

Supplementary

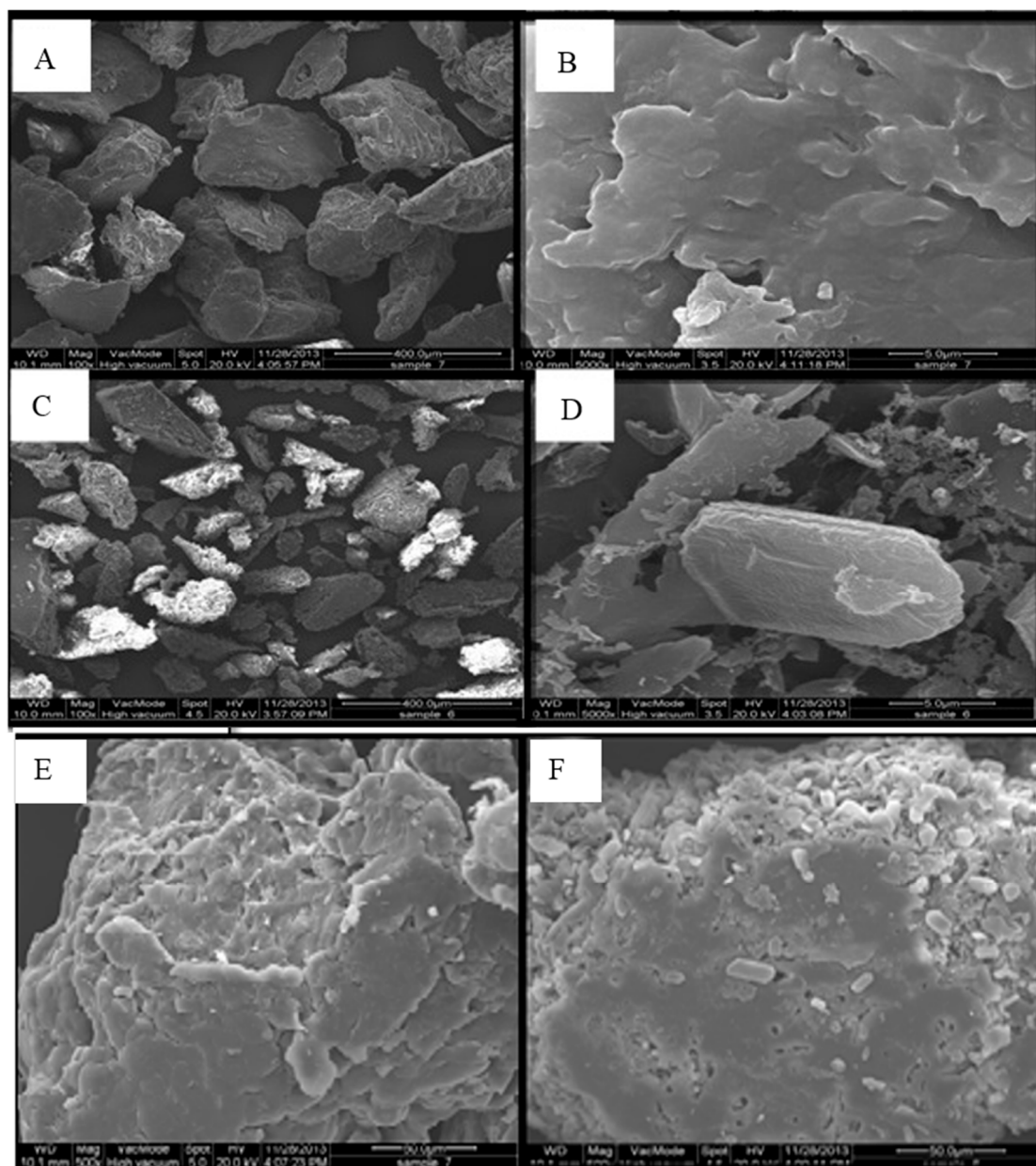


Figure S1. The figure shows the FESEM of unloaded (A,B) and 56% w/w m-INN loaded complex coacervate (C,D). Picture also showing the surface of unloaded (E) and m-INN loaded coacervates (F). Ibuprofen crystals are seen on the surface of drug loaded microcapsules (F).

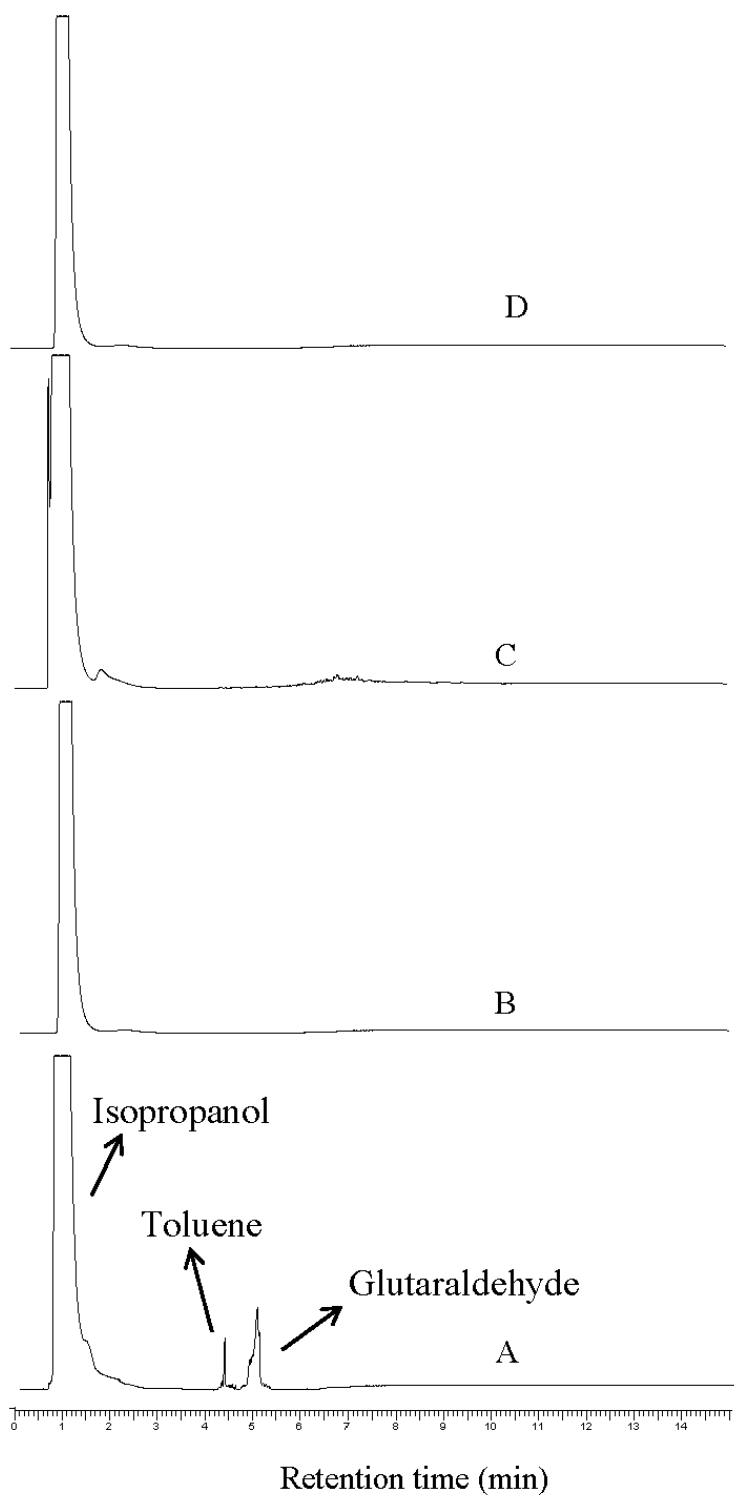


Figure S2. Gas chromatogram showing toluene and glutaraldehyde peak along with isopropanol (A), toluene saturated with glutaraldehyde in 1:1 ratio with the Propan-2-al solvent). The peaks of toluene and glutaraldehyde were absent in microcapsules prepared with 30 (B), 20 (C) and 10 (D) mL of toluene saturated with glutaraldehyde.

Table S1. Influence of different cross-linking agent on release kinetics and mechanism of 30% w/w m-INN CMSP-gelatin microcapsules.

Cross-Linking/ Kinetic Model	10 mL GST	10 mL GST + AlCl ₃	20 mL GST	20 mL GST + AlCl ₃	30 mL GST	30 mL GST + AlCl ₃
Zero order (<i>R</i>)	0.2449	0.5056	0.6098	0.6595	0.7273	0.7567
First order (<i>R</i>)	0.9672	0.9759	0.9831	0.9025	0.9165	0.9277
Higuchi (<i>R</i>)	0.9076	0.9573	0.9714	0.9659	0.9672	0.9795
Korsmeyer-Peppas (<i>R</i>)	0.9948	0.9828	0.9876	0.9883	0.9811	0.9889
Release exponent (<i>n</i>)	0.2257	0.2889	0.3193	0.3347	0.3541	0.3901
Release mechanism	Fickian	Fickian	Fickian	Fickian	Fickian	Fickian

Table S2. Influence of different drug loading on the release kinetics and mechanism of m-INN loaded CMSP-gelatin microcapsules cross-linked with 10 mL of GST.

Ibuprofen Loading/Kinetic Model	30% w/w	45% w/w	56% w/w
Zero order (<i>R</i>)	0.2449	0.7488	0.8139
First order (<i>R</i>)	0.9672	0.9379	0.9856
Higuchi (<i>R</i>)	0.9076	0.9604	0.9713
Korsmeyer-Peppas (<i>R</i>)	0.9948	0.9577	1.0000
Release exponent (<i>n</i>)	0.2257	0.2087	0.2015
Release mechanism	Fickian	Fickian	Fickian