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Preparation and characterization of chitosan-co-hyaluronic acid cryogels

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Hydrogels comprised of cross-linked polymer networks that have hydrophilic homopolymer or copolymer and these networks have a high affinity for water because of having hydrophilic groups. Hydrogels can be derived from synthetic and natural polymer. Cryogel is one of the new types of polymeric gel that has a significant potential in biotechnology. Cryogel that have elastic structure is used in tissue engineering applications. Cryogel formation occurs below the freezing point of the solvent; thus, a major portion of the solvent freezes creating interconnected ice crystals, the polymer precursors that have been in liquid unfrozen form are polymerized to have network around the ice crystals. Frozen crystals solvent acts as pore-forming agent. After the polymerization, when frozen reaction mixture is cooled to room temperature, ice crystals melt and obtained network structure that have macroporous polymers. In this project, cryogels of chitosan-hyaluronic acid's efficiency in tissue engineering applications as scaffold has investigated. Therefore, firstly homopolymers of chitosan and hyaluronic acid cryogels have synthesized separately, then copolymer of chitosan and hyaluronic acid cryogels were prepared to improve mechanical and biomaterial properties, to use as scaffold for tissue engineering and to examine cell compatibility.

Biography

Tugce Kutlusoy has completed her Bachelor's and Master's degree from Marmara University. She is a graduate student of Marmara University.

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