BIOCHEM show case

Exploit natural emulsifiers

Problem

Emulsifiers are used to stabilize formulations in personal care products. These ingredients are typically derived from petroleum or animal-based raw materials. Consumers are increasingly demanding natural ingredients in personal care products.

Technical solution

Oleosomes are natural reservoirs that function to preserve and protect seed oil from rancidity and oxidation. The oleosome consists of an inner reservoir of triglycerides and vitamins, surrounded by a phospholipid layer, which in turn is encapsulated by unique proteins called oleosins.

Botaneco has developed a proprietary process to isolate intact oleosomes from plants, beginning with safflower. The *Hydresia* oleosomes are isolated from renewable safflower or almond seeds in the form of an aqueous dispersion or oil/water emulsion by centrifugation. In this form, oleosomes can either be used as a primary emulsifier to form very effective and mild, cosmetic emulsions or they can be used as delivery systems for skin or hair of the contents found naturally within the structure e.g. triglycerides, anti-oxidants, etc. The micron-sized reservoirs of oil surrounded by thin protein membranes provide natural emulsification properties when in formulation, and then dry, collapse and release their contents over time following application to the skin or hair. The multifunctional oleosomes possess both hydrophobic and hydrophilic characteristics.

Benefits

- **Cold processed reducing time and energy consumption**
- **All aqueous process**

- **Other oils and active ingredients, such as sunscreens, oil soluble vitamins, insect repellents and fragrances, can be incorporated into the oleosomes if carried out under low shear conditions**

- **Superior aesthetic properties**

- **Conventional low molecular weight emulsifiers can penetrate the skin, disrupting skin lipids and increasing epidermal water loss, the thin oleosome protein layer is high molecular weight and remains on the skin surface**

- **Compatible with high levels of alcohol and stable at low pH, allowing use as a moisturizer in applications such as hand sanitisers and in combination with –hydroxy acids.**

Additional information

Botaneco Website

http://www.botaneco.ca/