ABSTRACT

The thesis is about improvement of low/poor oral bioavailability of drug compounds which are caused by poor drug solubilisation and/or poor drug absorption. By utilizing well established principles of LDS, this thesis is towards development of formulation alternatives through oral route for an improved clinical efficacy & stability profile. The hypothesis of the current work is that by selection of suitable lipid, surfactant and co-surfactant ratios, desired thermodynamic properties can be achieved which can be indirectly measured using suitable in vitro drug release and in vivo drug absorption studies. Three model drugs, Chlorthalidone, Ramipril & Alitretinoin were selected and included in LDS for developing various dosage forms as tablets, liquid-in-hard gelatin capsule & liquid-in-hard gelatin capsule respectively for oral administration. The formulation and study design has led to either reduction in dosage amount or improvement in bioavailability & chemical stability profile w.r.t. drug potency claims and minimizing risk of impurities, resources & complexity reduction in manufacturing operations leading to cost savings. This work will provide relief from this aspect ensuring significantly reduced exposure to this unintended healthy population. Ultimately, this will also introduce a superior commercial aspect during the marketing interactions with registered medical practitioners.