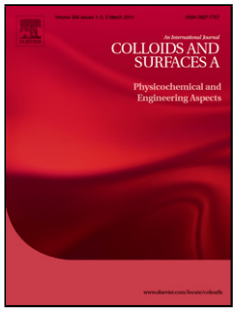
Accepted Manuscript



Title: Structural properties, in vitro release and radical scavenging activity of lecithin based curcumin-encapsulated inverse hexagonal (H_{II}) liquid crystals

Authors: Ling Wei, Xuepeng Li, Fumin Guo, Xin Liu, Zhongni Wang

PII: S0927-7757(17)31082-8
DOI: https://doi.org/10.1016/j.colsurfa.2017.11.071
Reference: COLSUA 22118

To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 18-9-2017
Revised date: 25-11-2017
Accepted date: 27-11-2017

Please cite this article as: Ling Wei, Xuepeng Li, Fumin Guo, Xin Liu, Zhongni Wang, Structural properties, in vitro release and radical scavenging activity of lecithin based curcumin-encapsulated inverse hexagonal (HII) liquid crystals, Colloids and Surfaces A: Physicochemical and Engineering Aspects https://doi.org/10.1016/j.colsurfa.2017.11.071

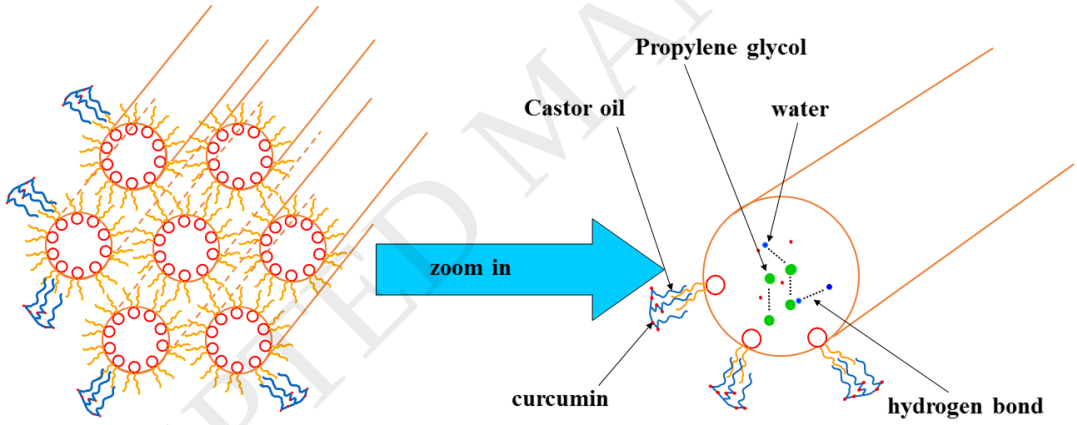
Structural properties, in vitro release and radical scavenging activity of lecithin based curcumin-encapsulated inverse hexagonal (H_{II}) liquid crystals

Ling Wei, Xuepeng Li, Fumin Guo, Xin Liu, Zhongni Wang*

College of Chemistry, Chemical Engineering and Materials Science, Shandong Normal University, Jinan 250014, P. R. China.

Corresponding author: Zhongni Wang
E-mail address: zhongniw@hotmail.com (Z. Wang)

Graphical abstract



Abstract

The main purpose of this study was to prepare a food grade inverse hexagonal (H_{II}) liquid crystals to encapsulate the poorly water soluble curcumin. H_{II} mesophases were constructed by soybean lecithin (SL), castor oil (Coil) and water and characterized by polarized light microscopy (POM), small angle X-ray scattering (SAXS) and rheology. A small amount of H_{II} phase was transformed into lamellar phase (L_{α}) after introducing 1,2-propylene glycol (PG). Furthermore, the H_{II} phase could be completely transformed into L_{α} phase with the decrease of Coil content. The mesophase with hexagonal array