Supporting Information

Hydrogen Sulfide Inhibits Amyloid Formation

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Materials and methods

Non-resonance Raman experiments

We observed a Raman signature of persulphide (RSSH) and confirmed that RSH does not form in Cysteine solution in the presence of H_2S. Cysteine was incubated in pH 7.5 PBS buffer in the presence of H_2S at room temperature for 90 minutes. The solution contained 50 mM cysteine, 250 mM H_2S that corresponded to the molar ratio of 1:5 (Cys:H_2S). Powder samples for non-resonance Raman spectroscopic measurements were prepared by drying the corresponding solutions under a nitrogen flow at room temperature. The vast majority of solvent evaporated during this procedure. Raman spectra (785-nm excitation) of HEWL powder samples and cysteine were recorded using a Renishaw inVia confocal Raman spectrograph equipped with a research grade Leica microscope and 50x objective (numerical aperture 0.55). Five accumulations of 30 s each were collected for each sample in the range of 400-1800 cm^{-1}. Wire 4.0 software was used for data collection. A laser power of approximately 12 mW was used to avoid sample photo-degradation.

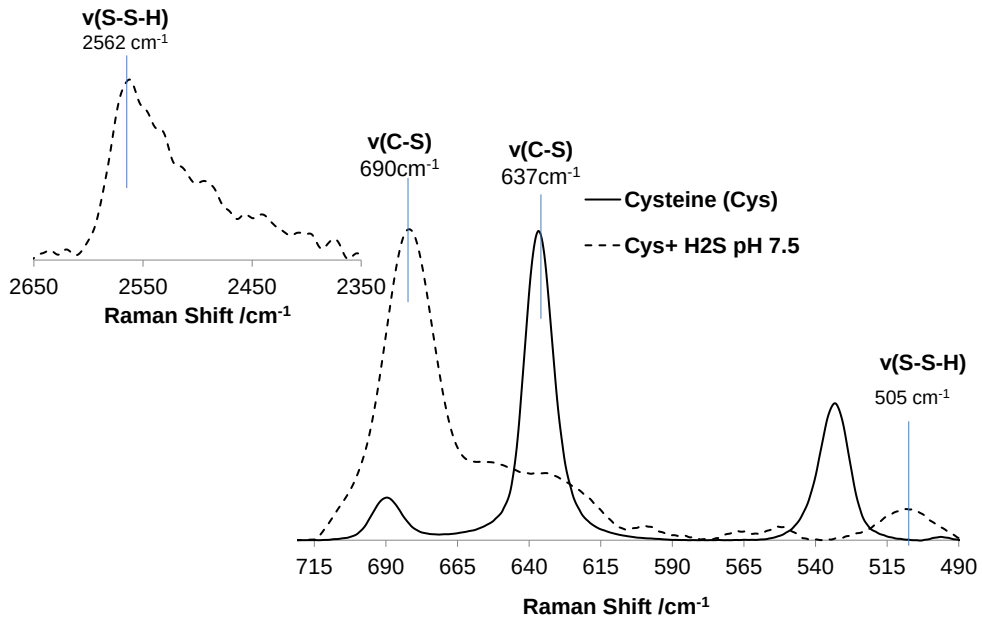

Figure S1. Non-resonance Raman spectra of pure cysteine (solid line) and that in presence of H_2S at pH 7.5 (dotted line). Insert: Raman spectrum of Cysteine in the presence of H_2S (cysteine persulfide).

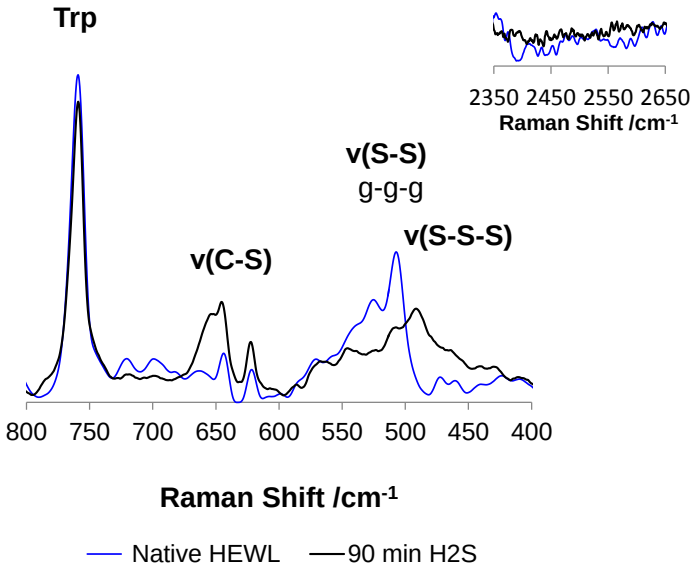

Figure S2. Non-resonance Raman spectra of native HEWL (blue line) and HEWL incubated with H_2S at pH 2 and 60 °C for 90 minutes (black line). Insert: Raman peak corresponding to SH vibration is not evident in the spectra of native HEWL and HEWL incubated with H_2S.