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**Gastro-Intestinal Lymphatic Absorption of *Silybum Marianum* Formulated in Self-Emulsifying Pellets**

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The objective of this study was to develop solid self-emulsifying pellets to deliver the poorly bioavailable Milk Thistle extract (*Silybum Marianum*) [1]. These pellets were prepared via extrusion/spheronization procedure, using a self-emulsifying system or SES (composed of Akoline MCM®, Miglyol®, Tween 80®, Soy Lecithin and Propylene Glycol), microcrystalline cellulose and lactose monohydrate. To select the most suitable formulations for extrusion and spheronization, an experimental design of experiences was adopted. The screening amongst formulations (13 different blends) was carried out preparing pellets and evaluating extrusion profiles and quality of the spheronized extrudates. The pellets were characterized for sizing and shape, density and hardness. Although more than one type of pellets demonstrated adequate morphological and technological characteristics, pellets having best properties were selected for further biopharmaceutical investigations, including *in vitro* dissolution, determination of released droplet size and *in vivo* trials on rats to study serum and lymph levels after oral administration of the pellets. These preliminary technological and pharmacokinetic data demonstrated that extrusion/spheronization is a viable technology to produce self-emulsifying pellets of good quality and able to improve *in vivo* oral bioavailability of main components of a phytotherapeutic extract, also enhancing its lymphatic absorption.

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