

How to kill a mocking bug - Structural Insights into Tc toxin complex action

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Abstract

Tripartite Tc toxin complexes of bacterial pathogens perforate the host membrane by forming channels that translocate toxic enzymes into the host, including humans. The underlying mechanism is complex but poorly understood. In my talk I will present the first high-resolution structure of a complete 1.7 MDa Tc toxin complex composed of TcA, TcB and TcC. TcB and TcC form a large cocoon, in which the toxic domain resides and is autoproteolytically cleaved. Binding of TcB/TcC to the pore-forming and receptor-binding TcA opens the cocoon and results in a continuous protein translocation channel, in which the toxic domain is secreted. Our results allows us for the first time to understand key steps of infections involving Tc toxins at molecular level and shed new light on the interaction of bacterial pathogens, such as the plague pathogen *Yersinia pestis*, with their hosts.

References:

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