

P13. POLY (N-VINYL-2-PYRROLIDONE) (PVP) AND NEOMYCIN HYDROGELS AS WOUND DRESSING OBTAINED BY GAMMA IRRADIATION

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Poly (N-vinyl-2-pyrrolidone) (PVP), poly (ethylene glycol), agar and neomycin hydrogel containing has been prepared in order to evaluate its ability to release drugs. Composite hydrogel was obtained by gamma irradiation, 25 kGy. The physical and chemical properties of the hydrogels were systemically investigated as gel fraction, swelling and in vitro cytotoxicity. The detailed structures of the hydrogels were determined by FTIR. Antimicrobial activity of the hydrogel was examined. The antibiotic drug release was determined by Liquid Chromatography-Mass Spectrometry

References

- [1] Gainza G., Villullas S., Pedrz J.L.P., Hernandez R.M., Igartua M. Advances in drug delivery systems (DDS) to release growth factors for wound healing and skin regeneration. *Nanomed-Nanotechnol* 11 (2015) 1551-1573.
- [2] Oertel R., Renner U., Kirch W. Determination of neomycin by LC-tandem mass spectrometry using hydrophilic interaction chromatography. *J Pharm Biomed Anal* 35 (2004), 633-638.
- [3] Kadlubowski S. Radiation-induced synthesis of nanogels based on poly(N-vinyl-2-pyrrolidone) - A review. *Radiat. Phys. Chem.* 102 (2014), 29-39.