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Preparation of Carboxymethyl cellulose based-hydrogels using polycarboxylic acids

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Starch is one of the most abundant polysaccharides in the nature, which is composed of a mixture of amylose and amylopectin. Sodium Carboxymethyl Cellulose (CMC) is an anionic water-soluble polymer derivative. In this study, the preparation of superabsorbent hydrogels has been investigated with sodium carboxymethyl cellulose and Dialdehyde Starch (DAS). The dialdehyde starch was synthesized from the oxidation of the starch using sodium periodate to improve the functionality of the starch. In addition, hydrogels were prepared by using citric acid and succinic acid as a non-toxic and biodegradable crosslinking agent at various ratios. When heated, citric acid will dehydrate to form an anhydride, which will react with hydroxyl group of polysaccharide. The chemical structure of hydrogels was characterized using FT-IR spectroscopy. The swelling behavior of hydrogels was investigated in distilled water and 0.9% NaCl solution.

Biography

Dahyun Kim graduated from Seoul National University in 2016. She is Master course student of Department of biosystems and biomaterials science and engineering, Seoul National University.

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