

Dr. Guru Betageri



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Dr. Guru Betageri is a Professor of Pharmaceutical Sciences and Associate Dean of Graduate College of Biomedical Sciences at Western University of Health Sciences. Dr. Betageri's research expertise is in the area of "Liposome and Lipid Based Drug Delivery" systems. He has obtained grant support from Federal agencies as well as more than 40 Pharmaceutical companies to support his research activities. He was instrumental in the formulation and development of several products on the market. He teaches Pharmaceutics to Pharm.D. Students and preformulation, product development and novel drug delivery systems to graduate students. Dr. Betageri has published more than 70 original research papers in refereed journals and presented more than 100 papers at National and International meetings. He has been invited speaker at various National and International Conferences and Pharmaceutical companies. He serves as consultant to various pharmaceutical companies at US and International companies. He is a reviewer for more than 15 pharmaceutical journals and he is also on the editorial board of several journals. He is a co-author on the book entitled "Liposome Drug Delivery" and he has co-authored several book chapters. He has been awarded four US patents. Dr. Betageri is a member of AAPS, CRS and AACP.

Proliposomal Drug Delivery

Liposomes were discovered in 1960s and developed as drug delivery systems in the 1980s and the first liposomal product was marketed in 1990s. The products on the market are administered by intravenous route. These products are based on conventional and Stealth liposome technology. Liposome drug delivery systems have played a significant role in formulation of potent drugs to improve therapeutics and reduce toxic effects. The use of liposomes in delivery of drugs has been widely investigated. Oral delivery of liposomes has been a controversial subject based on contradictory reports in the literature. Polymerized,

microencapsulated and polymer-coated liposomes have all increased the potential of oral delivery of liposomal formulations. The development of proliposomes for oral delivery of water insoluble drugs has demonstrated improvement in bioavailability of such drugs. These delivery systems have been utilized for small molecules as well protein/peptide based drug molecules. Advantages of such formulations include enhanced bioavailability, target specific and controlled release, protection of drug molecules from degradation, reduction of gastrointestinal side effects and masking of bitter taste. Phospholipids are most suitable for poorly water-soluble molecules. However, phospholipids have been used for water-soluble molecules as well to enhance the absorption and improve oral bioavailability. Formulations containing phospholipids address dissolution as well as absorption of drug molecules. Rate and extent of dissolution of poorly water-soluble molecules are significantly higher with formulations containing phospholipids. Phospholipid based formulations are preferentially processed into the lymphatic system rather than into the portal blood capillaries. Lymphatic absorption of such delivery systems is associated with reduced first-pass metabolism. Proliposome based delivery systems can be formulated as solid, semisolid or liquid dosage forms.