

Special Issue

Adenylate Cyclase (CyaA) Toxin

Message from the Guest Editor

The adenylate cyclase (CyaA) toxin is produced by *Bordetella pertussis*, the causative agent of whooping cough. The incidence of pertussis is currently increasing and represents a global public health concern.

Bordetella pertussis, a Gram-negative bacteria, was identified by Jules Bordet and Octave Gengou. During the last few decades, multidisciplinary approaches have contributed to improve our knowledge on CyaA and showed that this toxin plays a crucial role in the early stages of respiratory tract colonization by disrupting the host immune response. CyaA is a 1706-residue long, multi-domain and bifunctional toxin. This toxin is the unique well-characterized bacterial toxin able to translocate its catalytic domain directly across the plasma membrane of target cells. The molecular mechanism by which CyaA intoxicates host cells remains, however, largely unknown. Recent advances worldwide open new perspectives for both basic sciences and CyaA-based biotechnological applications. These various aspects are discussed in the *Toxins* on the adenylate cyclase toxin.

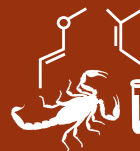
Guest Editor

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