

Oil-In-Oil emulsion: Future prospects in controlled release drug delivery system

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The delivery of poorly water-soluble drugs has been the subject of much research, also some drugs are unstable in the presence of water therefore cannot be incorporated into aqueous formulation. To overcome these problems emulsions can be formulated without an aqueous phase to produce non-aqueous or oil-in-oil emulsions. As there are no guidelines for the selection of surfactants to stabilize two immiscible non-polar oils we are continuing to study a wider range of nonaqueous systems to develop a better understanding of stabilization. Perhaps an analogue of HLB, a lipophile (1)-lipophile (2) balance (L1L2B) may be used to predict surfactant choice. Well-stabilized systems will find uses in controlled release & mechanism of absorption of drugs from oily solutions involves two different absorption routes. Firstly, drug molecules were taken up together with the direct absorption of small oil droplets, and secondly, drug was absorbed after being transferred from the oily depot into the aqueous phase which surrounded the injection site. Further studies on formulation, drug release from intramuscular & subcutaneous depots of these non-aqueous systems are about to begin.

Biography

Miss Yashoda V. Mane, doing M. Pharm. (Pharmaceutics) at Shivaji University, Kolhapur. She has presented various posters in national conferences. She is Life Member of Indian Pharmaceutical Association.

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Novel nonaqueous emulsion

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Liquid administration of drugs is convenient and often advantageous. Almost 40% of lipophilic drug candidates fail to reach market although exhibiting potential pharmacodynamic activities. Some drugs are either unstable in the presence of water or are insoluble in water & therefore cannot be incorporated into aqueous formulation. To overcome these problems emulsions can be formulated without an aqueous phase to produce anhydrous, non-aqueous or oil-in-oil emulsions. Mostly non-ionic surfactant & block copolymer used to stabilize nonaqueous system. Non-aqueous systems are well known as solvents for drugs, suspension vehicles, oleogels, soft gelatin or magnoresponsive drug delivery system. It used as topical application bases for dermatologicals, particularly for labile drugs, as emollient bases for cosmetic preparations, or as nutrient preparations. It provides reservoir vehicles for transdermal systems and controlled drug delivery systems or hydrolytically unstable drugs.

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