

Electronic Supplementary Information

Labelling of Endogenous Target Protein via N-S Acyl Transfer-Mediated Activation of *N*-Sulfanylethylamide

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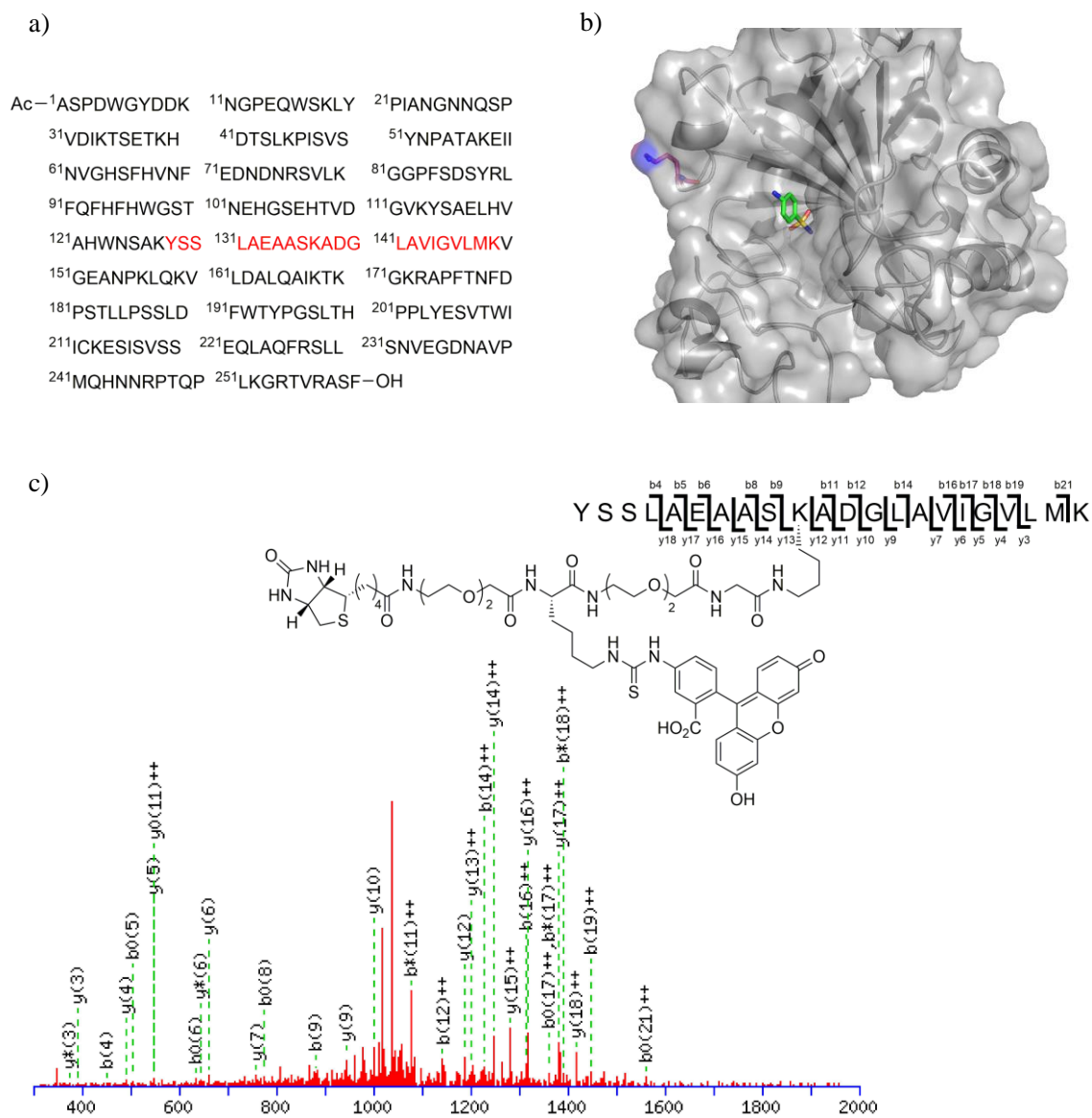
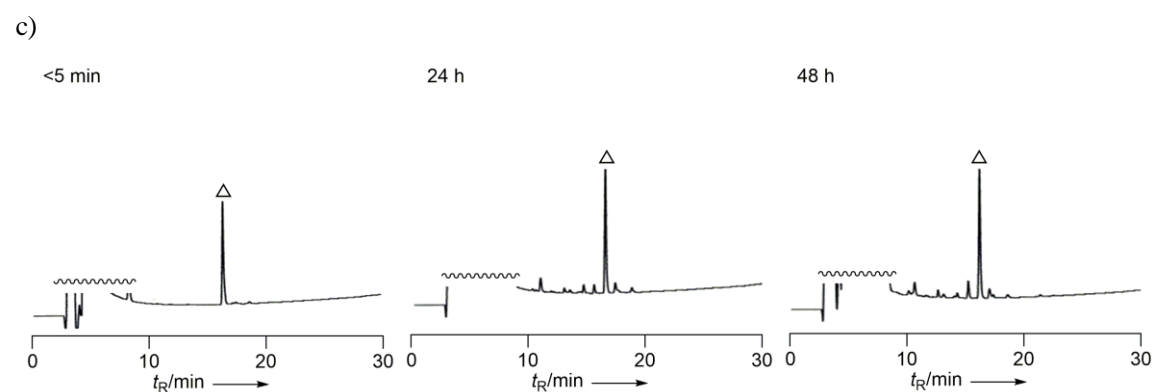
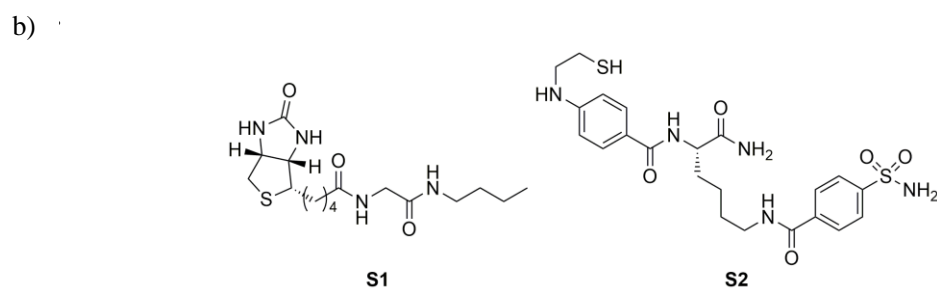
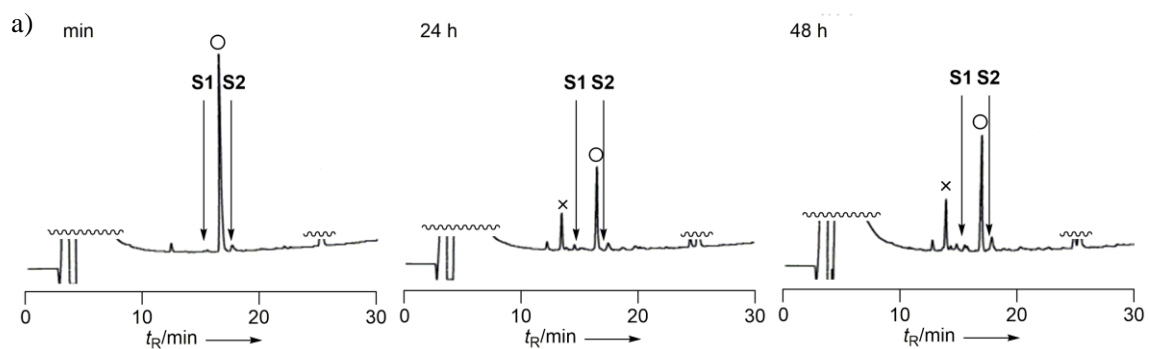
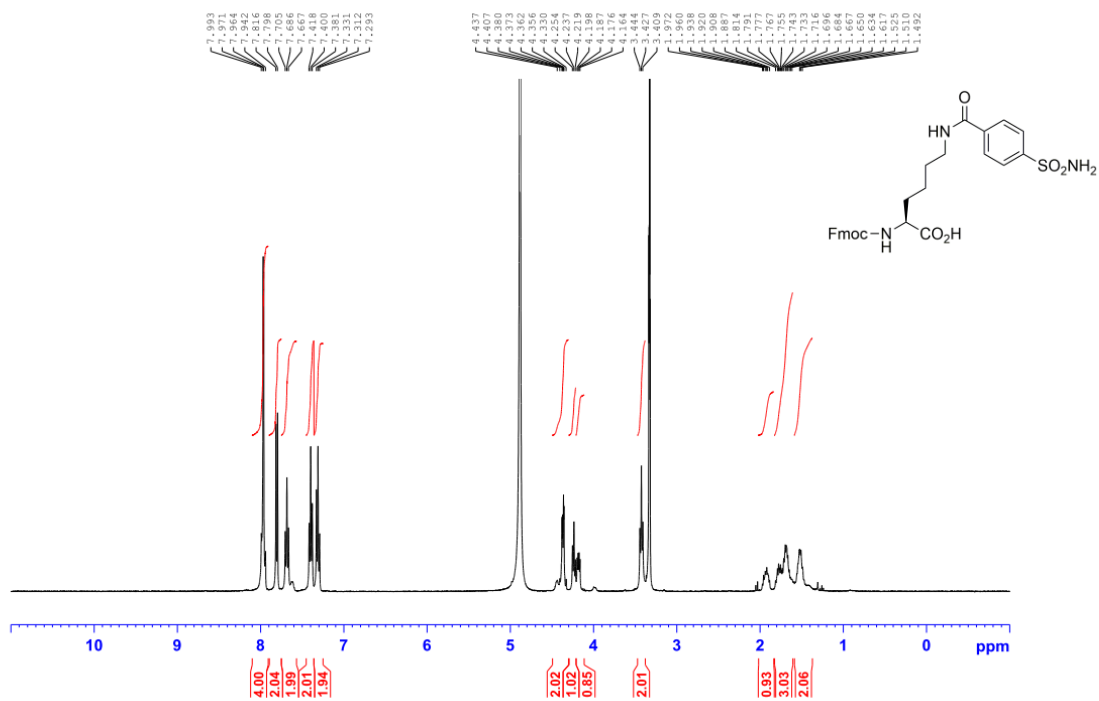


Fig. S1. Mass spectral analysis of the labelling site of hCA1 using SEAL 4. (a) The primary sequence of hCA1. (b) Crystal structure of hCA1 complexed with 3-Actoxymercuri-4-aminobenzenesulfonamide (PDB ID: 1CZM). The amino acid (Lys 137) modified by 4 is highlighted by a colored stick model. (c) nanoLC-MS/MS analysis of the fragment labelled at Lys137.



S2. (a) HPLC analysis of the SEAL **6** (○, 10 μM) with butylamine (1 M) in 50 mM HEPES buffer (pH 7.2) at 37 °C for 5 min > (left), 24 h (middle) or 48 h (right) of incubation. × denotes oxidated SEAL **6**. However, the aminolysis product **S1** and **S2** was not detected. (b) Chemical structures of **S1**, **S2**. (c) HPLC analysis of the SEAL **6** (△, 10 μM) with L-Cys methyl ester (1 mM) in 50 mM HEPES buffer (pH 7.2) at 37 °C for 5 min > (left), 24 h (middle) or 48 h (right) of incubation.

¹H NMR spectrum of Fmoc-L-Lys(4-sulfamoyl-benzoyl)-OH



¹³C NMR spectrum of Fmoc-L-Lys(4-sulfamoyl-benzoyl)-OH

