

## Supporting Information for

# Structural Convergence Among Diverse Toxic $\beta$ -Sheet Ion Channels

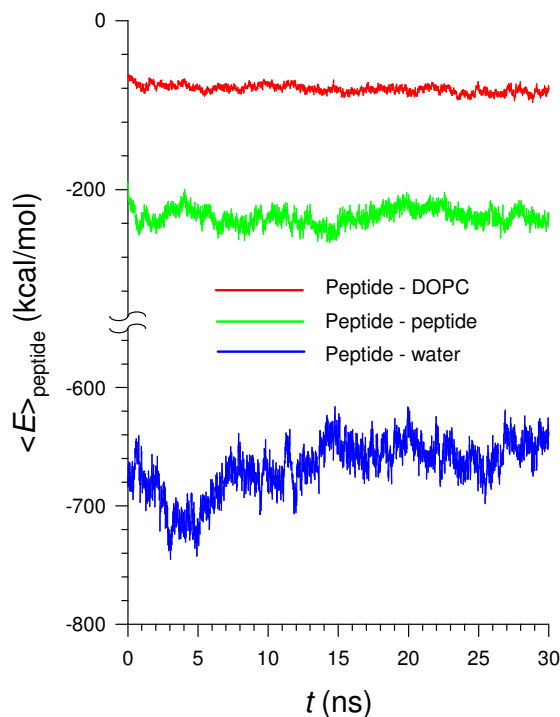
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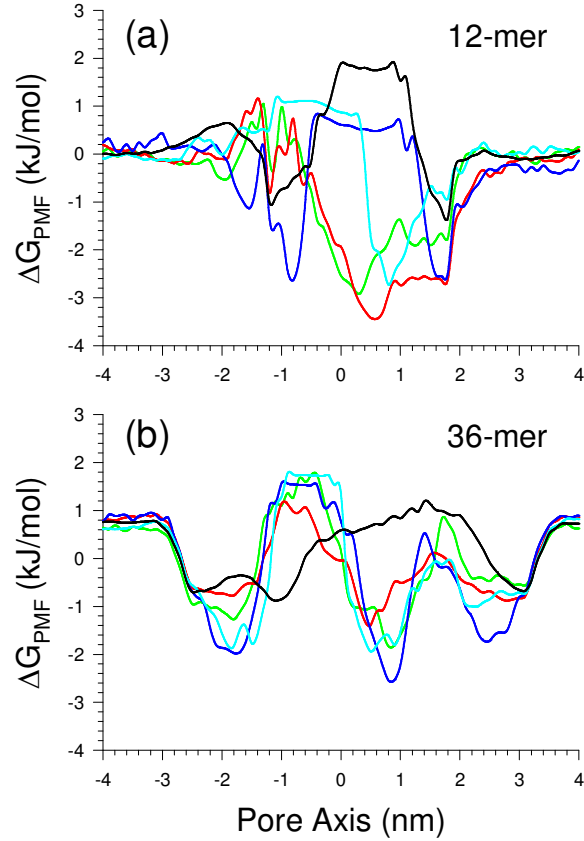
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**Figure S1.** Time series of averaged peptide interaction energy with DOPC lipids (red line), other peptides (green line), and water (blue line) for the 20-mer p3 ( $A\beta_{17-42}$ ) channel.



**Figure S2.** Potential of mean force (PMF),  $\Delta G_{\text{PMF}}$ , calculated using the equation  $\Delta G_{\text{PMF}} = -k_{\text{B}}T \ln(\rho_z/\rho_{\text{bulk}})$ , where  $k_{\text{B}}$  is the Boltzmann constant,  $T$  is the simulation temperature,  $\rho_z$  is the ion density at the position  $z$  along the pore axis, and  $\rho_{\text{bulk}}$  is the ion density in the bulk region, representing the relative free energy profile for  $\text{Mg}^{2+}$  (green lines),  $\text{K}^+$  (red lines),  $\text{Ca}^{2+}$  (blue lines),  $\text{Zn}^{2+}$  (cyan lines), and  $\text{Cl}^-$  (black lines) as a function of the distance along the pore center axis for the (a) 12-mer and (b) 36-mer p3 ( $\text{A}\beta_{17-42}$ ) channels. The PMF results for the 16- and 36-mer were obtained from the simulations in the zwitterionic DOPC bilayer.