

Electronic Supplementary Information

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

Masaya Denda^a, Takuya Morisaki^a, Taiki Kohiki^a, Jun Yamamoto^a, Kohei Sato^{a,b}, Ikuko Sagawa^c, Tsubasa Inokuma^a, Youichi Sato^a, Aiko Yamauchi^a, Akira Shigenaga^{*a,d} and Akira Otaka^{*a}

- a) Institute of Biomedical Sciences and Graduate School of Pharmaceutical Sciences, Tokushima University, Shomachi, Tokushima 770-8505, Japan
- b) Current address: Department of Applied Chemistry and Biochemical Engineering, and Green Energy Research Division, Research Institute of Green Science and Technology, Shizuoka University, 3-5-1 Johoku, Hamamatsu, Shizuoka 432-8561, Japan
- c) Institute for Medicinal Research, Graduate School of Pharmaceutical Sciences, Tokushima University, Shomachi, Tokushima 770-8505, Japan
- d) JST, PRESTO, 4-1-8 Honcho, Kawaguchi, Saitama 332-0012, Japan

E-mail:

shigenaga.akira@tokushima-u.ac.jp (A. Shigenaga)

aotaka@ph.tokushima-u.ac.jp (A. Otaka)

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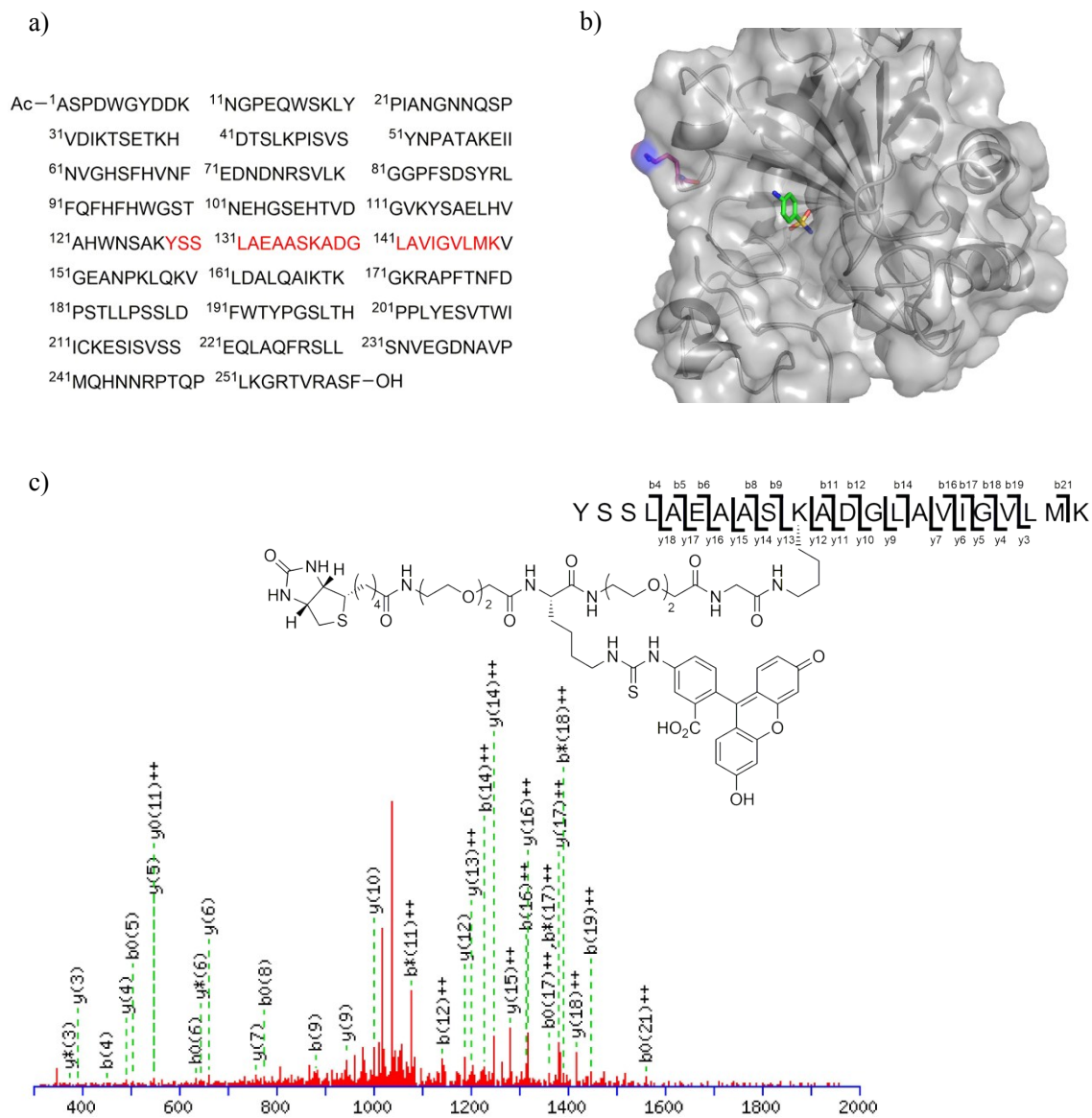
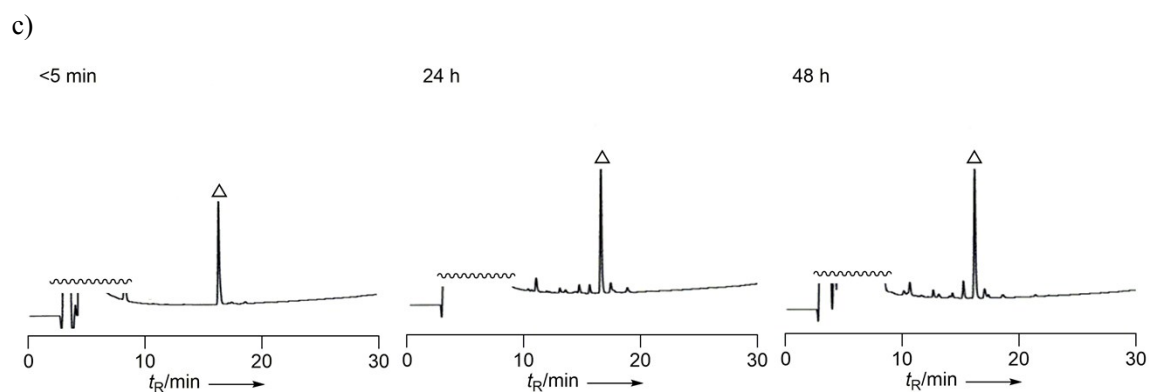
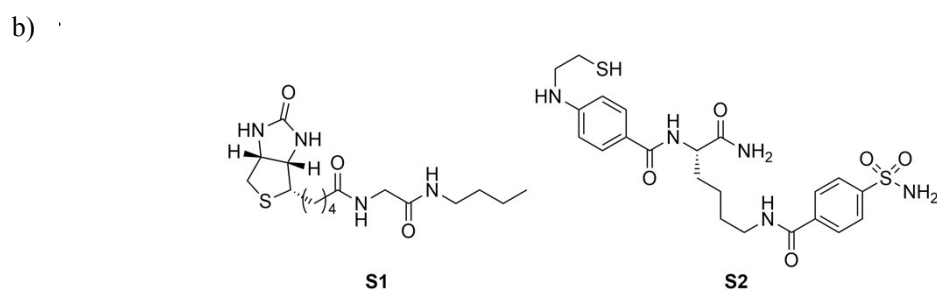
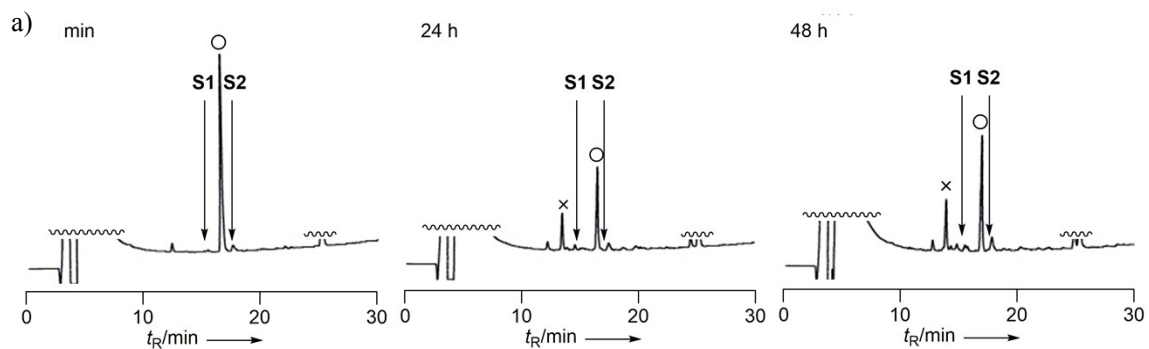
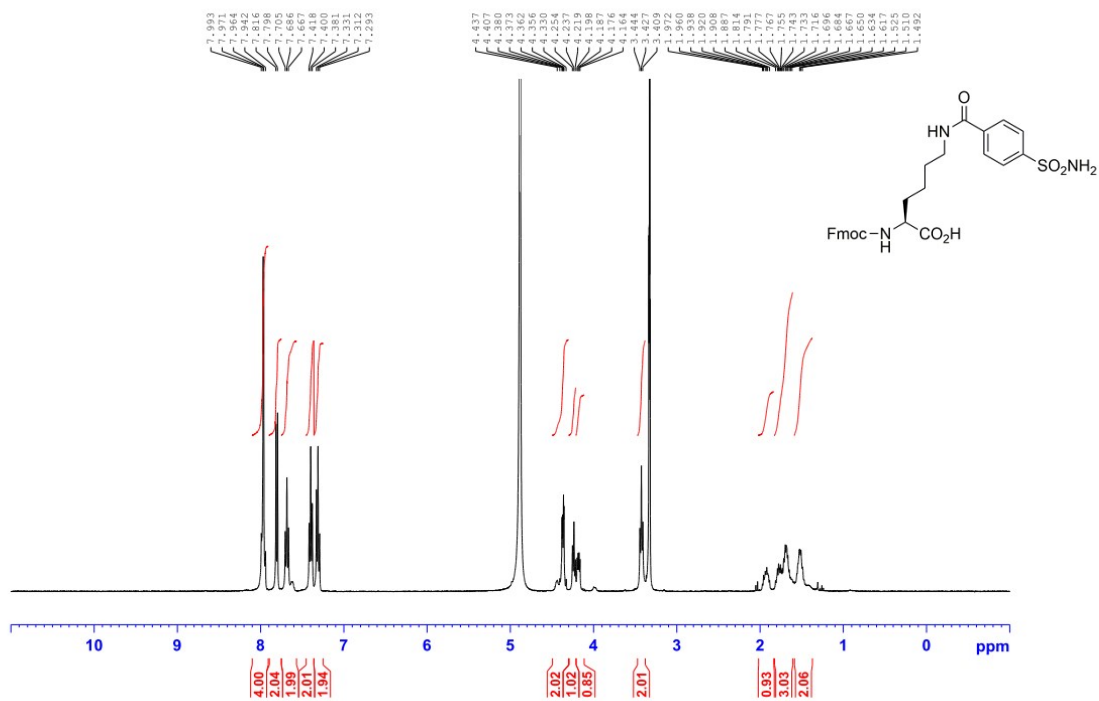


Fig. S1. Mass spectral analysis of the labelling site of hCA1 using SEAL 4. (a) The primary sequence of hCA1. (b) Crystal structure of hCA1 complexed with 3-Actoxymercuri-4-aminobenzenesulfonamide (PDB ID: 1CZM). The amino acid (Lys 137) modified by 4 is highlighted by a colored stick model. (c) nanoLC-MS/MS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

