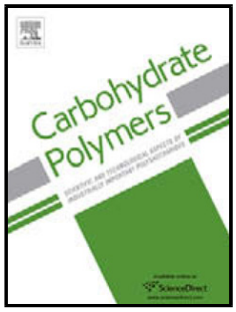

Title: pH responsive prodrug nanoparticles based on xylan-curcumin conjugate for the efficient delivery of curcumin in cancer therapy

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pH responsive prodrug nanoparticles based on xylan-curcumin conjugate for the efficient delivery of curcumin in cancer therapy

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Highlights

- pH-responsive xyl-cur prodrug NPs were prepared by dialysis membrane method.
- Xyl-cur prodrug NPs showed pH-responsive drug released behavior.
- Xyl-cur prodrug NPs are biocompatible and safe for intravenous administration.
- Xyl-cur prodrug NPs demonstrated higher cytotoxic activity than free curcumin.

Abstract

In the present study, novel pH-responsive prodrug nanoparticles based on xylan-curcumin (xyl-cur) conjugate were developed to enhance the therapeutic efficacy of curcumin in cancer therapy. The synthesis of xyl-cur conjugate (prodrug) was confirmed by FT-IR, ^{1}H-NMR, UV-vis and fluorescence spectroscopy. The xyl-cur prodrug was subsequently self-assembled in to