

Flaxseed oil oleogels as potential vehicles por oral delivery of curcumin

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Abstract:

Organogelation is one of the most novel and promising techniques for edible oil structuring. Oleogels have been widely used in pharmaceutical and cosmetic area as drug delivery matrices, but their application in food matrices is scarce. These systems may be a promising option for the fat replacing in food matrices and controlled delivery of lipophilic bioactive molecules in the small intestine, with low water solubility and high chemical instability. In this study, flaxseed oil based oleogels were designed, using beeswax as organogelator, as vehicle for the oral delivery of curcumin, the active principle of turmeric. The oxidative stability of oleogel and the potential bioaccessibility of curcumin during *in vitro* gastrointestinal digestion were evaluated. Optimal curcumin (0.54%) and beeswax (9.12%) concentrations in the oleogel were determined according to a statistical design. The mechanical strength and oil binding capacity of oleogels obtained under optimal conditions were 20.5 ± 0.4 N and $90 \pm 1.2\%$, respectively. The incorporation of curcumin in the lipid matrix significantly increased the oxidative stability of the flaxseed oleogel evaluated by rancimat (protection factor 1.43 h).

Biography:

Begoña Giménez has completed her PhD at the age of 25 years from University of Zaragoza and postdoctoral studies from Spanish National Research Council. She is Research Associate at the University of Santiago (Chile). She has published more than 50 papers in reputed journals.

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