

Electronic Supplementary Information

**Thermoresponsive Anionic Block Copolymer Brushes with
Strongly Anionic Bottom Segment for Effective Interactions
with Biomolecules**

Kenichi Nagase,^{a,*} Jun Kobayashi,^a Akihiko Kikuchi,^b Yoshikatsu Akiyama,^a Hideko Kanazawa,^c and Teruo Okano^{a,*}

^aInstitute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, TWIns, 8-1 Kawadacho, Shinjuku, Tokyo 162-8666, Japan

^bDepartment of Materials Science and Technology, Tokyo University of Science, 6-3-1 Niijuku, Katsushika, Tokyo 125-8585, Japan

^cFaculty of Pharmacy, Keio University, 1-5-30 Shibakoen, Minato, Tokyo 105-8512, Japan

*Corresponding authors

E-mails: nagase.kenichi@twmu.ac.jp, tokano@twmu.ac.jp

Table S1. Properties of catecholamine derivatives and hydrophobic steroids.

Compounds	Structure	Molecular weight	LogP ^a	pK
DOPA		197.2	-2.74	8.72
Adrenaline		183.2	-0.685	9.8-9.9
Tyramine		137.2	0.616	10.4
Hydrocortisone		362.46	1.61	
Dexamethasone		392.46	1.83	

a) Partition coefficient in an *n*-octanol/water system. ^{S1)}**Table S2.** Properties of basic proteins.

Analyte	Molecular weight (kDa) ^{a)}	pI ^{a)}	Remarks
α-chymotrypsin	25	8.75	Peptidase
α-chymotrypsinogen A	25.6	8.97	Zymogen of chymotrypsin
Trypsin	23.3	10.1-10.5	Serine protease
Trypsinogen	23.7	9.3	Zymogen of trypsin
Lysozyme	14.3	11.35	Muramidase, Destroying bacteria
Ribonuclease A	13.7	9.6	Endoribonuclease

a) From manufacturer's data.

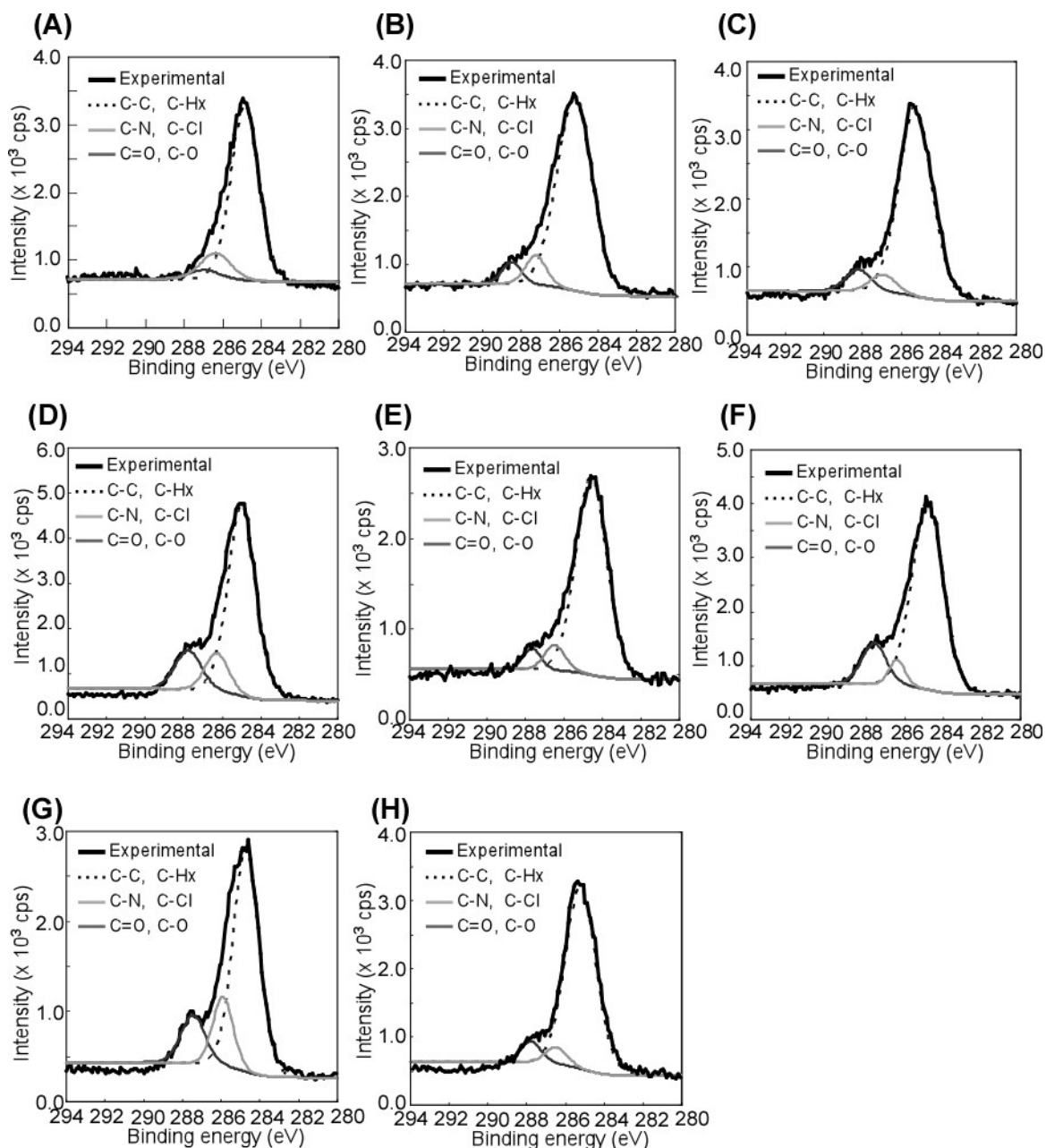


Figure S1. Deconvolution of C1s XPS peaks of prepared beads: (A) 10AS, (B) 10AS-300IP, (C) 10AS-600IP, (D) 10AS-1000IP, (E) 20AS-300IP, (F) 20AS-600IP, (G) 600IP-*r*-20AS, and (H) 600IP (see Table 1 for definitions of abbreviations).

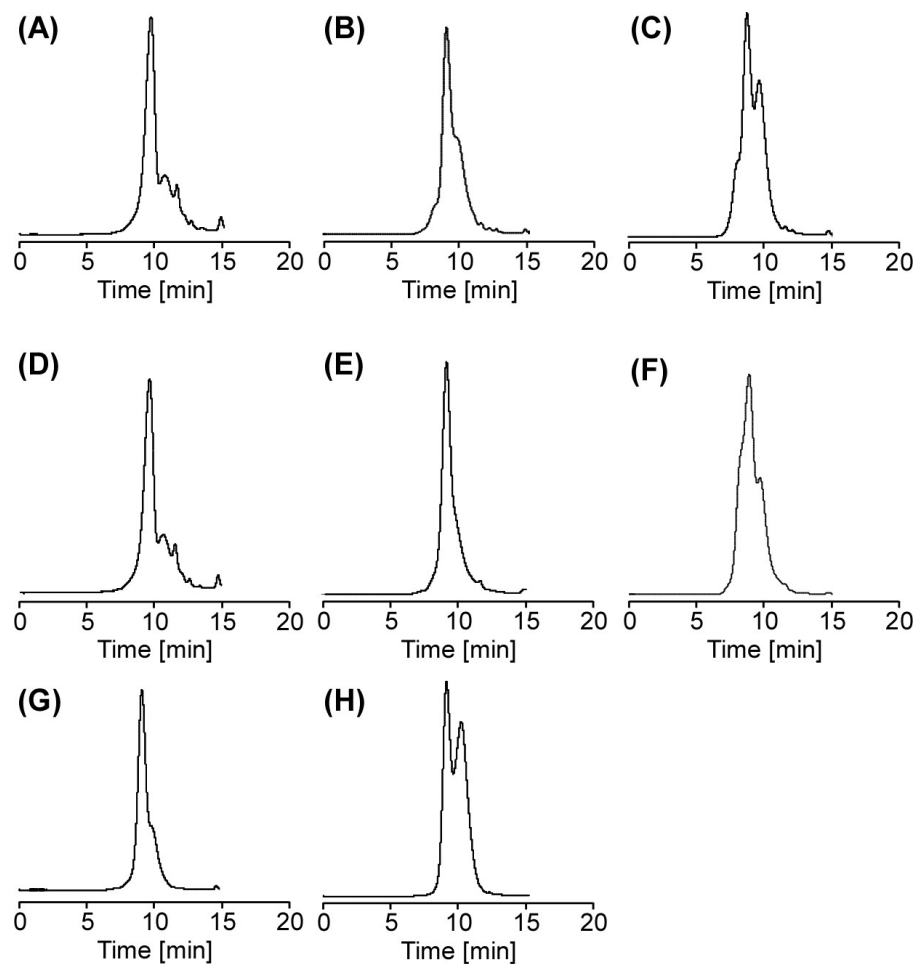


Figure S2. Gel-permeation chromatograms of PAMPS-*b*-PIPAAM retrieved from silica bead surfaces for molecular weight determination: (A) 10AS-300IP, (B) 10AS-600IP, (C) 10AS-1000IP, (D) 20AS-300IP, (E) 20AS-600IP, (F) 20AS-1000IP, (G) 600IP-*r*-20AS, and (H) 600IP (see Table 1 for definitions of abbreviations).

Reference

(S1) Hansch, C.; Albert, L.; Hoekman, D., *In Exploring QSAR: Hydrophobic, Electronic and Steric Constant* American Chemical Society: Washington DC, **1995**; p.174, 178.