

عنوان مقاله:

Trans Aconitic acid based biopolymeric hydrogel with Antibacterial, Antioxidant and Anticancer property

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خلاصه مقاله:

A novel biopolymeric hydrogels have been synthesized by two step process using trans aconitic acid, ethylene glycol and glutamic acid without a cross linker by organic solventless approach with different monomer ratios in a eco friendly manner. The nature of bonding and structural identification of biopolymeri hydrogels were characterized by analytical techniques like FT-IR. The hydrogel shows a pH sensitive swelling behaviour with increased swelling in acidic media followed by gradual decreased in basic media. The thermogram (TGA) of the hydrogel shows two stage of degradation. The obtained hydrogels were also subjected to antibacterial activity against gram positive S.aureus and gram negative E.Coli by using zone inhibition method, and antioxidant activity by DPPH radical assay at different concentration compared with the standard Ascorbic acid and anticancer activity by MTT assay using HT29 colan cancer cell line. The results exhibit excellent antibacterial, antioxidant and anticancer property with respect to their standards respectively.

کلمات کلیدی:

Keywords : pH - sensitive hydrogel, Trans aconitic acid -, Glutamic Acid, Antioxidant Activity, Cytotoxicity

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