

Supporting Information

Peptide-Functionalized Silk Fibers as a Platform to Stabilize Gelatin for Use in Ingestible Devices

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Supporting Information

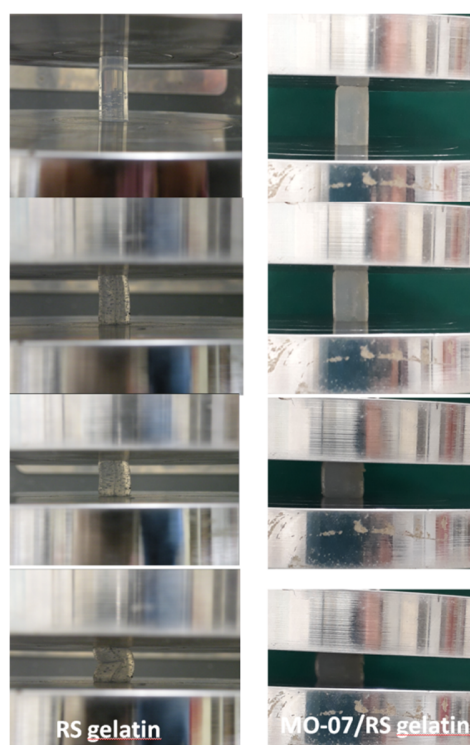


Figure S1. Photographs of the RS gelatin and MO-07/RS gelatin composite during the compression test.

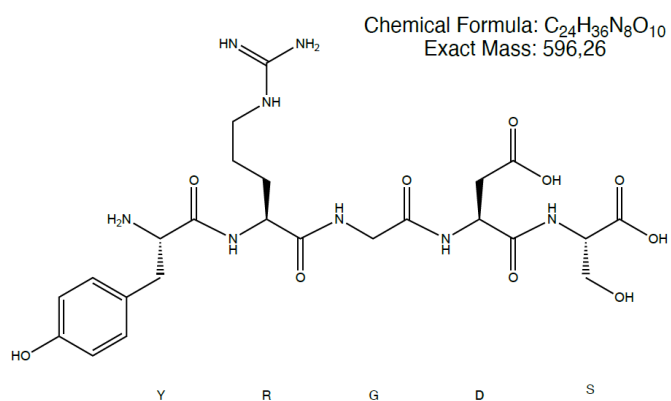


Figure S2. Sequence, chemical formula, and exact mass of peptide MO-07.

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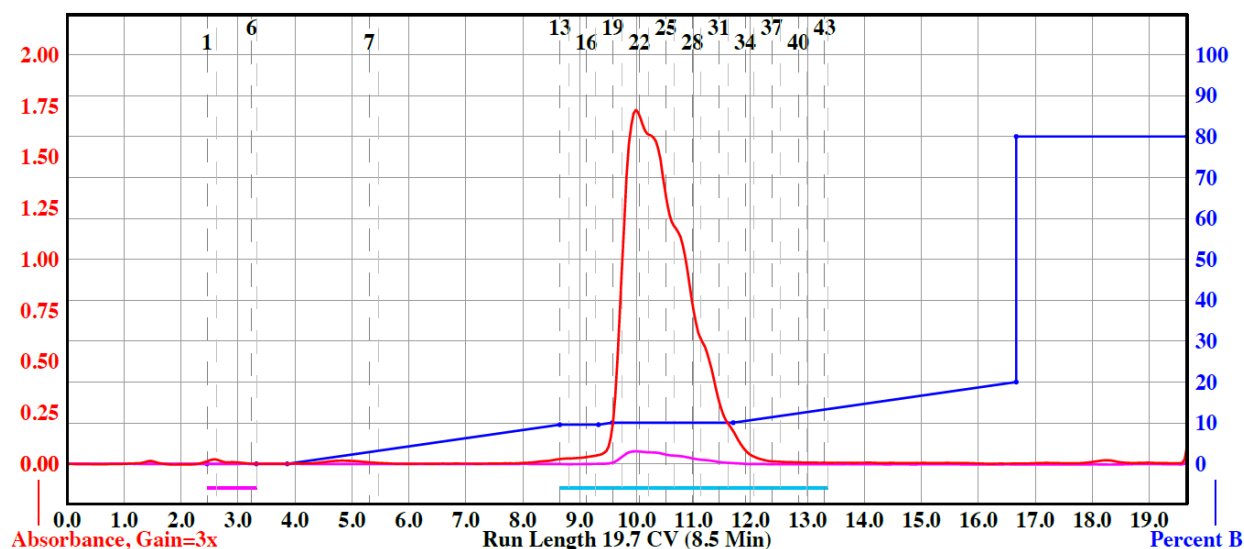


Figure S3. Chromatogram of MO-07 purification. Instrument used: CombiFlash® NextGen 300+ Teledyne ISCO. Column used: Teledyne ISCO RediSep® C18 Aq 15.5 g gold column. Eluents system: solvent A) 0.1% v/v TFA milliQ H₂O, solvent B) 0.1% v/v TFA ACN. Gradient used: from 0% to 20% of B and lasts 10 CV.

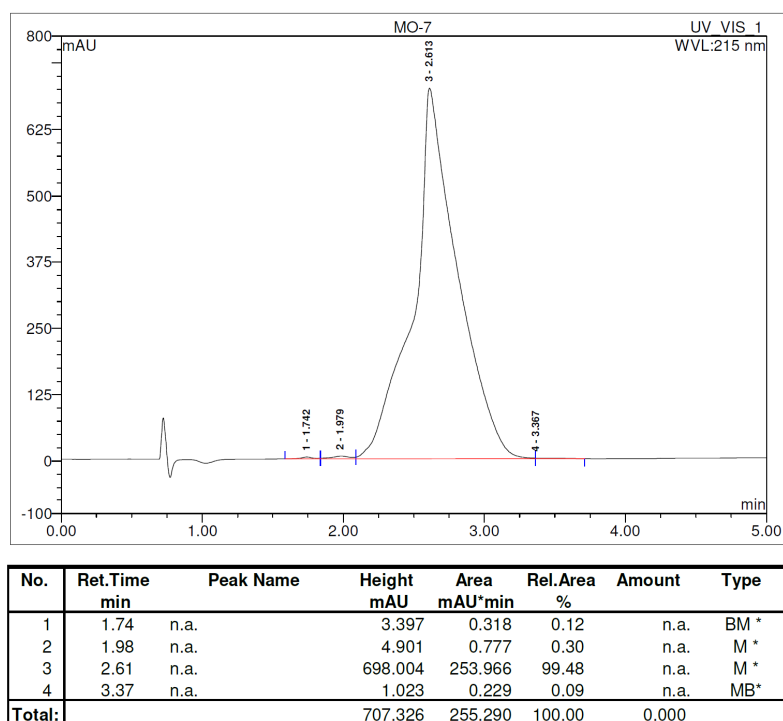


Figure S4. Chromatogram of MO-07 after purification. Instrument used: UHPLC Thermo Dionex Ultimate 3000. Column used: Acquity column UPLC CSH™ C18 (1.7 μ m, 2.1 x 100 mm). Eluents system: solvent A) 0.1% v/v TFA milliQ H₂O, solvent B) 0.1% v/v TFA ACN. Gradient used: from 0.1% of ACN to 5% CAN in 5 minutes. Acquisition λ : 215 nm.

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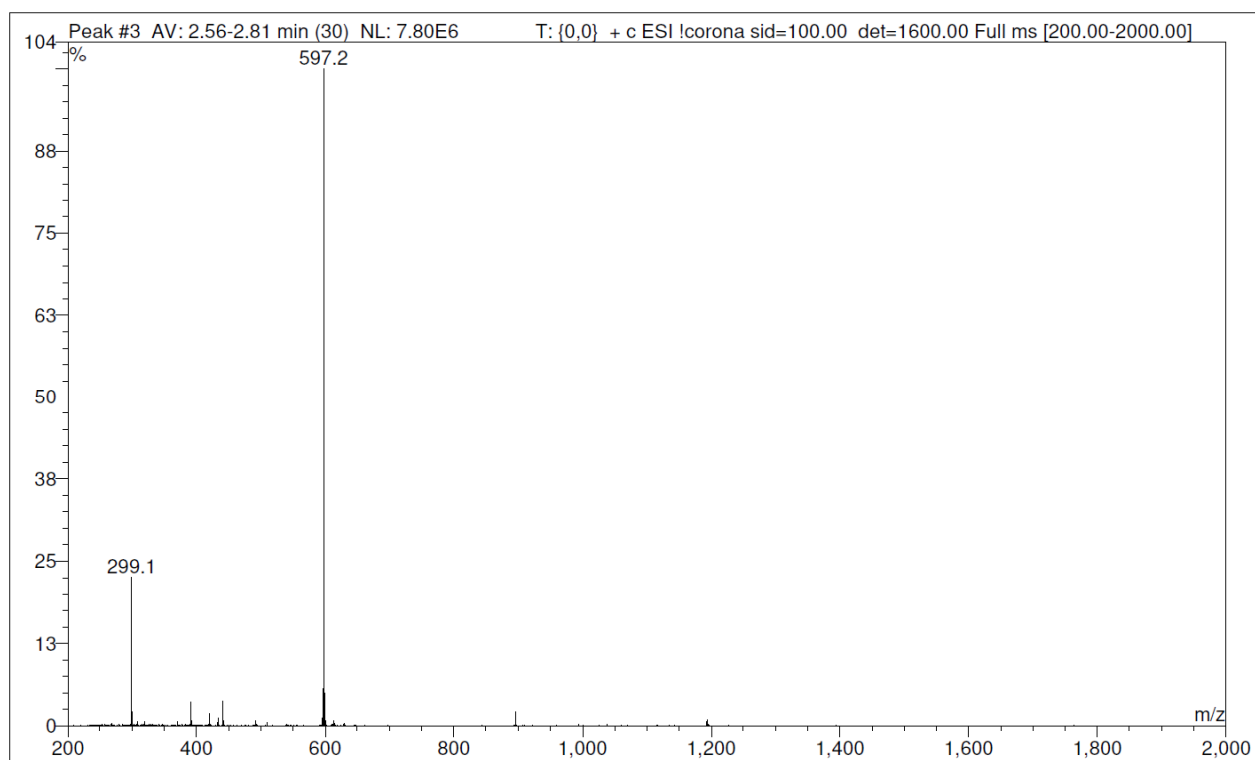


Figure S5. Mass spectrum of peptide MO-07 after purification. Instrument used: MSQ plus single quadrupole ESI mass spectrometer, Thermo Scientific.

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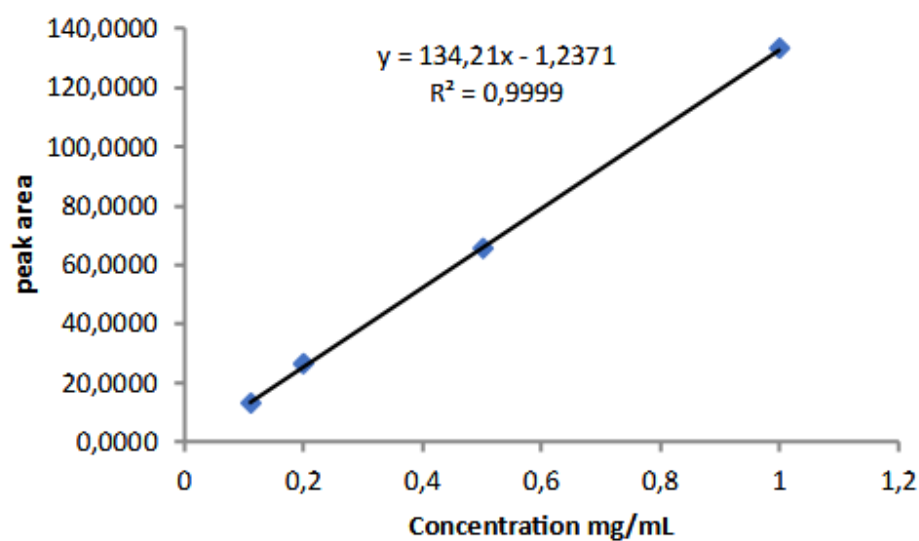


Figure S6. Calibration curve for peptide MO-07.

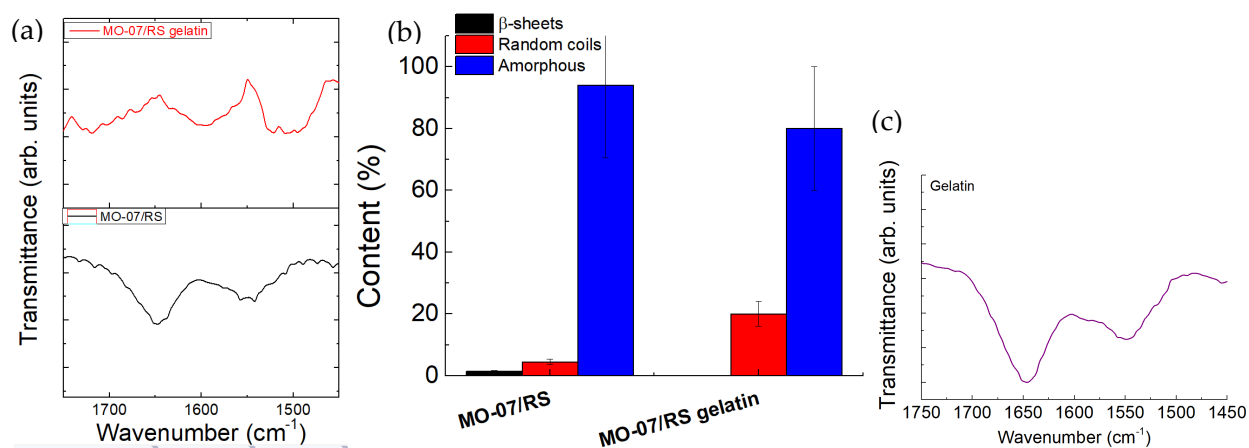


Figure S7. (a) FTIR spectra for MO-07/RS and MO-07/RS gelatin composite with (b) the structural conformation ratios derived from deconvoluted FTIR spectra. (c) FTIR spectrum of neat gelatin.