

Similarities exist between the Cry toxin mode of action in Lepidoptera and Coleoptera. Cadherins are key receptors for Cry toxins in both orders. In Lepidoptera, Cry1A toxins are protease activated (a) and bind to cadherin receptors on the apical surface of the midgut membrane (b). Cell-death results from either the activation of an intracellular signaling pathway or through the formation of toxin oligomers (c) that bind to N-aminopeptidase (APN) and/or alkaline phosphatase (ALP) (d) to insert in the membrane and form pores that result in cytotoxicity due to osmotic imbalance (e). In Coleoptera, Cry3 protoxin interacts with a gut-specific ADAM metalloproteinase. Toxin or protoxin binding to cadherin results in toxin oligomerization and eventually cell death. Further research is necessary to characterize post-binding steps in the coleopteran model. See [Fabrick et al. \(2009\)](#).

Cry toxin mode-of-action

