Systematic Design and Validation of Ion Channel Stabilization of Amphipathic α-Helical Peptides incorporating Tryptophan Residues

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Figure S1: Near-UV CD spectra of BKBA20 and Trp-containing analogs.
Figure S2: Lipid solubilization assay.

Lipid solubilization assay.

DPPC (4.4 mmol) was dissolved in 100 mL of chloroform. The chloroform stock solutions were then evaporated into thin films using a nitrogen stream and further dried in vacuo overnight. The thin lipid film was then suspended in 1 mL of 50 mM phosphate buffer (pH 7.4) and vortexed for 30 min at 60°C. LUVs were prepared using a LiposoFast extruder (Avestin, Canada) through a 100 nm filter41. Lipid dispersions were passed through a filter for a total of 21 times. The solutions were mixed at 200 μM peptide concentration and 1 mM DPPC concentration to give P/L ratios of 1/5 and incubated at 25℃The kinetics of DPPC solubilization were measured by UV absorbance at 595 nm every 2 mins for 30 minutes on Model 680XR microplate reader (Bio-Rad).

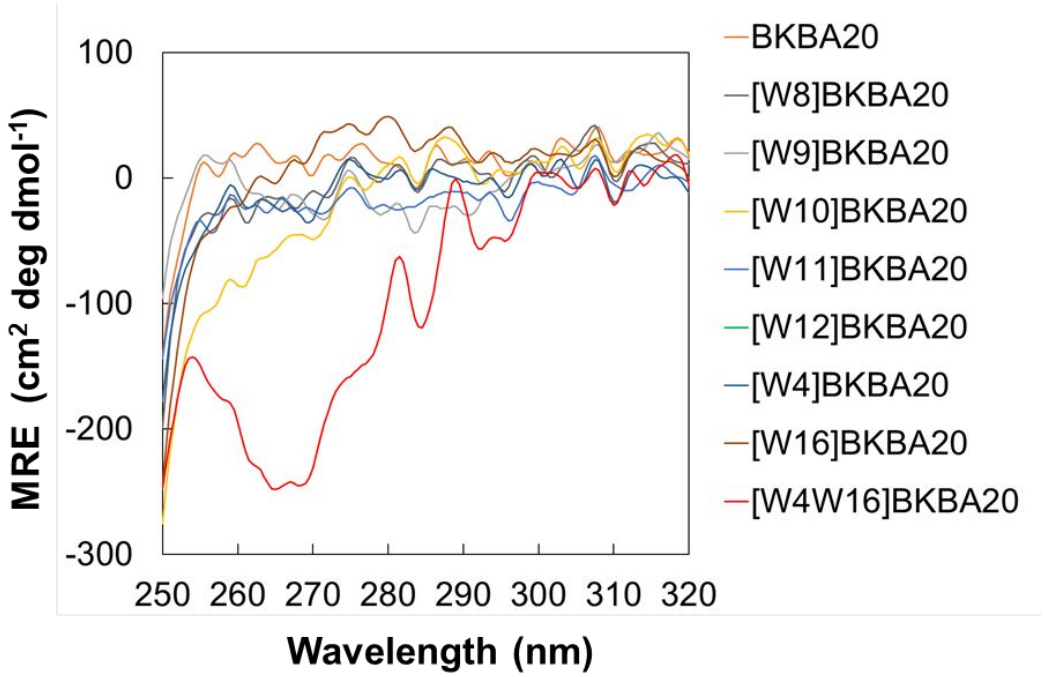

Figure S1. Near-UV CD spectra of BKBA20 and Trp-containing analogs in 50 mM phosphate buffer (pH 7.4). [W4W16]BKBA20 indicated the characteristic CD band in the 255-290 nm range, corresponding to the L_a and L_b bands of the Trp, which is sensitive to the environment.

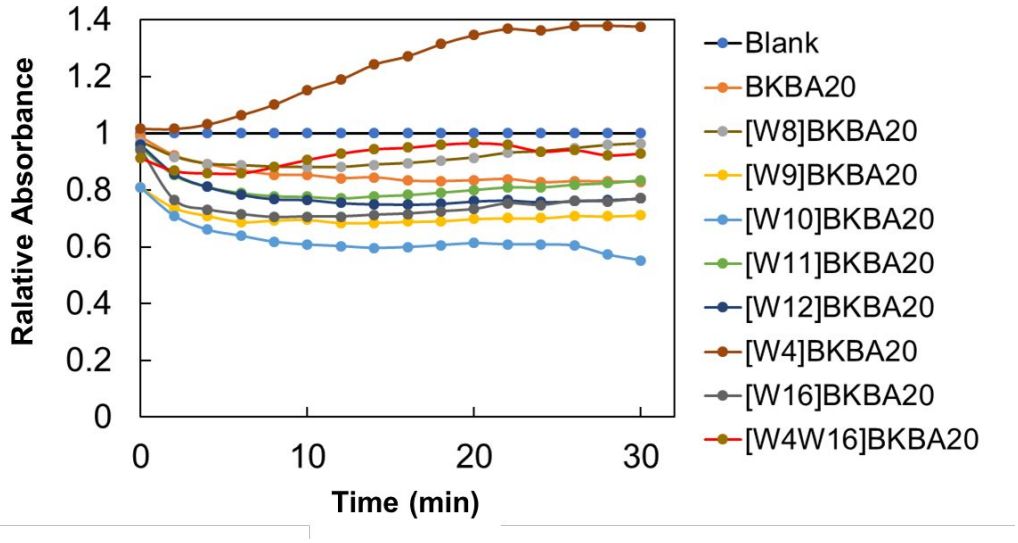

Figure S2. Lipid solubilization assay. BKBA20 and Trp-containing analogs dissolved in 50 mM phosphate buffer and mixed with DPPC LUVs. Turbidity was monitored by measuring the absorption at 595 nm every 2 minutes for 30 min. The peptide and DPPC concentrations were 200 μM and 1 mM, respectively, to give the P/L ratios of 1/5.