Supporting Information

pH-sensitive Guar Gum Grafted Lysine-β-Cyclodextrin Drug Carrier for Controlled Releases on Cancer Cells

Rajendran Amarnath Praphakara, Murugan Jeyarajb, Sivaraj Mehnathb, Akon Higuchić, Deepalekshmi Ponnammad, Kishor Kumar Sadasivunid, Mariappan Rajana

a*Biomaterials in Medicinal chemistry laboratory, Department of Natural Products Chemistry, Madurai Kamaraj University, Madurai-625021, Tamil Nadu, India.
bNational Centre for Nanoscience and Nanotechnology, University of Madras, Chennai, India.
cDepartment of Chemical and Materials Engineering, National Central University, Jhong-Li, Taoyuan 320, Taiwan
dCentre for Advanced Materials, Qatar University, 2713 Doha, Qatar.

*Corresponding author.

E-mail: rajanm153@gmail.com; rajanm153.chem@mkuniversity.org (Mariappan Rajan)
Figure S1. $^1$H and $^{13}$C NMR spectrum of guar gum
Figure S2. $^1$H and $^{13}$C NMR spectrum of guar gum
Figure S3. $^1$H and $^{13}$C NMR spectrum of guar gum
Figure S5. TGA curves of GG-g-L-β-CD

Figure S4. TGA curves of β-CD-L
Figure S6. TGA curves of 5-FU loaded GG-g-L-β-CD

Figure S7. Particles size distribution of (a) 5-FU loaded GG-g-L-β-CD micro-carrier and (b) 5-FU loaded GG-g-L-β-CD polymer.
3.6 5-FU encapsulation studies

The encapsulation of 5-FU into the polymeric microspheres was done by solvent evaporation technique. The choice of encapsulation method was based on the solubility of both polymer and drug. In this approach, polymer was dispersed in water and 5-FU dissolved in ethanol. The encapsulation efficiency of 5-FU is shown in the Figure 8. The intensity of absorbance gradually decreases as an increase in time. It indicates that the successful encapsulation of 5-FU into GG-g-L-β-CD microcarrier.

Figure S8. Zeta potential of 5-FU loaded GG-g-L-β-CD polymer.

Figure S9. 5-FU encapsulation profile into GG-g-L-β-CD
Figure S10. Graph of MTT assay after 24 h showing the rate of viability of KB cells after exposure to different concentrations (0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 μg/ml) of the 5-FU loaded GG-g-L-β-CD