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**Design of sterile tragacanth gum-alginate-poly(AAm) based hydrogels by radiation induced crosslinking for use in wound dressing application**

Keeping in view the inherent wound healing ability of polysaccharides, tragacanth gum and sodium alginate, in the present work, an attempt has been made by my research group to design the antibiotic drug ‘gentamicin’ and analgesic drug ‘lidocaine’ loaded sterile hydrogel dressings by radiation induced crosslinking, for simultaneous care of wound infection and wound pain. These polymers were characterized by cryo-SEM, AFM, FTIR, XRD, <sup>13</sup>C-NMR, and swelling studies. Drug release profile and other biomedical properties like haemolysis, mucoadhesion, water vapor permeability, microbial penetration, antioxidant activities and oxygen permeability were also determined. The results showed that wound fluid absorption and slow drug release ability of hydrogel films. These polymer films were found to be blood compatible, permeable to water vapor and O<sub>2</sub>, and impermeable to microorganism. Further, the synergic effects of antimicrobial and antioxidant nature of hydrogel dressings will make them suitable candidate for wound management.

**Biography**

Baljit Singh, (PhD) is a Professor of Chemistry in Himachal Pradesh University- Shimla-HP-India. He has about 19 years research and teaching experience. He has published more than 100 research papers in reputed journals and has guided seven PhD/20 MPhil students in the field of Polymer, Hydrogels and Drug Delivery Devices. He has handled many research projects. Presently, he is Professor and Chairman in the Department of Chemistry at Himachal Pradesh University-Shimla.

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