Structural Biology of Curculin, a Taste-Modifying Protein

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Summary
Curculin from Curculigo latifolia is a unique protein that has both sweet-tasting and taste-modifying activities. We found that these activities were expressed solely by a novel heterodimeric isoform of curculin. We established the methods for production of this active isoform by refolding techniques using bacterially expressed curculin subunits. Furthermore, our mutational and structural data revealed that the curculin heterdimer exhibits sweet-tasting and taste-modifying activities through its partially overlapping but clearly distinct molecular surfaces.