

Chemically Synthesized Biomimetic Underwater Adhesive

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One of the unique structural features of Mussel adhesive proteins (MAPs) is the presence of L-3,4-dihydroxyphenylalanine (DOPA) which is believed to be responsible for the adhesive characteristics of MAPs. For the underwater adhesives with biocompatible and more flexible bonds using biomimetic adhesive groups, DOPA-like adhesive molecules were modified with cyanoacrylates to obtain different repeating units and chain length copolymers. The goal of this work is to incorporate functional DOPA analogues chemically synthesized into a gel network by radical copolymerization and /or polyblending for developing a chemically synthesized underwater natural adhesives (UWA) with more practical application in initial adhesion rate/ adhesion strength.