Role of Cys_I-Cys_{III} disulfide bond on structure and activity of α-conotoxins at human neuronal nicotinic acetylcholine receptors

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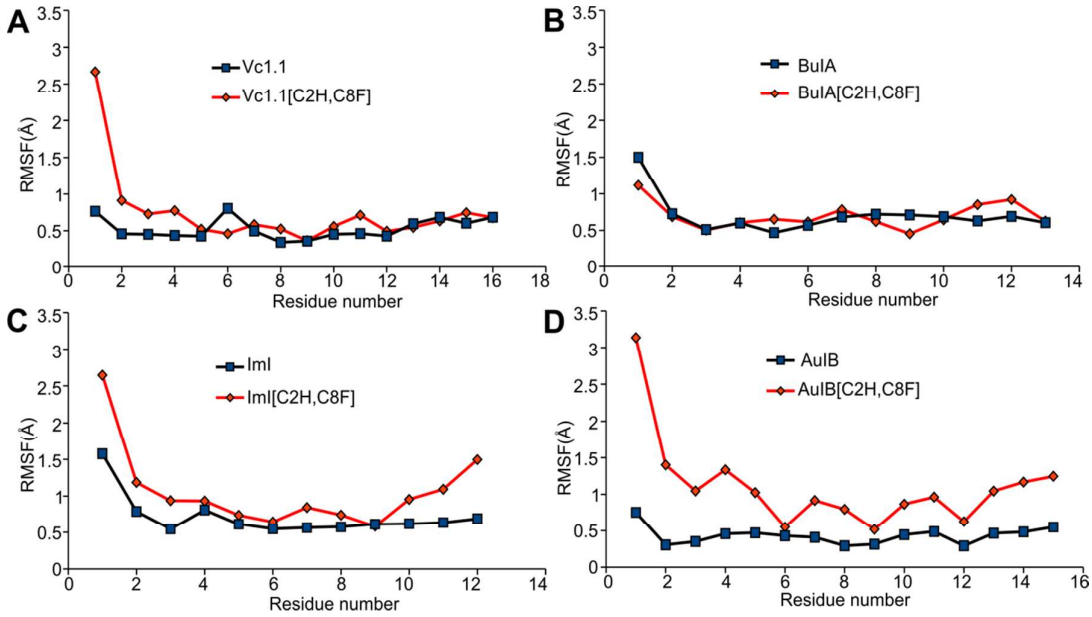

Figure S1. Stability of the wild-type α-conotoxins Vc1.1, BuIA, ImI and AuIB and their disulfide-deleted analogues. (A-D) Backbone RMSF of the wild-type (black line) and mutant (red line) conotoxins.

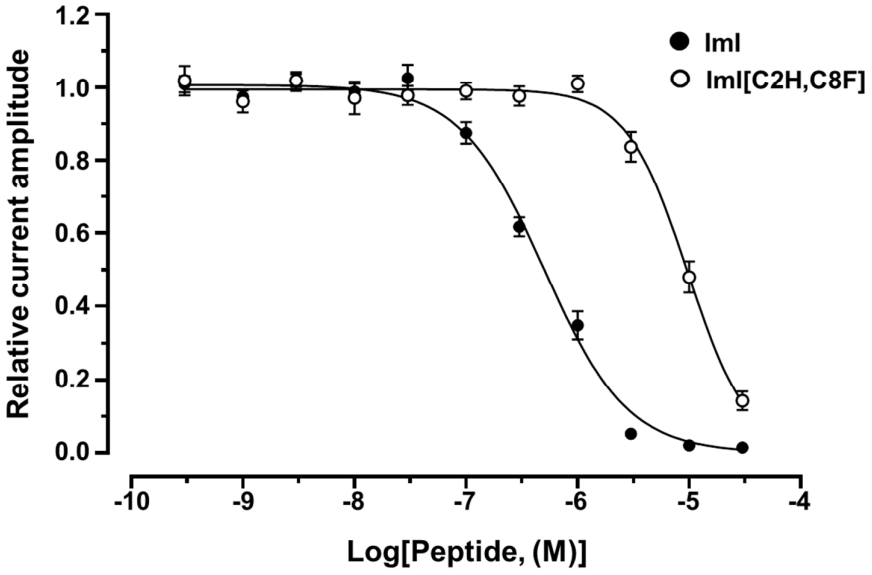

Figure S2. Inhibition of human α7 nAChR subtype by ImI and ImI[C2H,C8F]. Concentration-response curves of ImI and ImI[C2H,C8F] inhibition of ACh-evoked currents mediated by hα7 nAChR. Curves fitted to the concentration–response relationships obtained for ImI and ImI[C2H,C8F] gave IC_{50} values of 497 ± 32 nM and 9.59 ± 0.62 μM (mean ± SEM, n = 5-12), respectively.

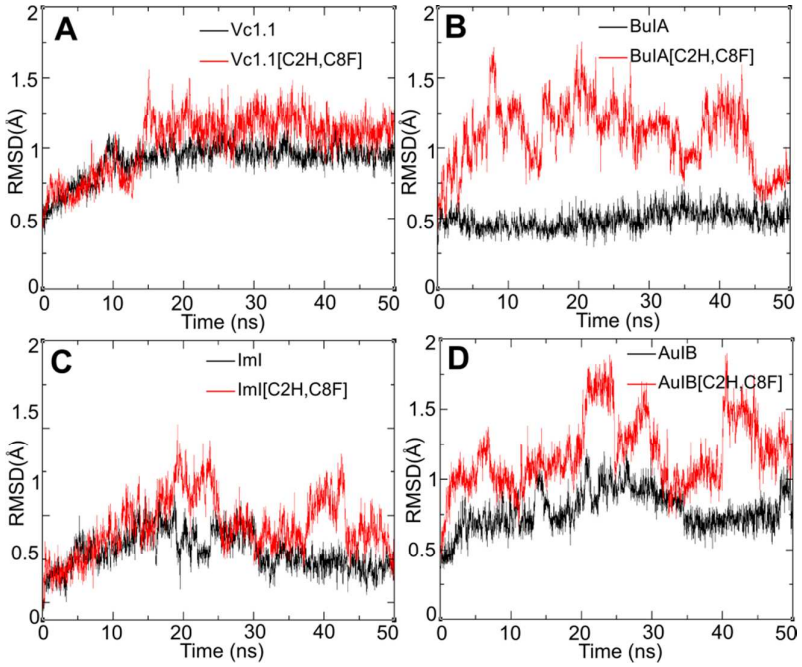

Figure S3. Comparison of the backbone root mean square deviation (RMSD) of the wild type α-conotoxins Vc1.1, BuIA, ImI and AuIB (black line) and their disulphide-deleted analogues (red line) in the nAChR-bound state. A) RMSD of Vc1.1 and Vc1.1[C2H,C8F] calculated on the two α10(+)α9(–) binding sites of the α9α10 nAChR. (B) RMSD of BuIA and BuIA[C2H,C8F] analogue calculated on the two α3(+)β2(–) binding sites of the α3β2 nAChR. (C) RMSD of ImI and ImI[C2H,C8F] calculated on the five α7(+)α7(–) binding sites of the α7 nAChR. (D) RMSD of AuIB and AuIB[C2H,C8F] calculated on the two α3(+)β4(–) binding sites of the α3β4 nAChR.