Advances in Ricin Antitoxins: From Intoxication to Diagnosis and Treatment

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Message from the Guest Editors

Ricin is a potent (type 2) ribosome-inactivating protein toxin produced in the seeds of the caster bean plant *Ricinus communis*. Accidental and/or intentional exposure to the toxin can have serious consequences for the health and the survival of both humans and animals. This is a consequence of the potency of the toxin along with the prevalence of caster beans in the environment (i.e., increasing the likelihood of exposure). The identification of ricin intoxication in a clinical setting remains very challenging and is further complicated by a delayed onset of symptoms. Additionally, there is a current lack of licensed medical interventions, with supportive therapy representing the main clinical option. Nevertheless, a number of new small molecule inhibitors rationally developed using structural-functional analysis and that affect the intracellular trafficking of the toxin are alternative approaches to the more traditional antibody-based molecules which have also recently demonstrated promise as candidate countermeasures for the treatment of ricin exposure in animal models.

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