

# **Encapsulation of curcumin by complex coaservation method of casein and - cyclodextrin**

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**ABSTRACT:** Curcumin, is a hydrophobic polyphenol with antioxidant, anti-inflammatory and ant- tumorigenic properties. Its lack of water solubility and relatively low bioavailability set major limitations for its therapeutic use. Complex coaservation is a technique employs two biopolymers. The various kinds of materials can have different influence on properties of complex due to interactions among them. Polysaccharides and proteins are suitable for many industry applications since they are biocompatible and biodegradable. This work presents technique for loading curcumin in casein/ - cyclodextrin microcapsules by complex coaservation for the first time. To this aim, the best condition for complex coacervation of casein/ - cyclodextrin was first investigated using different concentrations and mixing ratios of materials at various pH values. The best yield of coaservates (93%) was at a 5:1 ratio of casein/ - cyclodextrin at optimum pH of 4.8. DLS and zeta potential measurements also show good result. The overall results indicated the high potential of complex coacervation of casein and - cyclodextrin for encapsulation of curcumin.

**Key words:** Complex coaservation, casein, - cyclodextrin, curcumin