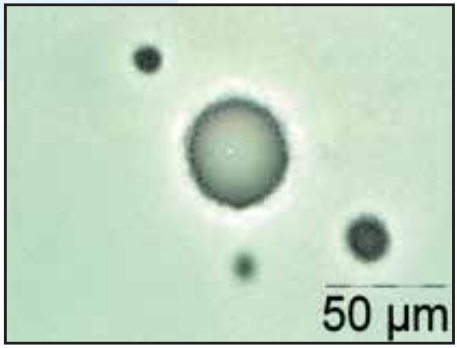
L-tug is safe for humans and animals; it does not involve creating new chemical entities, hence no need to apply for Novel Food status.

Since L-tug is a food engineering process resulting in reduction of food fat digestibility, which is one of the key factors in controlling blood lipids and body mass, the health claims would not need EFSA or FDA approval, and the products can qualify as a Food for Special Medical Purposes, a status which requires only national authority notification and a scientific dossier to substantiate the claims.

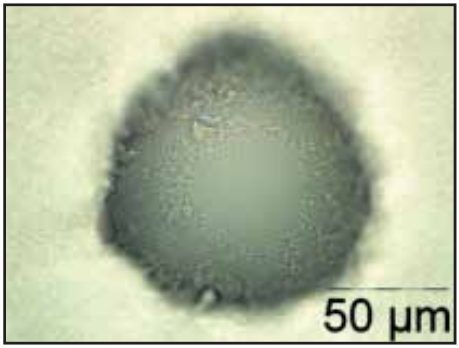
For more information and enquiries please contact info@lycotec.com

L-tug Chocolate

Effect of L-tug lipid disruption technology on fat globules of cocoa butter

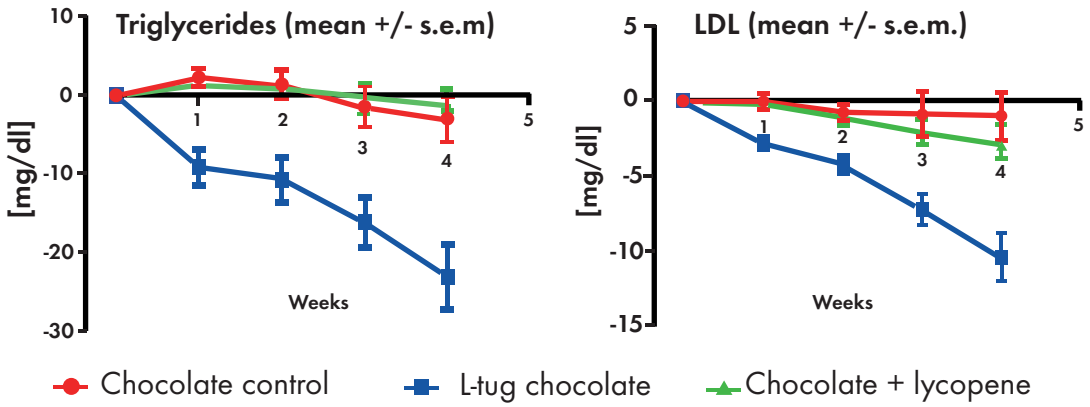


control cocoa butter



L-tug cocoa butter

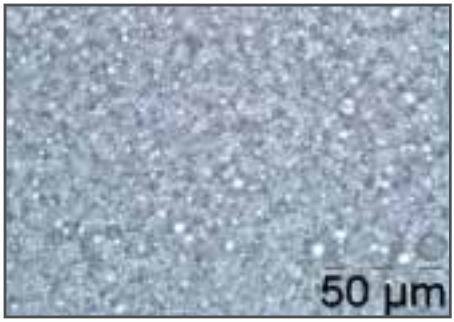
10g of L-tug chocolate reduces elevated blood lipids in 4 weeks of daily ingestion



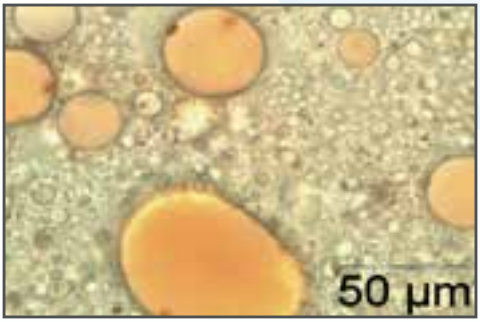
British Journal of Medicine and Medical Research (2016),13(11): 1-11
"Lycopene Embedded into Cocoa Butter Micelles of Dark Chocolate Causes Dose-dependent Decrease in Serum Lipids of Hypercholesterolemic Volunteers"
Ivan M. Petyaev, Pavel Y. Dovgalevsky, Natalia E. Chalyk,
Victor A. Klochkov and Nigel H. Kyle

L-tug Dairy Butter - microscopy

Effect of L-tug lipid disruption technology
on fat globules of dairy butter



Control dairy butter

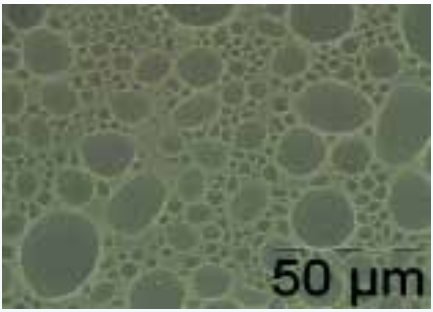


L-tug dairy butter

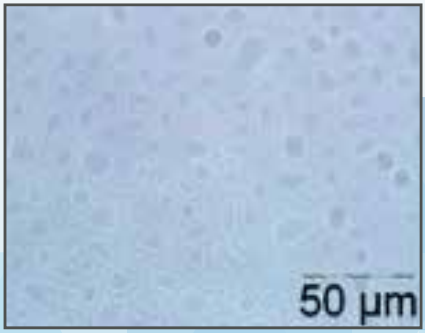
L-tug Vegetable Oils - microscopy

Effect of L-tug lipid disruption technology on lipid
droplets of olive and sunflower oils

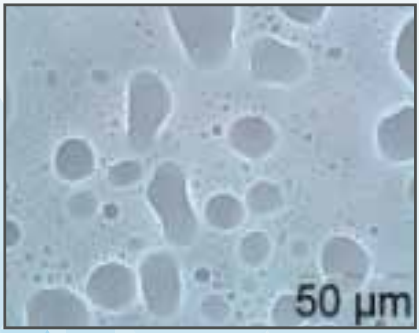
Control olive oil



L-tug olive oil



Control sunflower oil



L-tug sunflower oil

L-tug
finished product appearance

L-tug sunflower oil

L-tug dairy butter

Contact Us

Lycotec
Granta Park,
McClintock Building
Great Abington
Cambridge CB21 6GP
Phone: +44(0) 1223 651411
Email: info@lycotec.com

www.lycotec.com