

13<sup>TH</sup> INTERNATIONAL CONFERENCE ON

## ADVANCED MATERIALS AND NANOTECHNOLOGY

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**Alginate/ $\kappa$ -Carrageenan and alginate/gelatin composite hydrogel beads for controlled drug release of curcumin****Jinu George**

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Hydrogel beads based on natural polymers like alginate,  $\kappa$ -Carrageenan and gelatin represent an efficient scaffold for controlled hydrophobic drug delivery. We report herein the development and characterization different formulations of hydrogel systems based on the above mentioned polymers having adequate properties as drug delivery matrices. Different combinations of alginate/ $\kappa$ -Carrageenan and alginate/gelatin hydrogel beads were developed and drug release properties were compared using curcumin as a model drug. Alginate/ $\kappa$ -Carrageenan hydrogel beads with 50:50 weight ratio exhibited higher swelling and better drug release percentage than compared to other beads. Antibacterial activity of curcumin released from hydrogel beads against *B. cereus* was established by disc assay. Encapsulation efficiency and drug release behavior of different formulations of alginate/ $\kappa$ -Carrageenan and alginate/gelatin, indicates that the polymer blends synthesized possess considerable potential in pharmaceutical and medicinal applications.

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