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SUPPORTING INFORMATION: Biomimetic SERS substrate: Peptide Recognition Elements for Highly Selective Chemical Detection in Chemically Complex Media

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FIGURES

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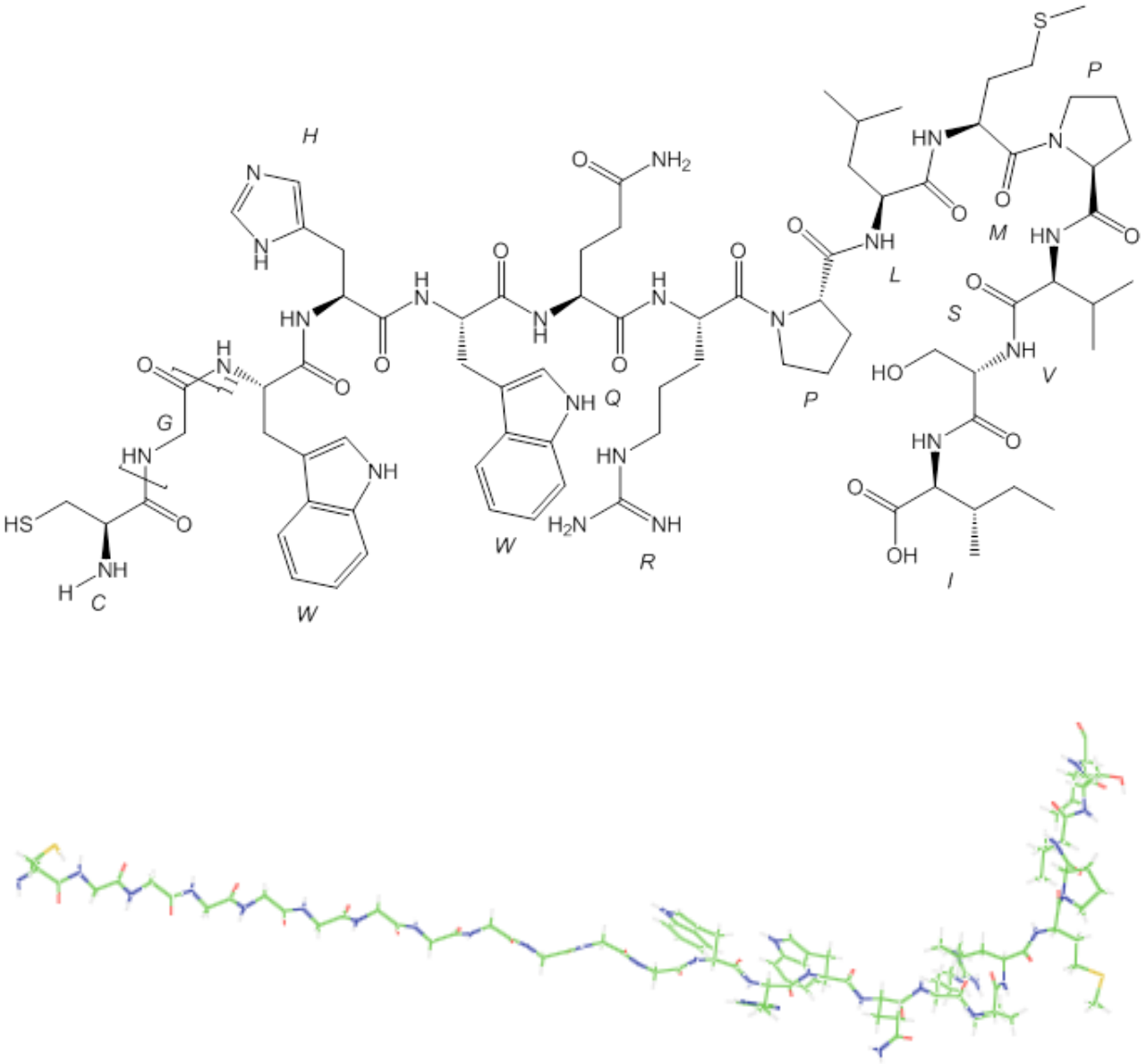

Figure S1. Chemical structure and 3D molecular structure of TNT-binding peptide of sequence CGGGGGGGGGGGWHWQRPLMPVSI.

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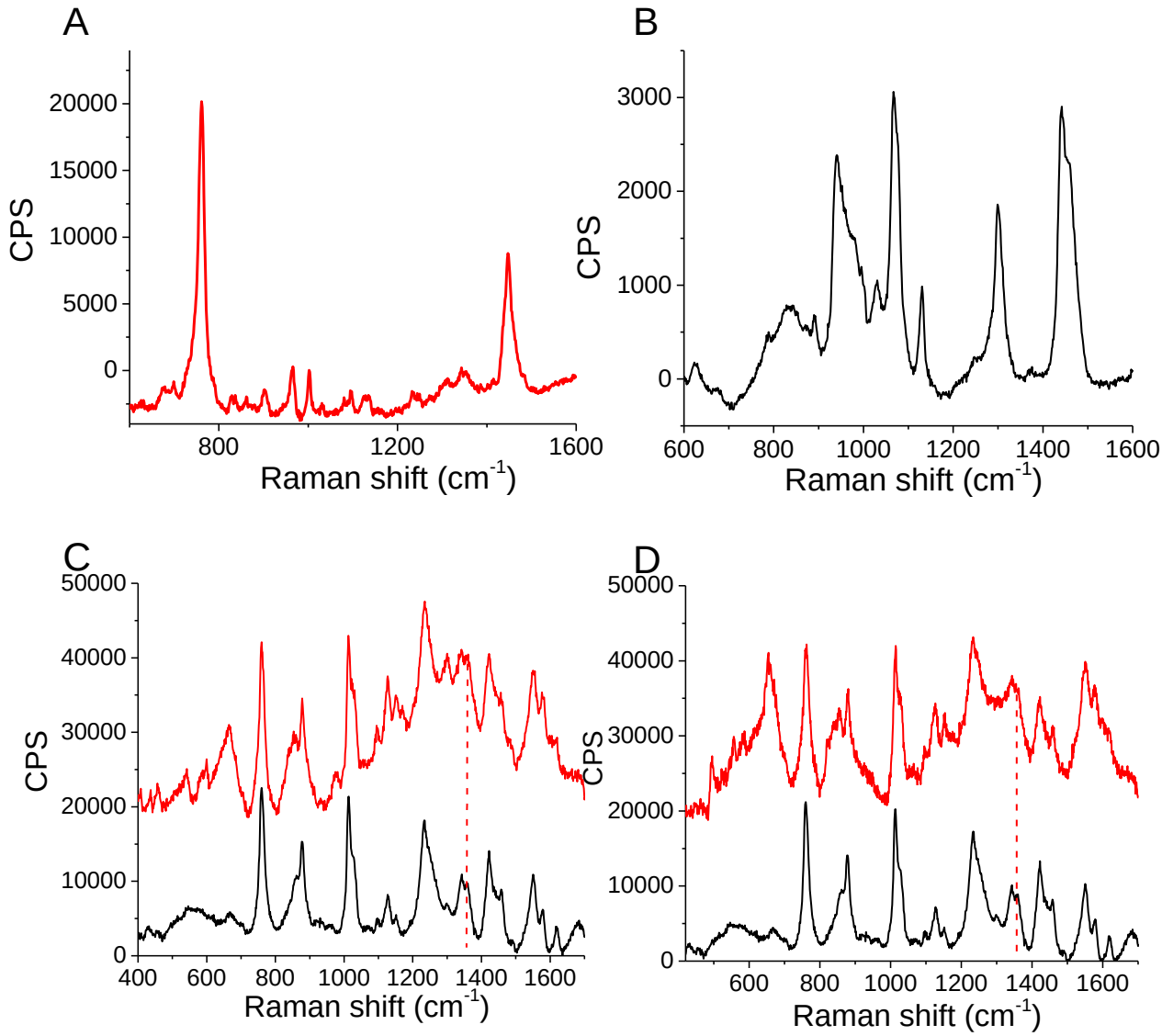

Figure S2. (A) Raman spectra acquired from the paper substrate adsorbed with AuNR conjugated with peptide (CWHRYPSYLWGVI) that exhibits substantially weaker TNT-binding capability after exposure to 1 mM TNT. (B) Raman spectra of commercially available shampoo drop-casted on silicon. (C) Raman spectra of biomimetic plasmonic paper before and after exposure to 30 pg/cm^3 of TNT vapour for 1 hour. (D) Raman spectra acquired of the biomimetic plasmonic paper before and after exposure to 10 pM TNT in 1 mg/ml shampoo solution.

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Table S1. Corresponding Raman bands of TNT-binding peptide.

Raman shift (cm^{-1})	Origin
670	C-S stretching
878	Tryptophan
1012	C-C aromatic ring stretching
1123	C-C, C-N stretching
1234-80	Amide III & CH_2 wagging vibrations from glycine backbone
1266	Tryptophan
1302	Amide III
1341	Tryptophan
1360	Tryptophan
1552	Tryptophan
1580	C-C stretching
1619	Tryptophan