marine drugs

MDPI

Supplementary Materials

AbeTx1 Is a Novel Sea Anemone Toxin with a Dual Mechanism of Action on Shaker-Type K^+ Channels Activation

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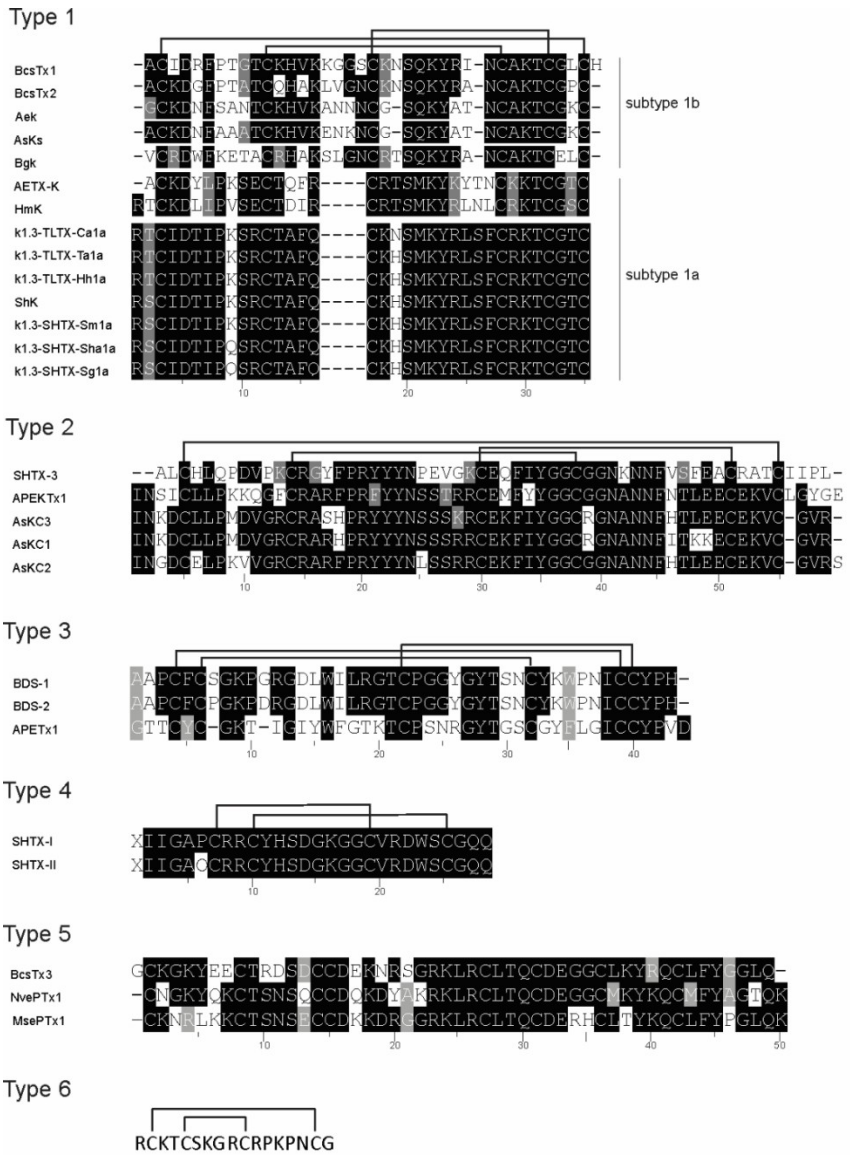

Figure S1. Multiple sequence alignment of sea anemone Kv-toxins. The amino acid sequences are aligned according to their cysteine residues. Disulfide bridge patterns are indicated. Amino acid identities (black boxes) and similarities (gray boxes) are shown. Sea anemone Type 1 Kv-toxins are BcsTx1 (Swiss-Prot C0HJC2), BcsTx2 (Swiss-Prot C0HJC3) from the venom of the *B. caissarum* population from Saint Peter and Saint Paul Archipelago, Aek (=Swiss-Prot # P81897) from *Actinia equina*, AsKs (=Swiss-Prot # Q9TWG1), from *Anemonia sulcata*, Bgk (=Swiss-Prot #P29186) from *Bunodosoma granulifera*, AETX-K (=Swiss-Prot #Q0EAE5) from *Anemonia erythraea*, HmK (=Swiss-Prot #O16846) from *Radianthus magnifica*, κ1.3-TLTX-Ca1a (=GenBank #AB595207) (*Cryptodendrum adhaesivum*), κ1.3-TLTX-Ta1a (=GenBank # AB595209) (*Thalassianthus aster*), κ1.3-TLTX-Hh1a (=GenBank #AB595208) (*Heterodactyla hemprichi*), ShK (=Swiss-Prot #P29187) (*Stichodactyla helianthus*), κ1.3-SHTX-Sm1a (=GenBank #AB595206) (*Stichodactyla mertensii*), κ1.3-SHTX-Sha1a (=GenBank #AB595205) (*Stichodactyla haddoni*), and κ1.3-SHTX-Sg1a (=GenBank #AB595204) (*Stichodactyla gigantea*). Type 2 Kv-toxins are SHTX-3 (Swiss-Prot B1B518) from *Stichodactyla haddoni*; APEKTx1 (Swiss-Prot P86862) from *A. elegantissima*, AsKC3 (Swiss-Prot Q9TWF8), AsKC1 (Swiss-Prot Q9TWG0), and AsKC2 (Swiss-Prot Q9TWF9) from *A. viridis*; Type 3 Kv-toxins are BDS-1 (Swiss-Prot P11494), BDS-2 (Swiss-Prot P59084) from *A. viridis*, and APETx1 (Swiss-Prot P61541) from *A. elegantissima*. Type 4 Kv-toxins are SHTX-I/II (Swiss-Prot P0C7W7) from *S. haddoni*. Type 5 Kv-toxins are BcsTx3 (Swiss-Prot C0HJC4) and mature portions of the putative proteins NvePTx1 (GenBank EDO47375.1) from *N. vectensis*, and MsePTx1 (GenBank FC839755.1) from *M. senile*. The newly discovered Type 6 Kv-toxin is represented by AbeTx1 from *Actinia bermudensis*.