Two almost identical proteins with 70 amino acid residues each, closely packed by four disulfide bridges, and molecular masses of 7899.5 and 7884.7 were isolated and sequenced from the venom of the scorpion Isometrus vittatus from Pakistan. They differ by an acidic amino acid residue (glutamic or aspartic) at the same position 55 of the peptide chain, however, they exhibit the same length, the same charge and are undistinguishable when separated by C(18) reverse phase HPLC. The mixture of the two proteins called IsomTx1 depolarizes the cockroach isolated axon; artificial repolarization is followed by sustained repetitive activity, artificial hyperpolarization facilitates bursting activity observed as an answer to rapid depolarization to -60 mV. The depolarization is antagonized by TTX. In voltage-clamp experiments IsomTx1 increases axonal sodium permeability which has a particular importance between resting and threshold potentials and moderately slows down the fast inactivation. These characteristics closely resemble those of other anti-insect scorpion toxins classified as contractive toxins from Androctonus and Buthotus venoms.