

3. (15 pts) Gorgonian corals (the sea fans and their relatives) are not preyed upon as heavily as many of their smaller cousins. Recently, scientists have isolated a lethal neurotoxin, lophotoxin (LTX), from these creatures. When administered to experimental animals, the first symptom observed was ataxia (loss of muscular coordination), which was followed quickly by general paralysis, curtailment of breathing and death. In isolated nerve + muscle preparations, LTX in very low concentrations inhibited neural stimulated contraction without affecting the muscle's ability to respond to direct electrical stimulation.

A. (10 pts) Postulate a mechanism for lophotoxin's effect that would account for these observations.

B. (5 pts) Describe one test of your hypothesis and indicate clearly the expected results.