Electronic Supplementary Material (ESI) for Nanoscale Advances.

Electronic Supplementary Information

Aerolysin Nanopore-Based Identification of Proteinogenic Amino Acids Using a Bipolar Peptide Probe

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Table S1. Sequences and properties of the peptides used in this work.

Figure S1. Comparison of the blocking current, blocking duration, and characteristic signals of bipolar probes of different lengths.

Figure S2. Duration time vs applied voltage for the bipolar probes W and H.

Figure S3. I/I_0 distribution of 20 amino acids.

Figure S4. Dependence of the blocking current on the volume of amino acid X.

Table S1. Sequences and properties of the peptides used in this work.

Name	Sequence (N′→C′)	Mw (Da)	Net charge (pH=7.5)	Manufacturer
A	DDDDARRRRR	1330.36	1.0	GL Biochem
L	DDDDLRRRRR	1372.44	1.0	GL Biochem
D	DDDDDRRRRR	1374.37	0.0	GL Biochem
E	DDDDERRRRR	1388.40	0.0	GL Biochem
F	DDDDFRRRRR	1406.46	1.0	GL Biochem
G	DDDDGRRRRR	1316.34	1.0	GL Biochem
H	DDDDHRRRRR	1396.42	1.0	GL Biochem
I	DDDDIRRRRR	1372.44	1.0	GL Biochem
M	DDDDMRRRRR	1390.48	1.0	GL Biochem
C	DDDDCRRRRR	1362.43	1.0	GL Biochem
N	DDDDNRRRRR	1373.39	1.0	GL Biochem
T	DDDDTRRRRR	1360.39	1.0	GL Biochem
P	DDDDPRRRRR	1356.40	1.0	GL Biochem
Q	DDDDQRRRRR	1387.41	1.0	GL Biochem
Y	DDDDYRRRRR	1422.46	1.0	GL Biochem
S	DDDDSRRRRR	1346.36	1.0	GL Biochem
V	DDDDVRRRRR	1358.42	1.0	GL Biochem
W	DDDDWRRRRR	1445.5	1.0	GL Biochem
K	DDDDKRRRRR	1387.46	2.0	GL Biochem
R	DDDDRRRRRR	1415.47	2.0	GL Biochem
G-	DDDDDDGRRRRR	1546.51	-1.0	GL Biochem
F-	DDDDDDFRRRRR	1636.63	-1.0	GL Biochem
P-	DDDDDDPRRRRR	1586.57	-1.0	GL Biochem
I-	DDDDDDIRRRRR	1602.62	-1.0	GL Biochem
Q-	DDDDDDQRRRRR	1617.59	-1.0	GL Biochem
A6	DDDDDDARRRRRRRR	2029.09	2.0	GL Biochem

C6	DDDDDDCRRRRRRRR	2061.16	1.9	GL Biochem
S6	DDDDDDSRRRRRRRR	2045.09	2.0	GL Biochem
A8	DDDDDDDDARRRRRRRRR	2571.63	2.0	GL Biochem
C8	DDDDDDDDCRRRRRRRRR	2603.70	1.9	GL Biochem
S8	DDDDDDDDDSRRRRRRRRR	2587.63	2..0	GL Biochem
*The net charge of examined peptides was calculated from http://www.novopro.cn/tools/calc_peptide_property.html				

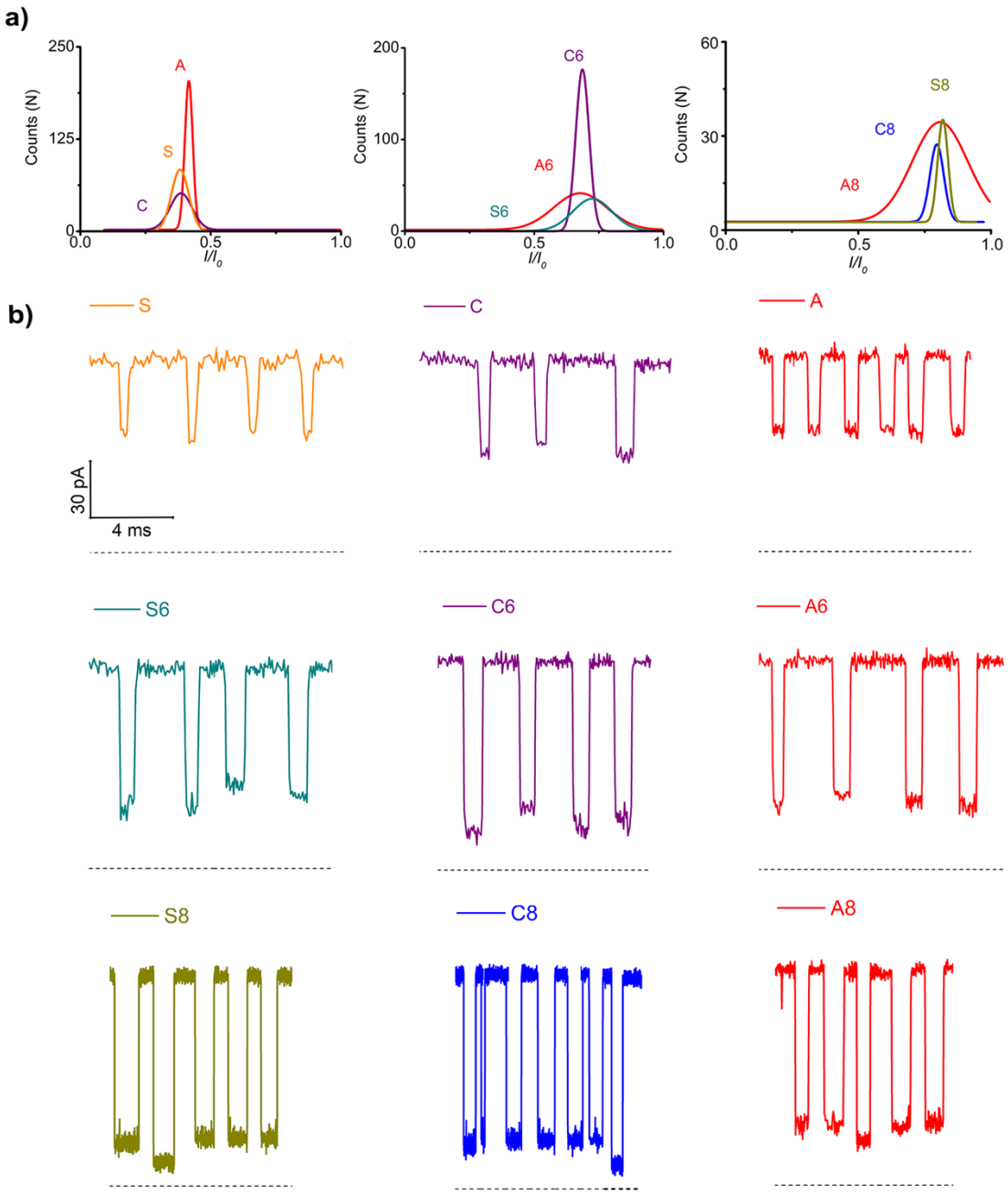

Figure S1. Comparison of the blocking current, blocking duration, and characteristic signals of bipolar probes of different lengths. **(a)** Comparison of blocking currents of three amino acids A, C, and S in different peptide-chain carriers. (Left, short peptide probe (D_4XR_5), middle, intermediate peptide probe (D_6XR_8), right, long peptide probe (D_8XR_{10})). **(b)** Characteristic signals of peptide-chain carriers of D_4XR_5, D_6XR_8, and D_8XR_{10}.

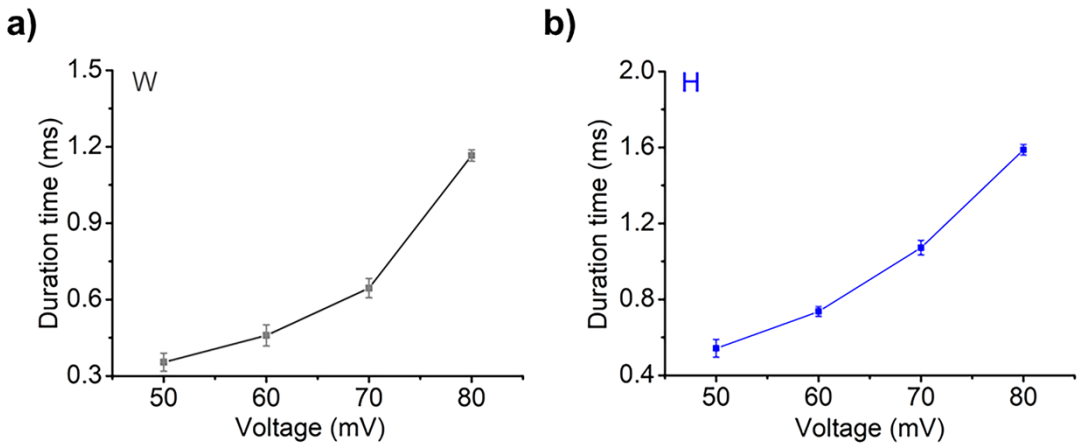

Figure S2. Duration time vs applied voltage for the bipolar probes W and H.

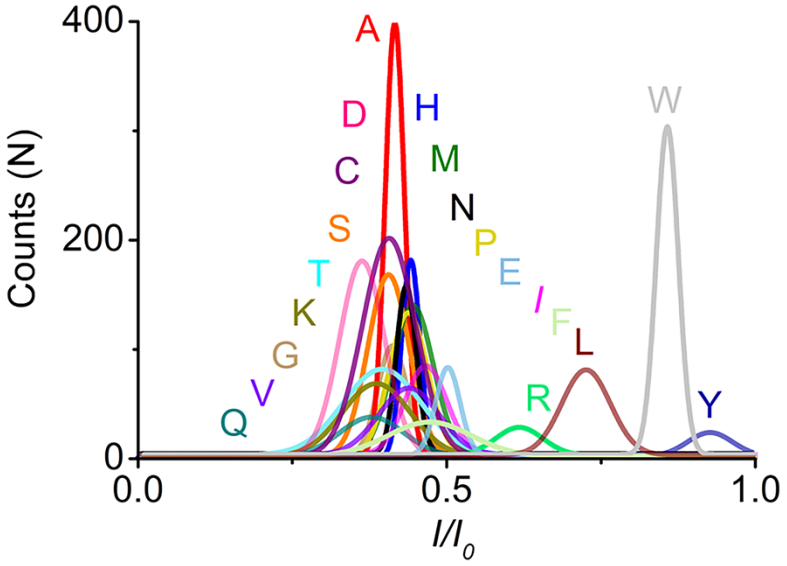

Figure S3. I/I_0 distribution of 20 proteinogenic amino acids.

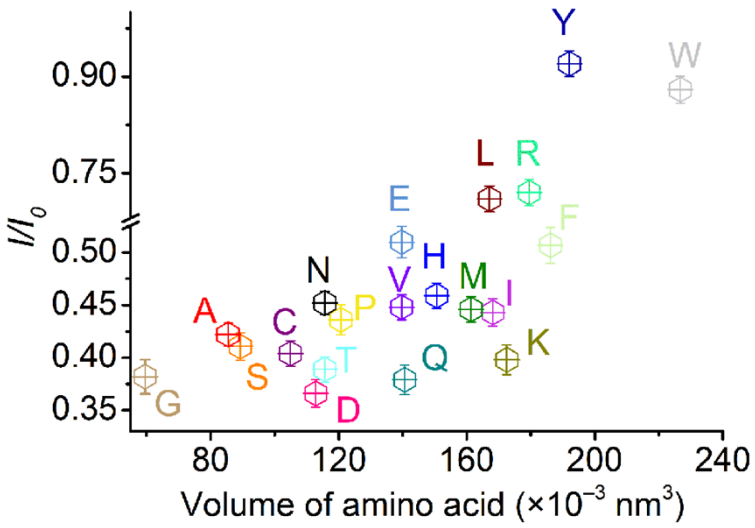

Figure S4. Dependence of the blocking current on the volume of amino acid X.