

Supplementary information

Title:

Construction of hollow MOF with high sedimentation performance and co-immobilization of multi-enzyme for preparing rare ginsenoside CK

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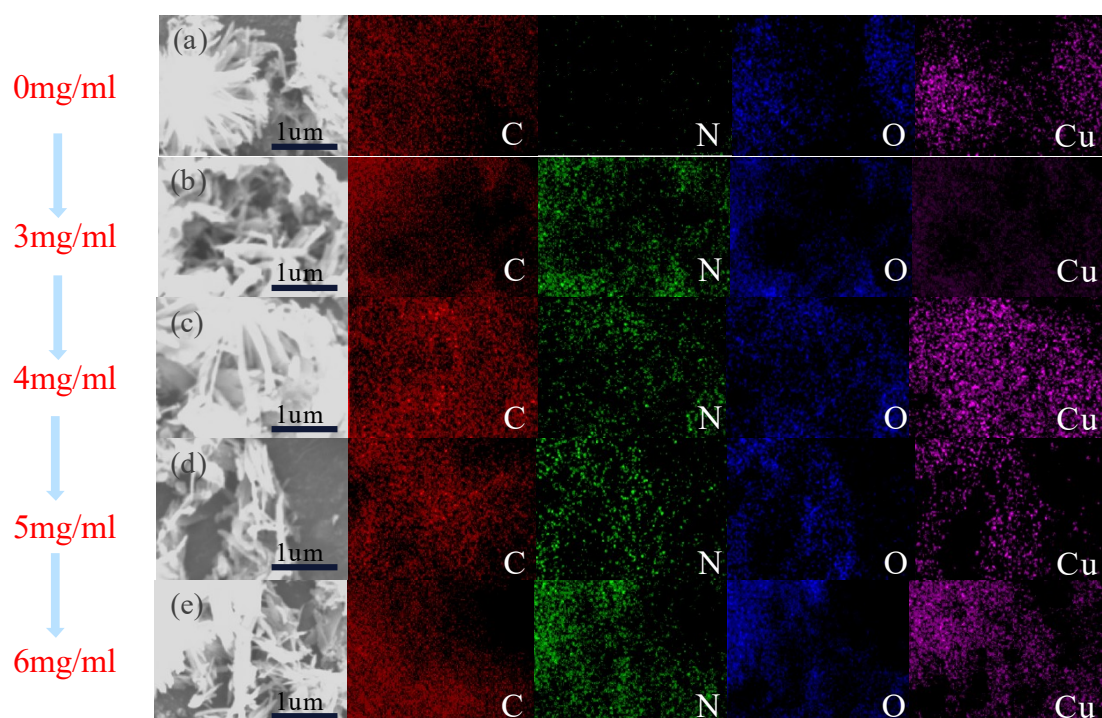


Fig. S1. SEM images and EDS elemental mapping images of Sna&β-G@Cu²⁺-NaDC hydrogels (a-e) with varying protein concentrations (0, 3, 4, 5 and 6 mg/mL).

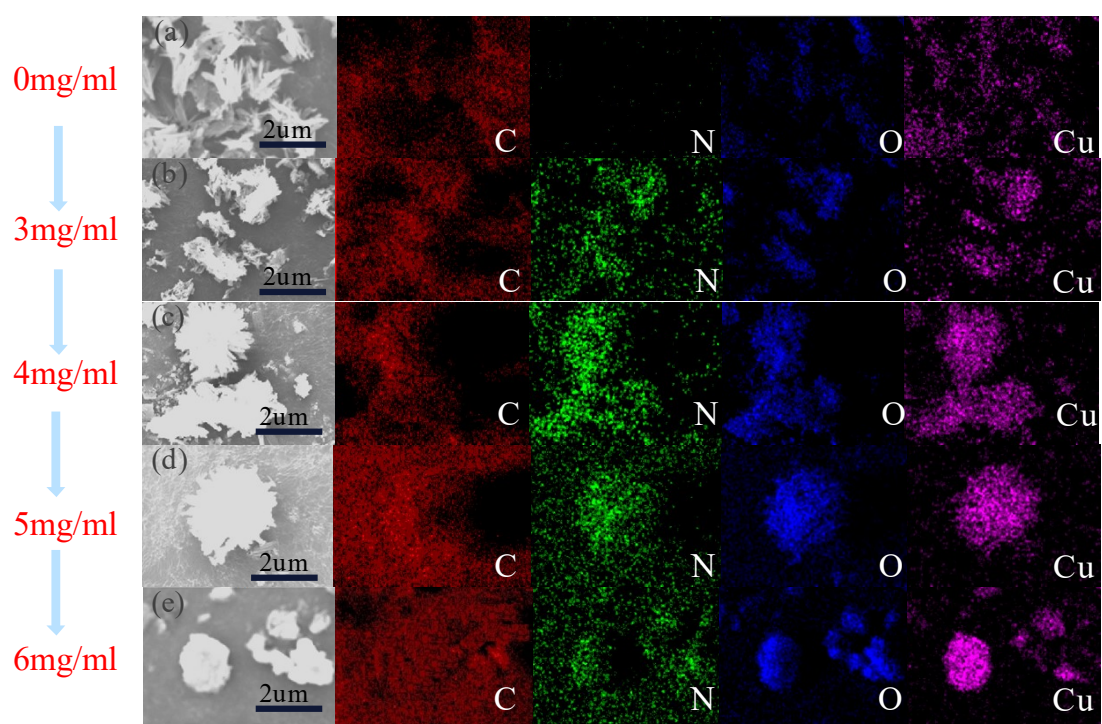
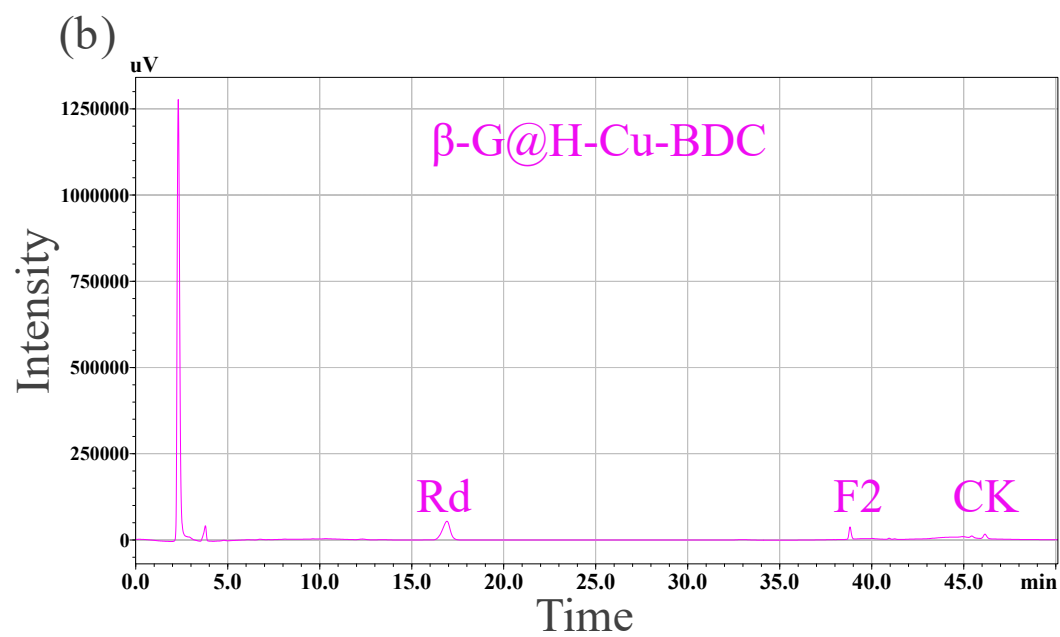
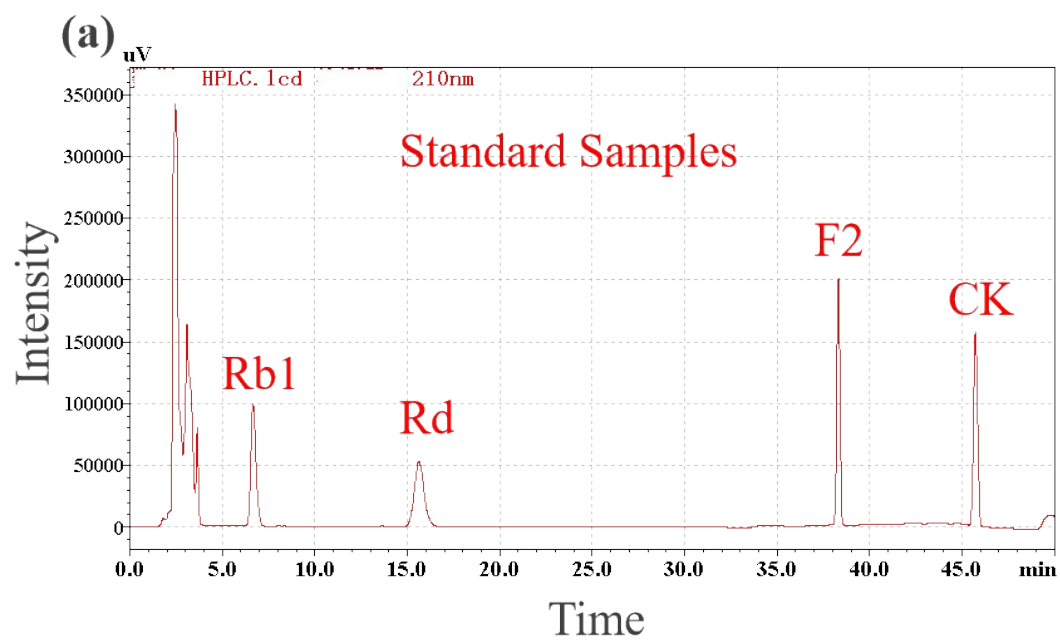
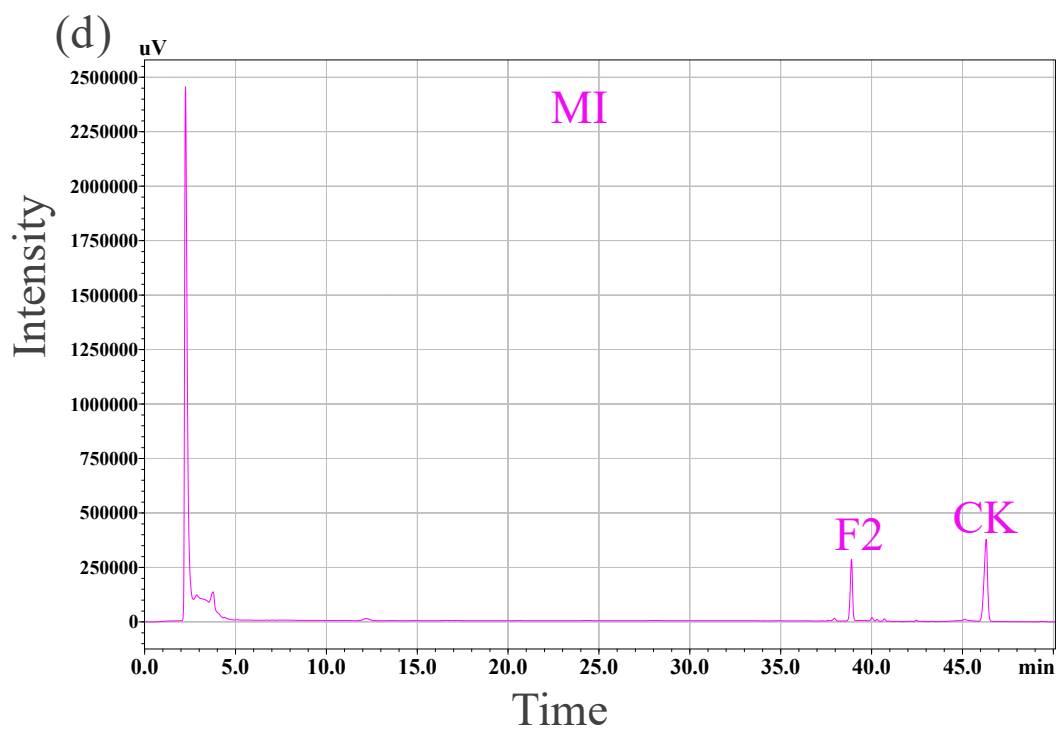
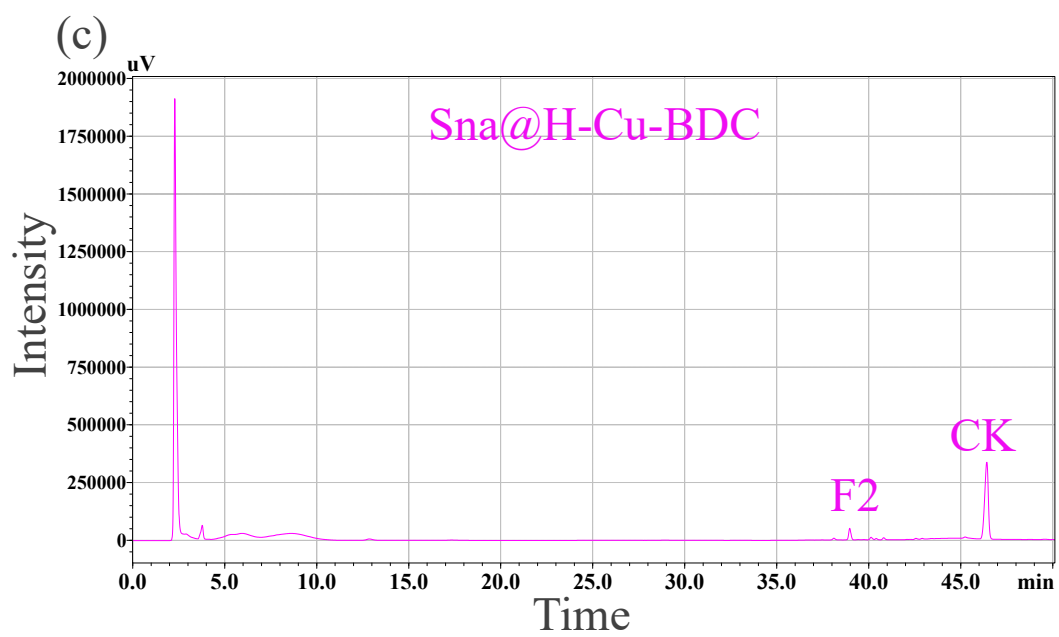


Fig. S2. SEM images and EDS elemental mapping images of Sna&β-G@H-Cu-BDC biocomposites (a-e) with varying protein concentrations (0, 3, 4, 5 and 6 mg/mL).





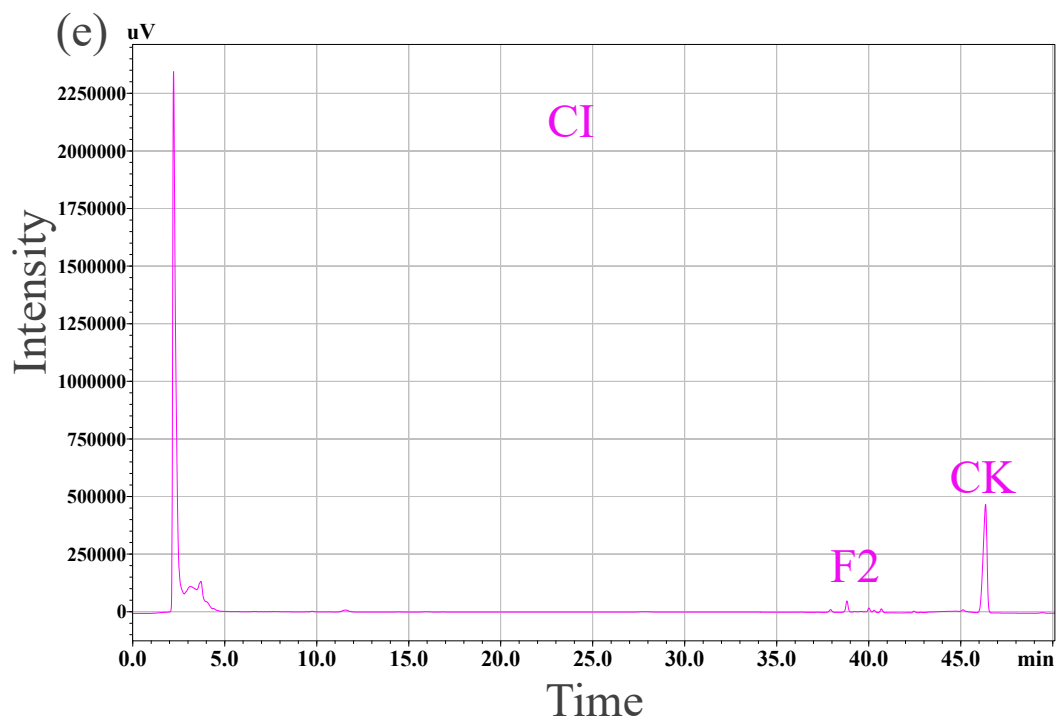


Fig.S3. HPLC chromatogram of the standard samples of ginsenoside Rb1, Rd, F2 and CK (a) and conversion products of Rb1 by β -G@H-Cu-BDC (b), Sna@H-Cu-BDC(c), MI (d) and CI (e) at Ph=4.5, 50 °C, the ratio of Rb1to immobilized enzyme of 1:2 for 48 h.