

PRODUCT INFORMATION



Adenylate Cyclase Toxin from *Bordetella pertussis* (recombinant, frozen liquid) Item No. 28211

Overview and Properties

Synonym:	Adenylyl Cyclase Toxin
Contents:	Each vial contains 50 µg of recombinant adenylate cyclase toxin in 39 µl of 0.05 M Tris-HCl, 8 M urea, pH 8.0
Storage:	-20°C (as supplied)
Stability:	≥2 years
Purity:	≥90% (estimated by SDS-PAGE)
Special Conditions:	Handle gently; do not vortex

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Adenylate cyclase toxin is a virulence factor in *B. pertussis*.¹ It is composed of an adenylate cyclase domain that binds calmodulin and an RTX hemolysin domain that contains a pore-forming domain, an activation domain with two lysine acylation sites, calcium binding repeats, and a C-terminal secretion signal. The calcium binding repeat domain binds to complement receptor 3 (CD11b/CD18) on sentinel cells and the pore-forming domain allows entry of the adenylyl cyclase domain, which increases cAMP and calcium levels, permeabilizes the membrane, inhibits phagocytic functions, and may induce cell death through apoptosis or necrosis. Adenylate cyclase toxin has been used in the development of a microsphere-based multiplex antibody capture assay to quantify antibody amounts in acellular pertussis vaccines.²

References

1. Novak, J., Cerny, O., Osickova, A., *et al.* Structure-function relationships underlying the capacity of *Bordetella* adenylate cyclase toxin to disarm host phagocytes. *Toxins (Basel)* **9(10)**, E300 (2017).
2. Rajam, G., Carlone, G., Kim, E., *et al.* Development and validation of a robust multiplex serological assay to quantify antibodies specific to pertussis antigens. *Biologicals* **57**, 9-20 (2019).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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