Multiple emulsions: advantages and using

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Multiple emulsions are complex systems, termed "emulsions of emulsions", i.e. the droplets of the dispersed phase contain even smaller dispersed droplets themselves. Multiple emulsions are also known as emulsions of emulsions, liquid membrane system or double emulsion [1,3].

Based on nature of dispersed medium multiple emulsions are of two types, oil-in-water-in-oil (O/W/O) and water-in-oil-in-water (W/O/W). There are a lot of advantages of multiple emulsions [2]: masks bitter taste and odor of drugs, thereby making them more palatable, prolongs release of drug, thereby providing sustained release action, provides protection to drugs which are susceptible to oxidation or hydrolysis, enhancement of enteric or dermal absorption, hydrophilic as well as hydrophobic drugs can be entrapped, enhances bioavailability and thus increase in drug dosing intervals. And some disadvantages: 1. Thermodynamically unstable, have complex structure, which leads to short shelf life of product. 2. These are packaged in a plastic/glass container, so care should be taken in handling and

Multiple emulsions are of interest to the skin care formulator because of the elegant appearance and less greasy feel of these formulation types. Also there are finding immense use because of their vesicular structure with innermost phase closely similar to that of liposomal vesicles and selective permeability characteristic of liquid membranes.

Multiple emulsions is one of the advanced drug delivery systems for improvement of various characteristics of drugs like bioavailability, taste, release rate etc. The advances include various novel formulations for betterment of the drug administration and improvement in the palatability of drug by incorporating them into various formulations.

These are used in various pharmaceutical applications as it has a remarkable degree of biocompatibility, completely biodegradable, hydrophilic and hydrophobic drugs can be entrapped, protection from inactivation by the endogenous factors etc. These can be used in many applications like taste masking, sustained release, delivering the unstable drug etc.

Literature

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