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Patients with Myasthenia Gravis and Thymoma Have Anti-Skeletal Muscle and Anti-Acetylcholine Receptor Antibodies Simultaneously.

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The frequency and mean titer of anti-skeletal muscle (SM) antibody in myasthenic patients with thymoma were significantly high in all stages of severity, while in myasthenic patients without thymoma, they were significantly low. A strong association was found in myasthenic patients between the occurrence of anti-SM antibodies and the presence of thymoma. Our data on a large number of myasthenic sera reveal that coexistence of anti-SM and anti-AChR antibodies is strongly linked to myasthenia gravis associated with thymoma. The measurement of anti-SM antibodies is recommended for demonstration of thymoma in myasthenic patients before surgery.

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Step-Wise Thermal Denaturation of Cobrotoxin, a Snake Venom Neurotoxin from *Naja naja atra* : A Proton Nuclear Magnetic Resonance Study.

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Temperature dependence of proton nuclear magnetic resonance spectra has been followed for cobrotoxin, a postsynaptic neurotoxin from *Naja naja atra* venom. Several aromatic amino acid residues, including the functionally essential Trp-29 located at the tip of the central loop of the molecule, have been found to undergo a thermal structural transition above the global thermal denaturation temperature. It is suggested that a local structure around these residues behaves somehow independently of the rest of the molecule, and that such structural organization may be favorable for a conformational change of a neurotoxin molecule on binding to acetylcholine receptor.

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State of Functionally Essential Trp-29 in Snake Venom Neurotoxins : A Proton Nuclear Magnetic Resonance Study.

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Proton nuclear magnetic resonance (NMR) spectra have been recorded of various neurotoxins from snake venoms. pH dependence of the chemical shifts and resonance intensity has been followed for the functionally essential Trp-29. The indol N-1 proton of Trp-29 in α -bungarotoxin, toxin B, and cobrotoxin exhibits appreciably large upfield shifts as the pH is lowered and the suppressed exchange with the solvent hydrogen at pH 3-4, but not in *Naja haje annulifera* 10 where Asp-31 is replaced with Gly-31. This observation strongly suggests the presence of hydrogen bond between Trp-29 and Asp-31 that is probably important in stabilizing the arrangement of the functionally essential residues to form a distinct binding region for the receptor.