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Bioinspired Supramolecular Engineering of Self-Assembling Immunofibers for High Affinity Binding of Immunoglobulin G

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ABSTRACT: Many one-dimensional (1D) nanostructures are constructed by self-assembly of peptides or peptide conjugates containing a short β -sheet sequence as the core building motif essential for the intermolecular hydrogen bonding that promotes directional, anisotropic growth of the resultant assemblies. While this molecular engineering strategy has led to the successful production of a plethora of bioactive filamentous β -sheet assemblies for interfacing with biomolecules and cells, concerns associated with effective presentation of α -helical epitopes and their function preservation have yet to be resolved. In this context, we report on the direct conjugation of the protein A mimicking peptide Z33, a

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