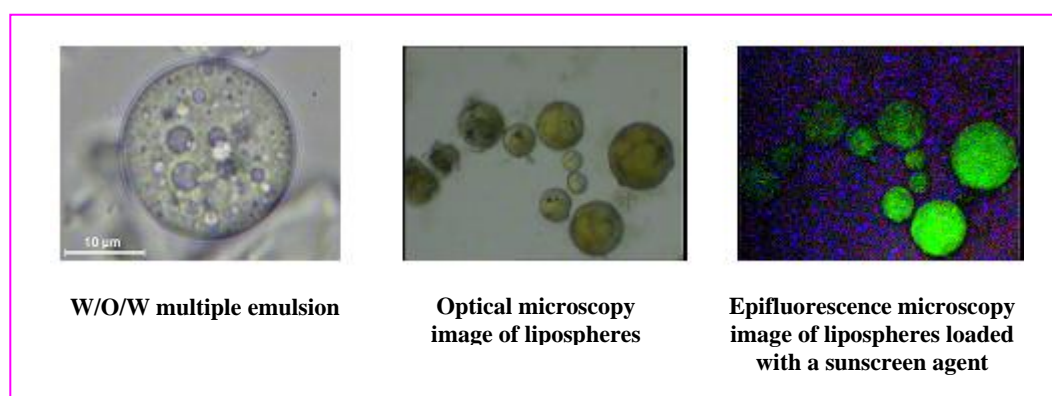


Lipid microparticles for the oral drug administration and cosmetic skin application

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The research led to the development of lipid microparticles (lipospheres), by using simple or multiple emulsion techniques, for pharmaceutical (improvement of the oral bioavailability of instable or poorly absorbed drugs) or cosmetic (irritation potential decrease of cosmetic ingredients such as glycolic acid or photostability enhancement of sunscreens) application.



1. Description of the product

Lipid microparticles (lipospheres) for oral drug administration or cosmetic skin application were developed by a melt technique of simple or multiple emulsions to entrap lipophilic or hydrophilic compounds, respectively. Lipospheres are evaluated *in vitro* (morphology, size, loading level, drug release, skin permeation), *ex vivo* (Peyer's patch uptake) and *in vivo* (animal models to assay the bioavailability of orally administered drugs, human beings to evaluate skin absorption by stripping test and tolerance by patch test).

2. Innovative aspect of the product

Lipid microparticles such as lipospheres represent suitable carrier to protect labile drugs from gastric environment and to release them gradually in the intestinal tract and to promote their absorption through the lymphatic system. In the cosmetic field, lipospheres utilize lipids having chemical affinity with cutaneous components, assuring stability enhancement of the encapsulated compound, modulated release reducing skin damage and skin permeation. By comparison with different lipid particles, lipospheres show higher stability and loading levels for lipophilic substances.

3. Main advantages of the offer

The development of solid lipid microparticles by a melt technique represents an easy and useful method avoiding the use of organic solvents. Owing to their nature and size, lipospheres guarantee biocompatibility for both oral administration and skin application, they can enhance drug absorption through the intestinal tract or prevent skin permeation of substances having a surface action.

4. Technology key words

Lipospheres, oral route, skin application

5. Current Stage of Development

Development phase – *In vitro* and *in vivo* skin absorption test.

6. Intellectual Property Rights

The product is not covered by patent

Technical and scientific publications

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