Supporting Information

Selective Fluorescence Detection of Proteins Using Molecularly Imprinted Hydrogels with Aggregation-Induced Emission

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Chemicals

Unless otherwise specified, reagents were used as received. FUJIFILM Wako Pure Chemical Co., Ltd (Tokyo, Japan), Tokyo Chemical Industry Co., Ltd. (Tokyo, Japan), Nacalai Tesque, Inc. (Tokyo, Japan), Sigma-Aldrich (Tokyo, Japan) are indicated as Wako, TCI, nacalai tesque, ALDRICH, respectively.

Distilled water (nacalai tesque)
Acetone (nacalai tesque)
Acetonitrile (nacalai tesque)
Bovine serum albumin (BSA) (nacalai tesque)
Lysozyme (nacalai tesque)
N-isopropylacrylamide (NIPAAm) (nacalai tesque)
Methacrylic acid (MAA) (nacalai tesque)
Ammonium peroxodisulfate (APS) (Wako)
N, *N*, *N*', *N*'-tetramethylethylenediamine (TEMED) (Wako)
2-Acrylamido-2-methylpropane sulfonic acid (AMPS) (TCI)
p-Styrenesulfonic acid sodium salt (SS) (Wako)
2,2'-Azobis[2-(2-imidazoline-2-yl]propane] dihydrochloride (AIZP) (Wako)
Cytochrome C (nacalai tesque)
Trypsin (nacalai tesque)
4,4'-(1,2-Diphenylethene-1,2-diyl)diphenol (cis- and trans- mixture) (DPEDDP) (TCI)
NEt3 (nacalai tesque)
CH_2Cl_2 (nacalai tesque)
methacryloyl chloride (nacalai tesque)
NaCl (nacalai tesque)
magnesium sulfate (nacalai tesque)
4-dimethylaminopyridine (TCI)
succinic anhydride (TCI)
$CHCl_3$ (nacalai tesque)

Poly(ethylene glycol) 600 diacrylate (14G') was kindly donated from Shin-Nakamura Chemical (Wakayama, Japan).

Instruments

Microplate reader SpectraMax iD5 (Molecular Devices LCC, USA, San Jose,CA)
Fluorescence microscope BZ-X800 (KEYENCE Co., Osaka, Japan)

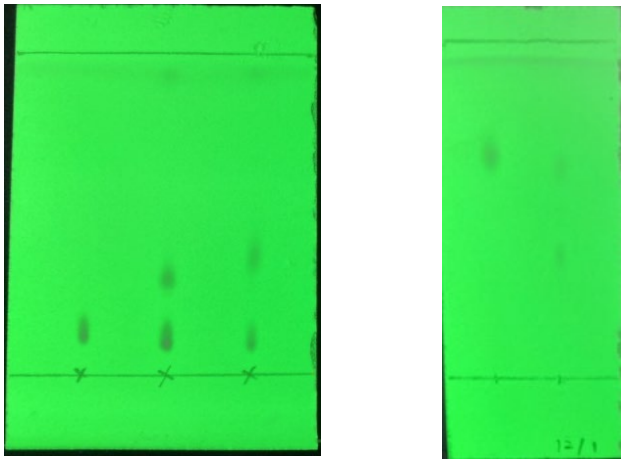

Figure S1. Result of TLC (a) after reaction at the first step, (b) after reaction at the second step.

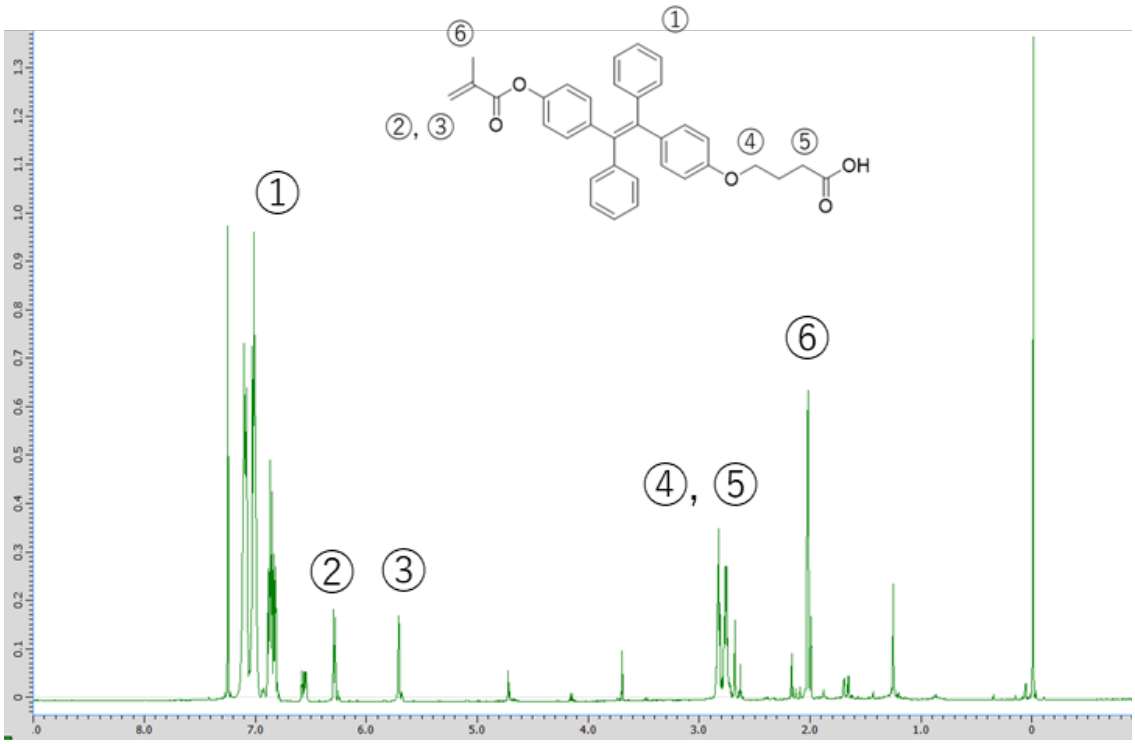

Figure S2. The NMR spectrum of fluorescent monomers (in CDCl3).
(^{1}H NMR: δ 7.1-6.9 (m, 18H, aromatic ring), 6.3 (d, 1H, alkene), 5.7 (d, 1H, alkene), 2.8 (t, 2H, methylene), 2.7 (m, 4H, methylene), 2.0 (t, 3H, methyl))

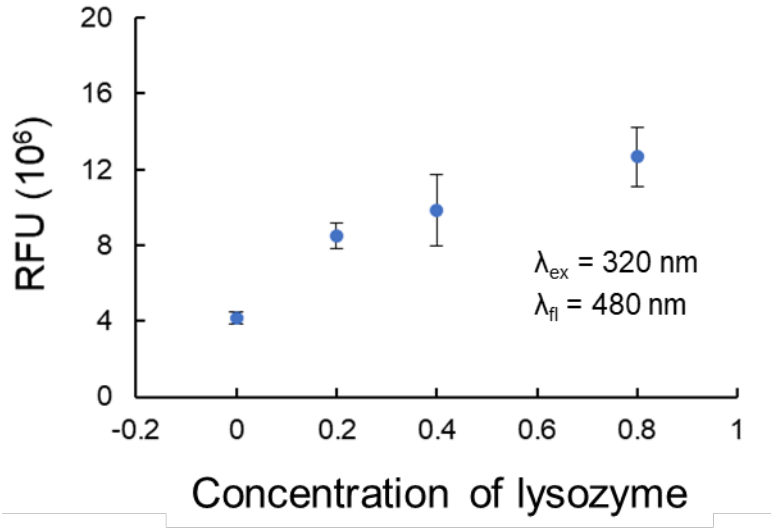

Figure S3. Fluorescent intensity of the hydrogels with different concentration of lysozyme. Hydrogels were prepared with lysozyme, the AIE monomer, 14G', NIPAAm, MAA, and APS at 0-80 μM, 100 μM, 30 mM, 1200 mM, 35 mM, and 0.1w/v% (vs. 14G'+NIPAAm), respectively.

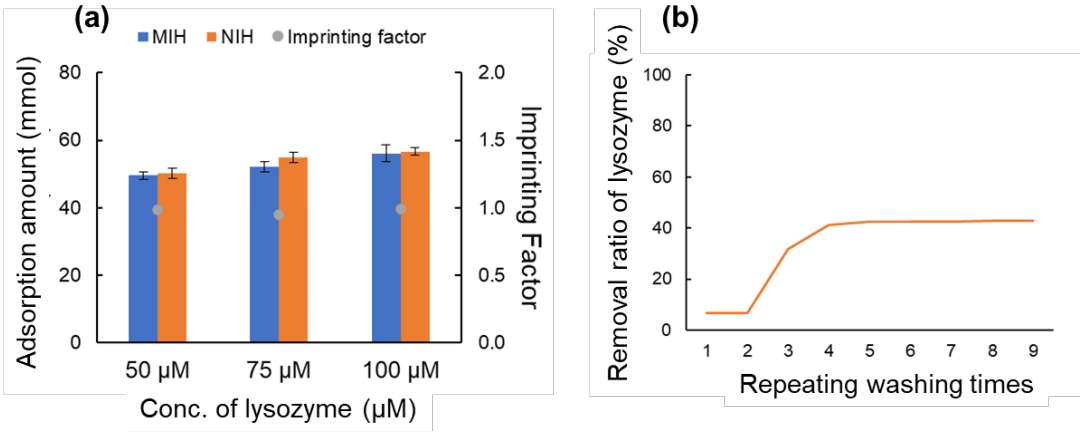

Figure S4. (a) Amount of lysozyme adsorption to the MIH and the NIH, (b) the rate of removed lysozyme from the MIH.

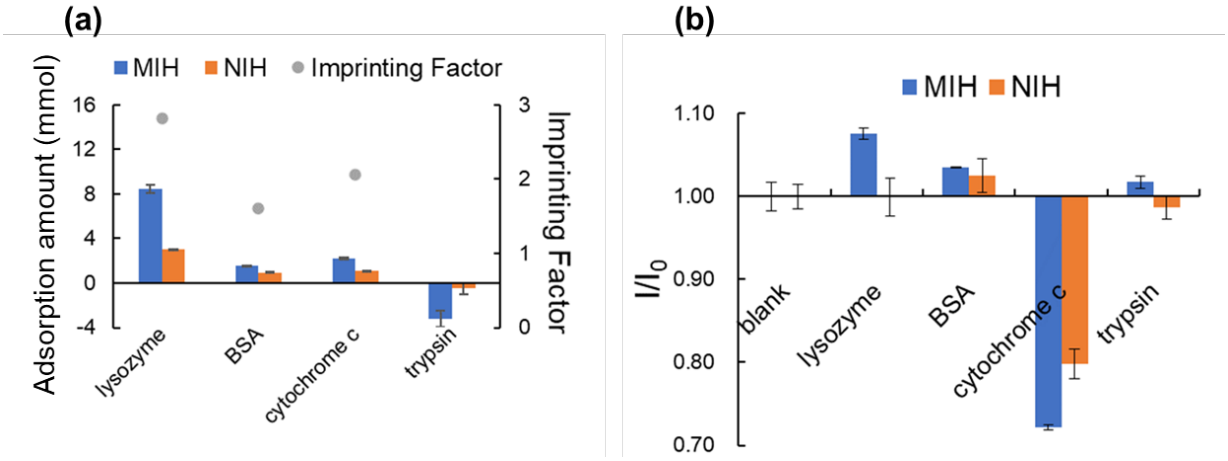

Figure S5. Evaluation of selectivity (a) adsorption amount, (b) fluorescence intensity.

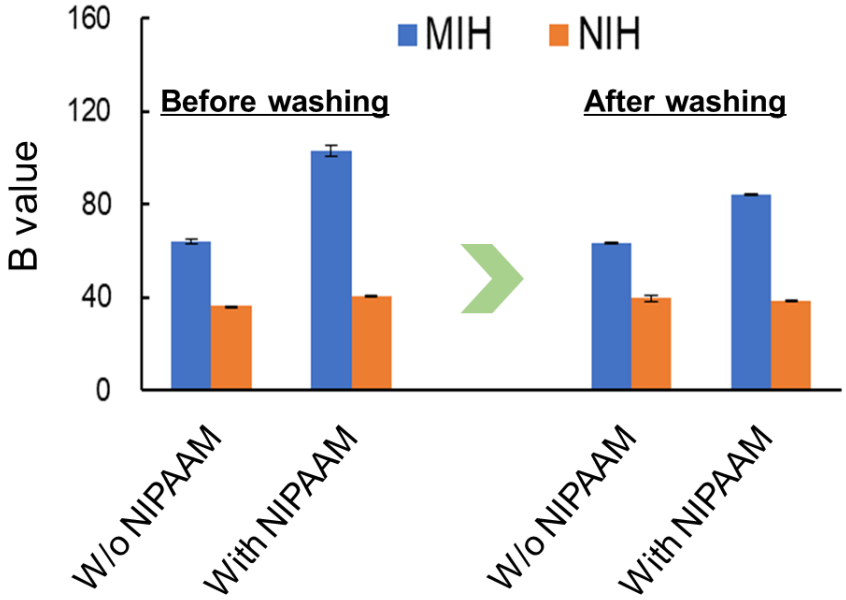

Figure S6. Fluorescence intensity (B value) before and after washing