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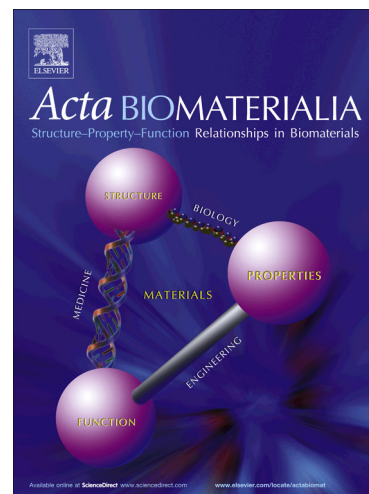
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# Tuneable Denture Adhesives using Biomimetic Principles for Enhanced Tissue Adhesion in Moist Environments

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## Abstract

Nature provides many interesting examples of adhesive strategies. Of particular note, the protein glue secreted by marine mussels delivers high adhesion in wet and dynamic environments owing to existence of catechol moieties. As such, this study focuses on denture fixatives, where a non-zinc-containing commercial-based formulation has been judiciously modified by a biomimetic catechol-inspired polymer, poly(3,4-dihydroxystyrene/styrene-*alt*-maleic acid) in a quest to modulate adhesive performance. *In vitro* studies, in a lap-shear configuration, revealed that the catechol-modified components were able to enhance adhesion to both the denture base and hydrated, functional oral tissue mimic, with the resulting mode of failure prominently being adhesive rather than

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