



## Advances in Clostridial and Related Neurotoxins

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### Message from the Guest Editor

Botulinum Neurotoxins (BoNTs), the causative agents of the potentially lethal vertebrate disease botulism, comprise a family of protein toxins produced by various bacterial strains of the genus *Clostridium*. In recent years, discoveries of novel BoNTs, as well as potential BoNT homologues in other organisms, have challenged this categorization and expanded the family of BoNTs. Further identification and characterizations of novel and known BoNTs will yield insight into the evolutionary forces driving the diversity of this protein toxin family. Furthermore, genetic methods now allow for construction of recombinant and chimeric BoNTs, enabling directed engineering of BoNTs with defined amino acid or functional domain substitutions. Combined with ongoing structural analyses, these studies will lead to a deeper understanding of the molecular mechanisms underlying the toxicity and pharmacologic potential of the large family of BoNTs. Both approaches, exploring novel BoNTs and recombinant studies, are exciting avenues of research with the potential to open the doors to unlocking the underlying molecular and evolutionary mechanisms of the high potency of BoNTs.





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