
Evaluation the effect of antibacterial activity fennel extract immobilized on polymer substrate

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Abstract: **Introduction:** Fennel (*Foeniculum vulgare* Mille) is a herbal , fragrant and stable plant in umbel family that uses in different Iran areas as food and drug and todays has planted and adapted in many world areas. Fennel has expand using to make drugs, food and cosmetic . Study of antimicrobial effect of plant extracts and natural complex has indicated that plants are potential resources of of anti-infectional factors that has followed by new coplexes introducing. Regarding to Fennel different reported antimicrobial effects studied its seed ethanol extract antibactrial effect. Hydrogels are products that could absorb much water without solving. This property is due to water liking polymer chains physical or chemical web making. Strong ultrasonic waves use for polymerisation reactions and starter absence. Hydrogels structurally cassifiy to anion , cation and ampholytic. Most hydrogels respond environmental stimulants such as PH , ion power, solvent components ratio , light and electrical field. Such unique properties have created a wide range of applications to use a hydrogel effectively. **Aim:** This study aims to investigate loaded Fennel extract antimicrobial property on polymeric bed. **Materials and methods:** In this study used microbial cases in pathology labrotary , hydrogel sample and Fennel extract. **Results:** Fennel extract in not grow test showed antimicrobial property against *Staphylococos oreus*, *Ishershea coli* , *Salmonella* but not *Sodomonas*. Synthetical factors affect on hydrogel structure and optimum condition to synthesize hydrogel is 1-2g Chitosan and 0.1g Acril amid and 60-80 centigrades. At present study as increasing loading time increases loaded extract rate in hydrogel and then almost stops. Loaded extract in hydrogel has gradual releasing and grow and die control property against *Staphylococs oreus* and *Ishershea coli* and *Salmonella* but not *Sodomonas*. **Conclusion:** This research results indicate that Fennel extract and hydrogel have antimicrobial property and if tow

materials use together find more antimicrobial property and hydrogel due to have Chitosan also has antibacterial property. Fennel extract and hydrogel could use instead of antibiogram discs in infected patients in E.coli , staphylococ, salmonella. Regarding to gradual examining releasing could conclude that uses hydrogel in pharmacy industry to control drug releasing time. Loaded hydrogel in Fennel extract could uses as regional ointment for patients with bedsore. Keywords: Fennel extract , hydrogel, E.coli , salmonella, sodomonas , staphylococ.

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