Supporting Information

Bacterial Specific Aggregation and Killing of Immunomodulatory Host Defense Peptides

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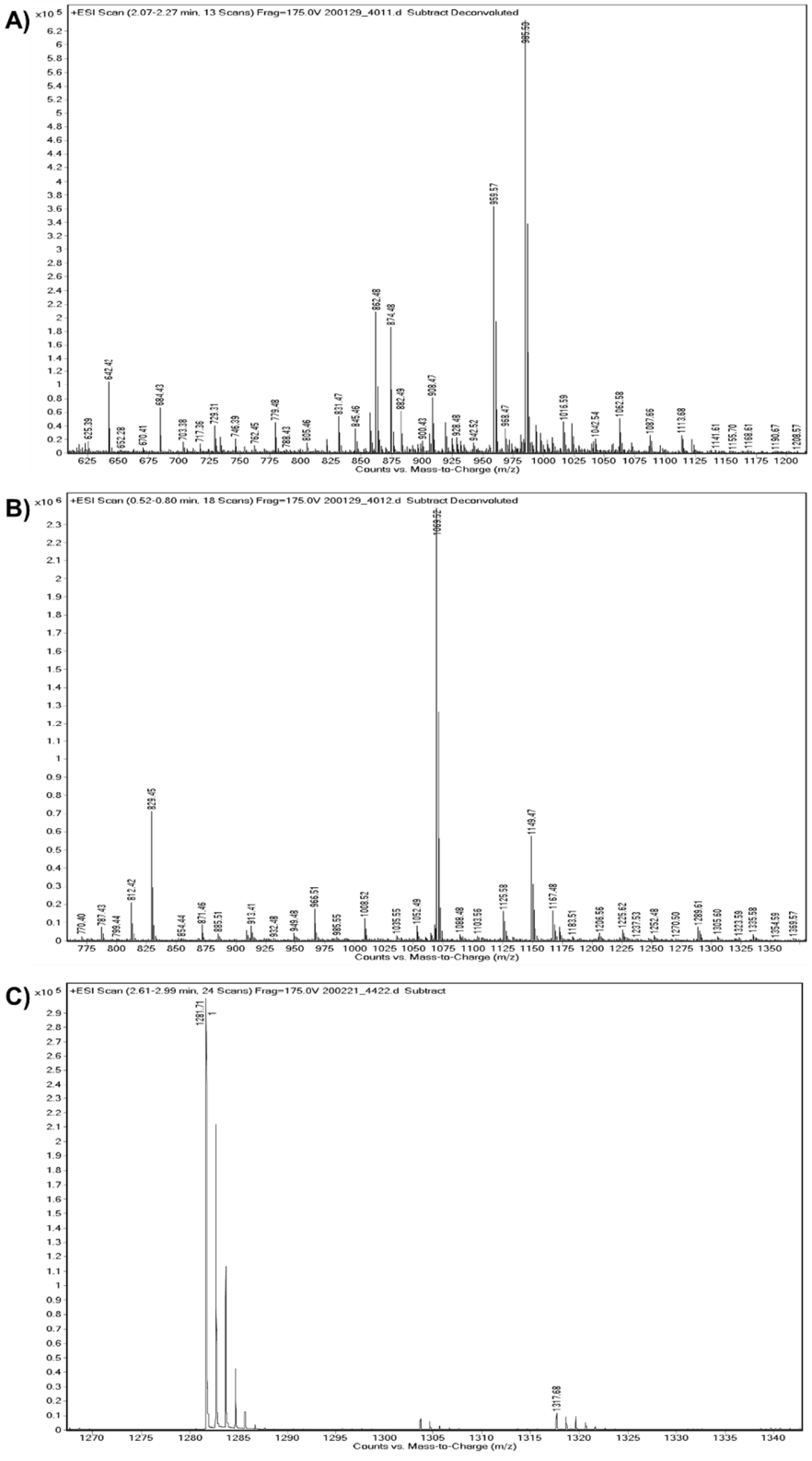

A)
+ESI Scan (2.07-2.27 min, 13 Scans) Frag=175.0V 200129_4011.d Subtract Deconvoluted
x10 5
Counts vs. Mass-to-Charge (m/z)
B)
+ESI Scan (0.52-0.80 min, 18 Scans) Frag=175.0V 200129_4012.d Subtract Deconvoluted
x10 6
Counts vs. Mass-to-Charge (m/z)
C)
+ESI Scan (2.61-2.99 min, 24 Scans) Frag=175.0V 200221_4422.d Subtract
x10 5
Counts vs. Mass-to-Charge (m/z)

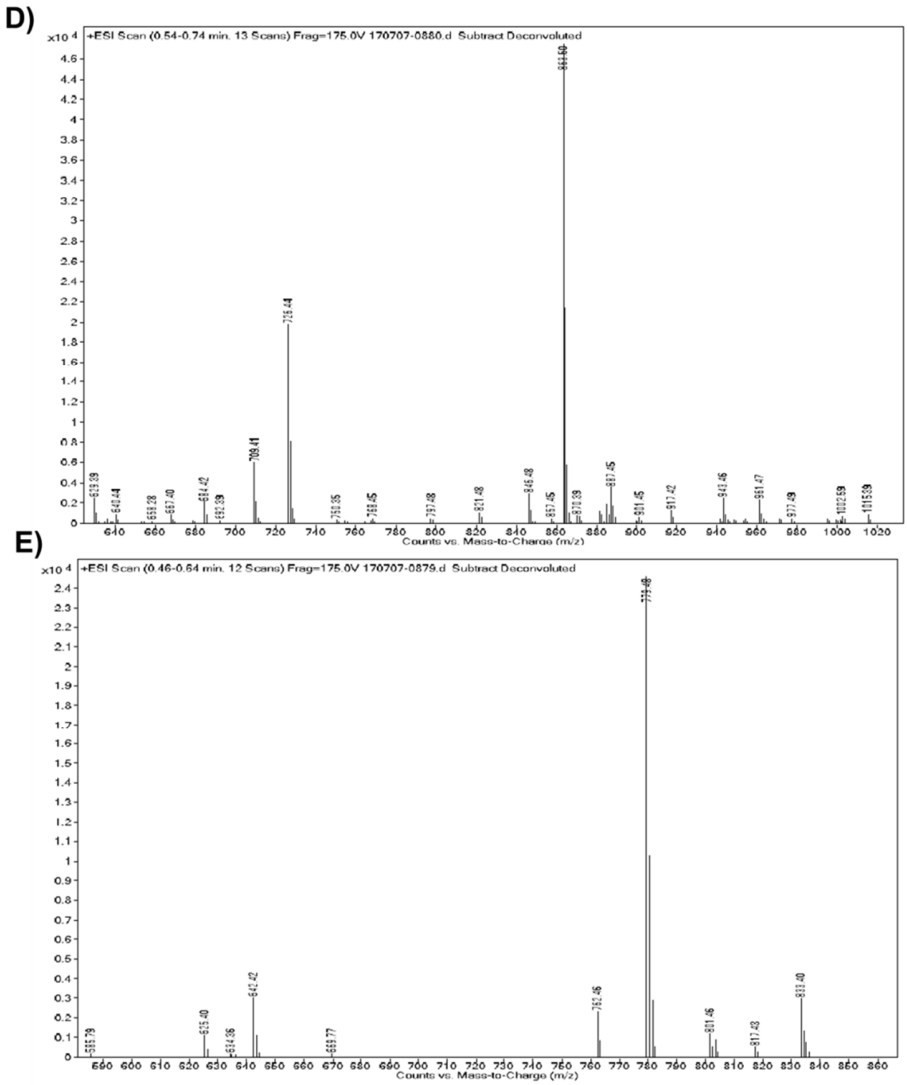


Figure S1: Mass spectrometry results for **(A)** mCA4-3; (**B)** mCA4-4; **(C)** mCA4-5; **(D)** mCA4-2; and **(E)** mCA4-1 peptides.

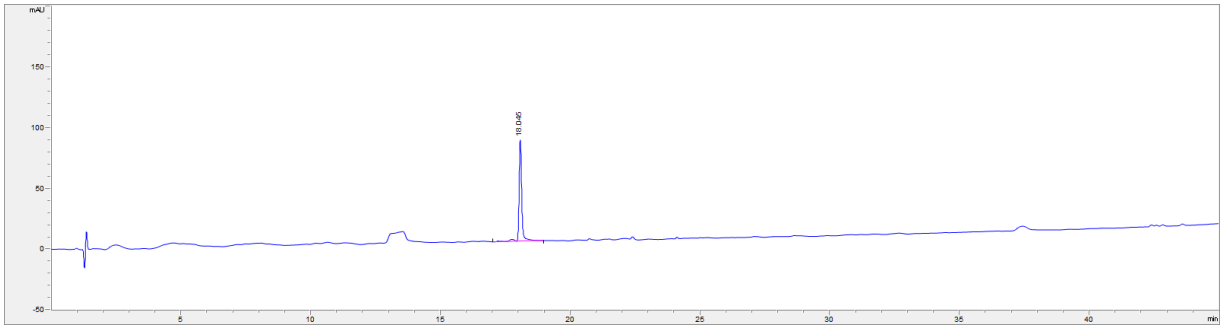


Figure S2: RP-HPLC chromatogram for mCA4-5 peptide.

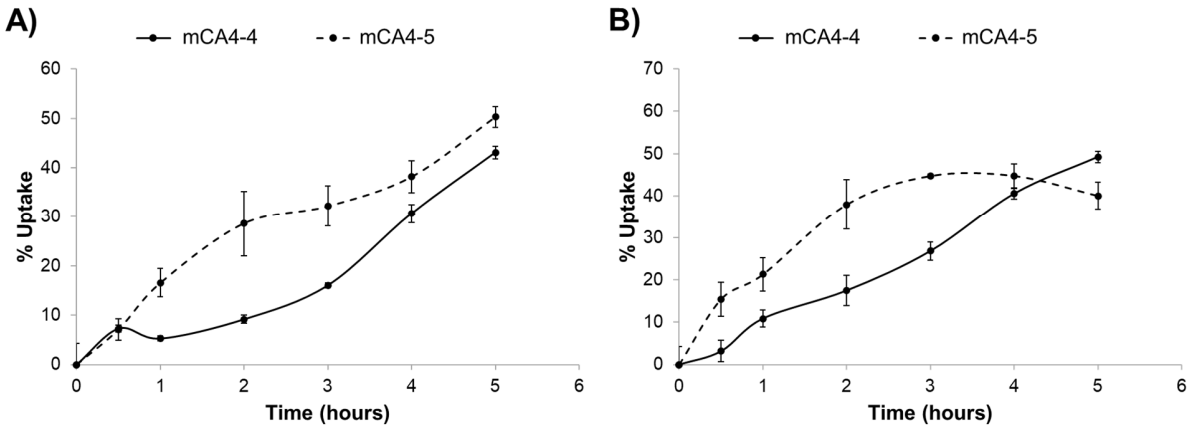


Figure S3: Uptake of selected AMPs in **(A)** *E. coli*; and **(B)** *B. subtilis*.

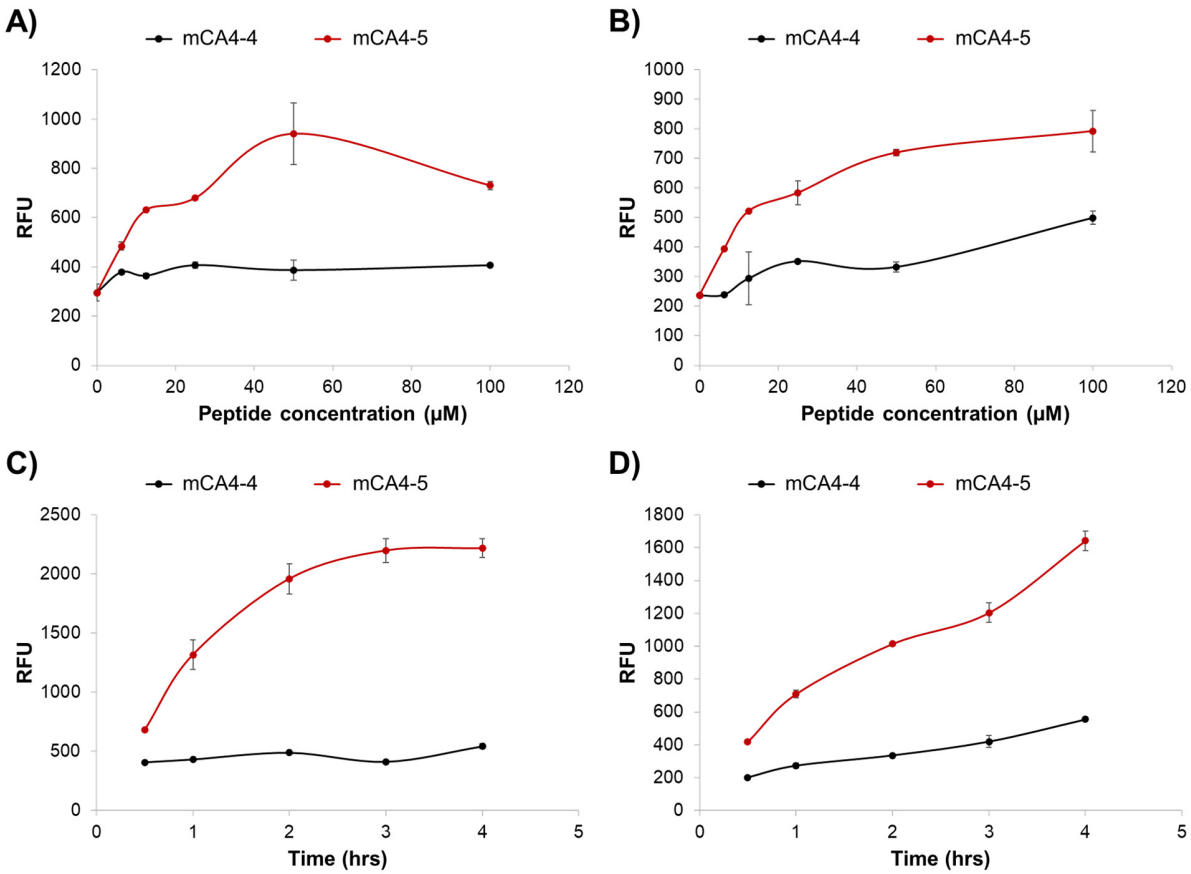
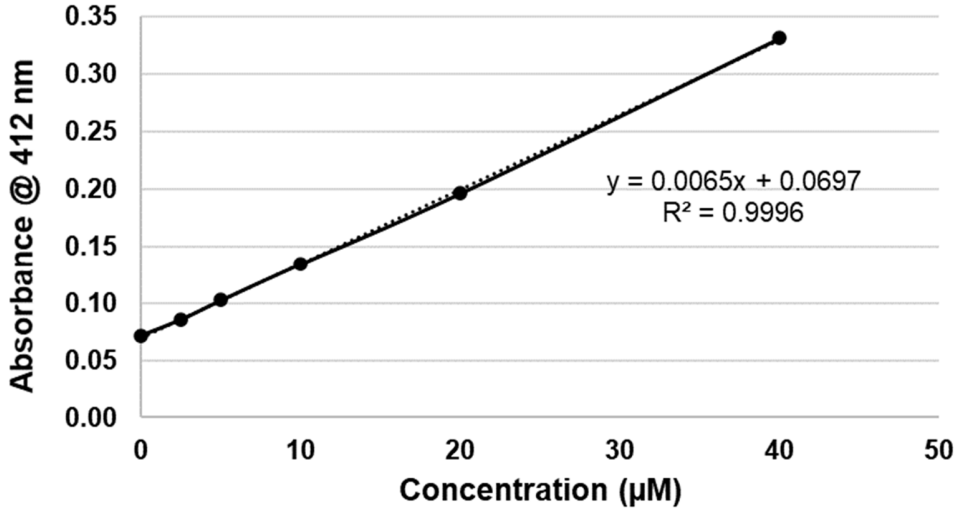


Figure S4: Membrane permeabilization efficacies AMPs in **(A & C)** *E. coli*; and **(B & D)** *B. subtilis*. A and B were done after a fixed time interval of 30 minutes. C and D were done using a fixed peptide concentration of 25μM.



Sample	Mean Absorbance @ 420 nm
Blank	0.0718 ± 0.0004
mCA4-4 (40 µM)	0.087 ± 0.0002
mCA4-5 (40 µM)	0.0780 ± 0.001

Figure S5: Calibration of L-cysteine hydrochloride monohydrate by Elman's assay.

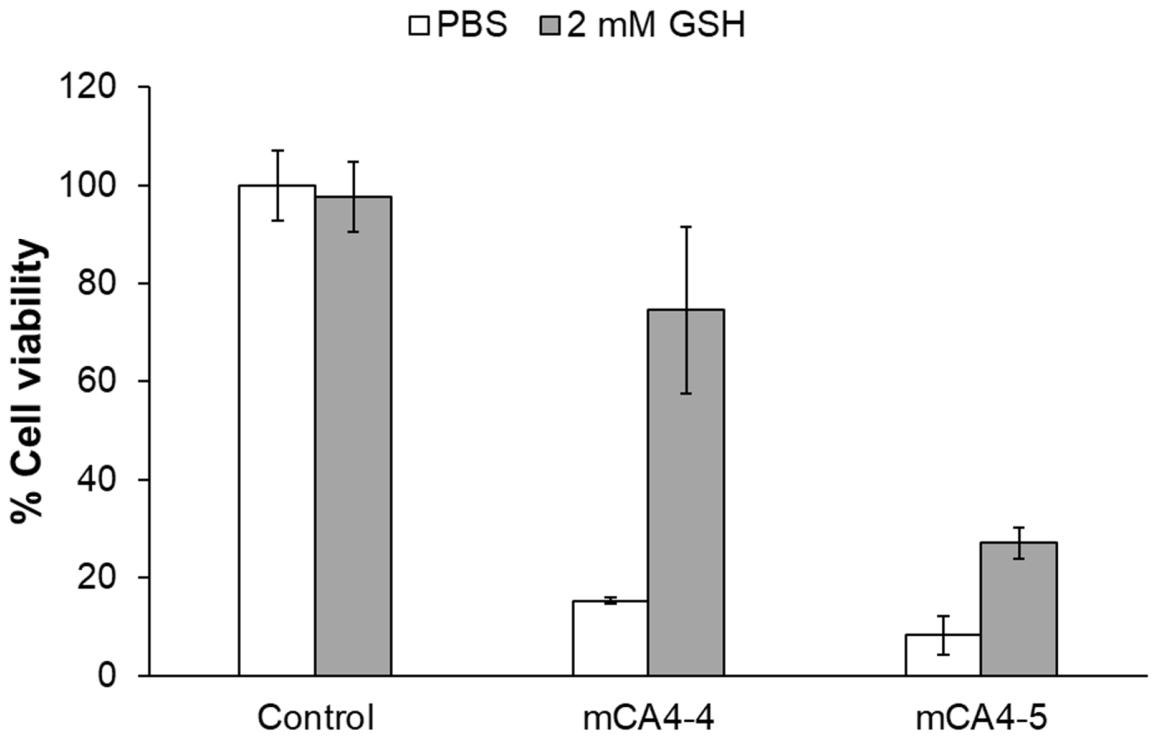
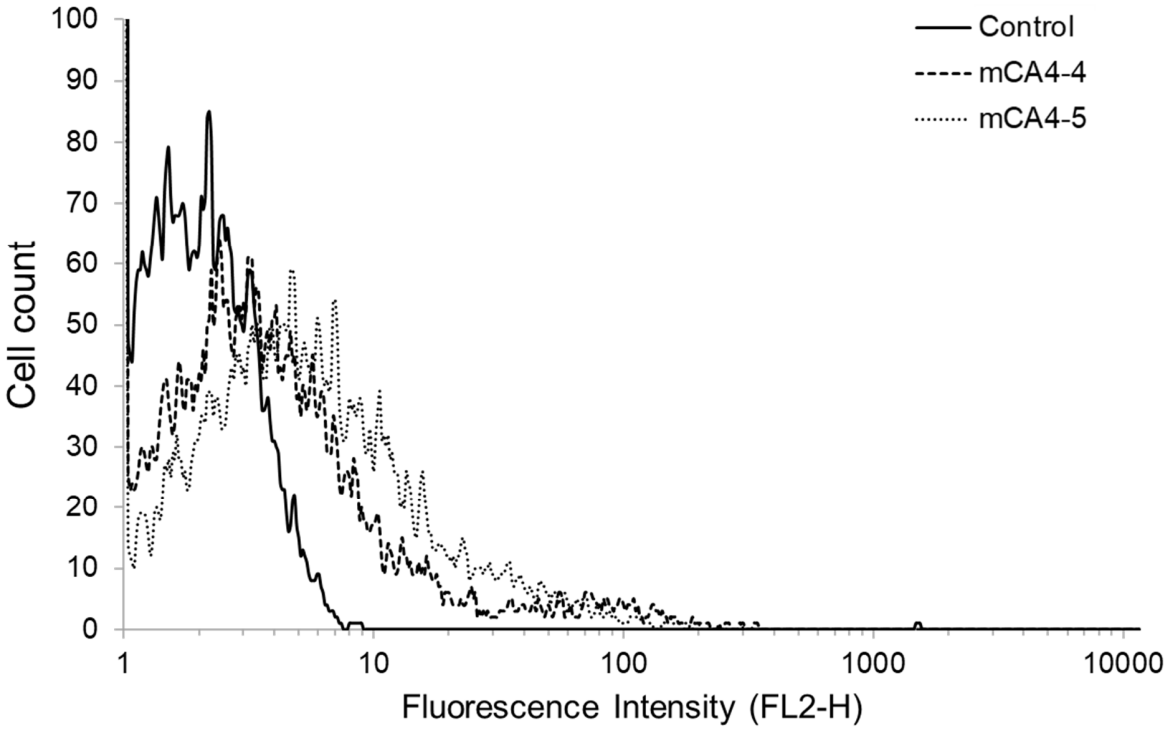


Figure S6: Effect of glutathione treatment on antimicrobial activity of peptides in *E. coli.* Peptide concentrations for mCA4-4 and mCA4-5 were 50 and 10 μM, respectively.



Sample	% Fluorescent cells
Control	–
mCA4-4–TAMRA	19.8%
mCA4-5–TAMRA	32.9%

Figure S7: Flow cytometry data indicating cellular uptake of peptides in Caco-2 cells.

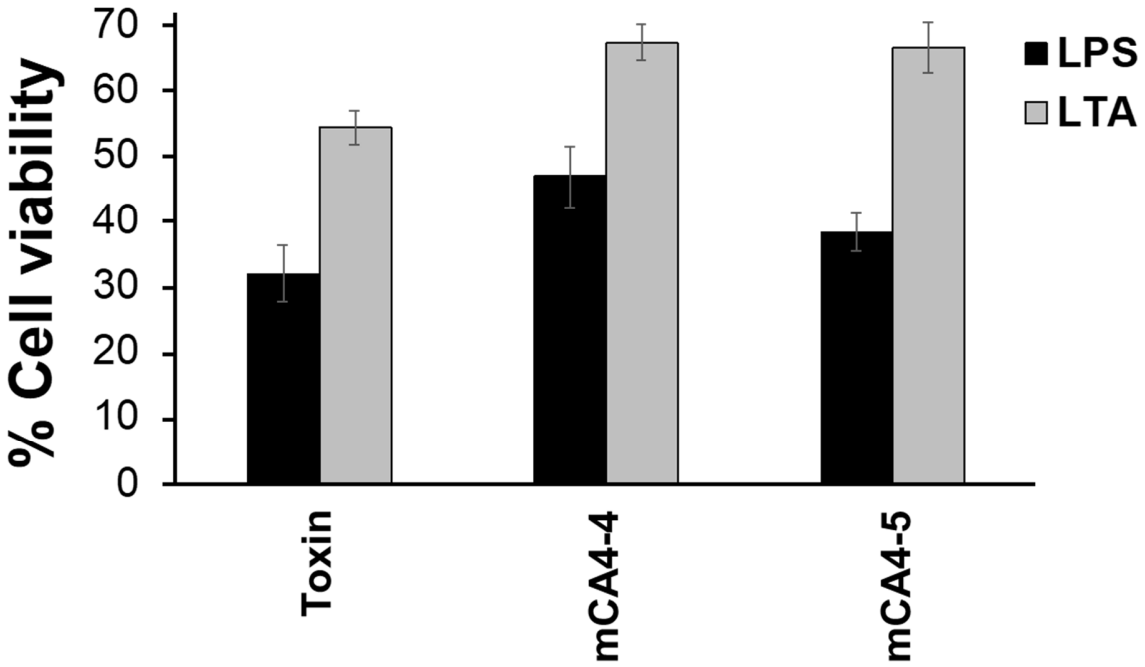


Figure S8: Toxin neutralization capability of peptides.

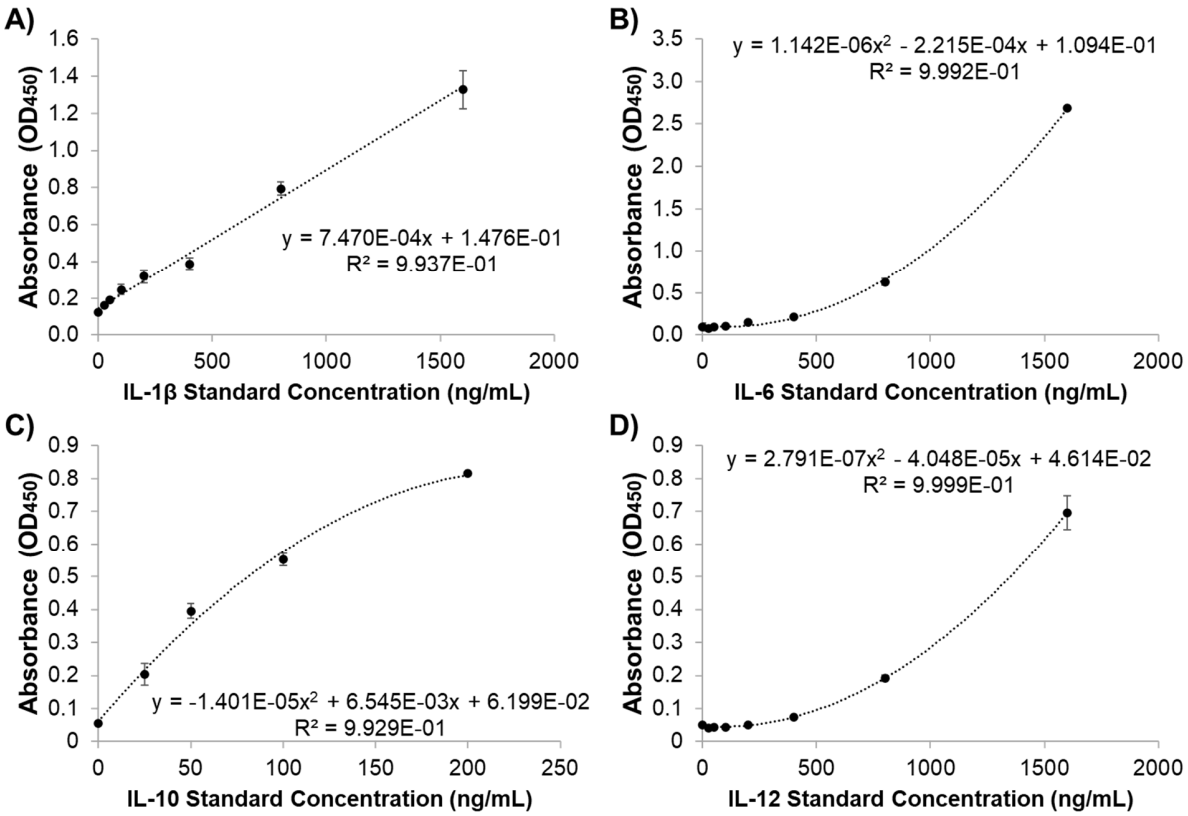


Figure S9: ELISA standard curves of **(A)** IL-1β; **(B)** IL-6; **(C)** IL-10; and **(D)** IL-12.