

## Anti-Adenylate Cyclase toxin [3D1] Standard Size Ab01117-23.0

This chimeric rabbit antibody was made using the variable domain sequences of the original Mouse IgG1 format, for improved compatibility with existing reagents, assays and techniques.

**Isotype and Format:** Rabbit IgG, Kappa

**Clone Number:** 3D1

**Alternative Name(s) of Target:** Adenylyl Cyclase Toxin; Adenyl Cyclase toxin; ACT; Cya A; Bordetella pertussis Toxin; CyaA; ADCY Tox

**UniProt Accession Number of Target Protein:** C8C508

**Published Application(s):** IP, neutralising/inhibition assays, WB, ELISA, FC

**Published Species Reactivity:** Bordetella pertussis

**Immunogen:** This antibody was generated in mouse against Bordetella pertussis adenylate cyclase toxin and recognizes the distal portion of the catalytic domain (amino acids 373-399).

**Specificity:** This antibody was generated against Bordetella pertussis adenylate cyclase toxin and recognizes the distal portion of the catalytic domain (amino acids 373-399). Adenylate cyclase toxin (ACT or Cya A) is one of several virulence factors produced by the bacterium Bordetella pertussis. This toxin invades eukaryotic cells and catalyzes the conversion of ATP into cyclic AMP (cAMP). This leads to inhibition of host cell immune function and macrophage death by apoptosis. The adenylate cyclase protein is composed of a catalytic domain (amino acids 1 to 400), a hydrophobic region (amino acids 500 to 700), a glycine/aspartate-rich repeat unit (amino acids 1000 to 1600), and the C-terminal domain (amino acids 1600-1706).

**Application Notes:** In the original study, this antibody was used in conjunction with other 11 mAbs to perform epitope mapping against Bordetella pertussis adenylate cyclase toxin, and to evaluate the roles of these epitopes on toxin function (Lee et al., 1999). This antibody has also been used in various application, such as ELISA, FACS, Western Blotting and inhibition/neutralising assays. Example of functional studies in which this antibody could be utilised include those conducted by Weingart et al. (Infect Immun. 2000) to demonstrate that adenylate cyclase toxin inhibits both Fc receptor-mediated attachment and phagocytosis of B. pertussis by neutrophils, by Martín et al. (Sci Rep. 2015) to delineate the mechanism by which adenylate cyclase toxin promotes bacterial internalisation into non phagocytic cells, and by Finley et al. (PLoS Biol. 2018) to review how an adenylate cyclase toxin uses bait and switch tactics in its activation.

**Antibody First Published in:** Lee et al. Epitope Mapping of Monoclonal Antibodies against Bordetella

pertussis Adenylate Cyclase Toxin. Infect Immun. 67(5): 2090-5 (1999). [PMID:10225859](#)

**Note on publication:** Describes the original generation of this antibody and its subsequent applications in epitope mapping against Bordetella pertussis adenylate cyclase toxin.

## Product Form

**Size:** 200 µg Purified antibody.

**Purification:** Protein A affinity purified

**Supplied In:** PBS with 0.02% Proclin 300.

**Storage Recommendation:** Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

**Concentration:** 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.