Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

The drug release pattern

PVA-C and PVA-CD underwent an in vitro drug release profile using the direct suspension method. Each membrane underwent three separate sets of trials, and the average results were taken into account when making the evaluation. 200 mL of PBS solution with a 10 mM concentration was used to submerge membranes that were 2 cm 2 cm in size. The solution had a pH of 7.4 and was incubated at 37 oC in a shaker water bath. The experiment lasted for 10 days, and each day the amount of medication released was measured. 2 mL of sample was taken out and the research samples were replaced with the same volume in order to calculate the percentage of medication released. The medication was homogenised in 10 mL of ethanol after being concentrated in a centrifuge, and its concentration was determined using a UV-Visible spectrophotometer at 423 nm.

The results of drug release pattern are presented in Fig. SI1. The curcumin loaded alone to PVA matrix presented a faster release pattern compared the one loaded in carbon nanosphere. The slower drug release pattern of PVA-CD indicated the entrapment of curcumin in the carbon nanospheres and in the polymer matrix, which would help in the gradual wound healing process.

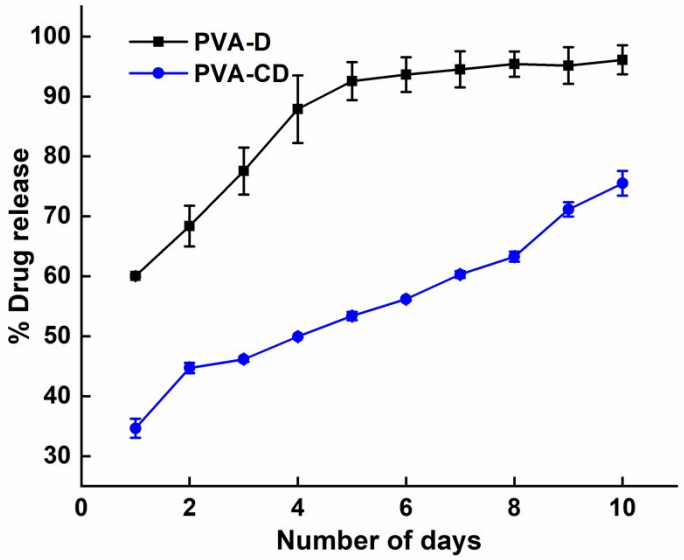

Figure SI1: Drug release pattern for PVA-D and PVA-CD for upto 10 days.