

Antibody Datasheet

Product Name:	Mouse anti Cholera Toxin Beta subunit
Clone number:	E10
Isotype:	Mouse IgG _{2a}
Product code:	MAB12238-100
Batch Number:	19030615
Amount:	0.1mg
Concentration:	1mg/ml
Buffer:	Phosphate Buffered Saline pH7.4
Preservative:	0.09% Sodium Azide (NaN ₃)
Immunogen:	Purified beta-subunit of cholera toxin
Purification:	The antibody was purified by affinity chromatography on protein A sepharose.
Specificity:	Antibody is specific for the Beta subunit of <i>Vibrio cholerae</i> toxin, as determined in WB under reducing conditions.
Applications:	ELISA, WB
Secondary reagents:	Goat anti mouse IgG:HRP (PAB21441HRP)
Antigen background:	Vibrios are highly motile, curved shaped rods with a single polar flagellum that is used for self-propulsion. <i>Vibrio cholerae</i> (<i>V.cholerae</i>) is a non-spore-forming, gram-negative, facultative anaerobic bacterium of the family <u>Vibrionaceae</u> . <i>V. cholerae</i> is the causative agent of cholera, which is a diarrhoeal disease of the small intestine. Transmission of <i>V.cholerae</i> to humans occurs via the faecal-oral route and through the ingestion of contaminated water or food (WHO).



Cholera is asymptomatic in many cases but does cause severe, watery diarrhoea and dehydration in some individuals, which if untreated can rapidly lead to death. Cholera is reported to be endemic in many countries and, to date, seven cholera pandemics have been reported globally. The current pandemic is characterized by the predominance of the O1 serogroup of the El Tor biotype, with sporadic emergence of serogroup O139 ([WHO](#)).

The two major virulence factors expressed by *V. cholerae* O1 and O139 are cholera toxin (CT) and the toxin-coregulated pilus (TCP). Cholera toxin is an oligomeric complex made up of six protein subunits: a single copy of the A subunit and five copies of the B subunit. Subunit B binds to the cell surface via GM1 gangliosides on the surface of target cells. Once bound, the entire toxin complex is endocytosed by the cell and the cholera toxin A1 (CTA1) chain is released by the reduction of a disulfide bridge. Once inside the cell subunit A activates G protein which then activates adenylate cyclase, eventually leading to enhanced efflux of chloride ions from the intestinal cells, and rapid water loss via the intestine.

References:

World Health Organization: Media centre; Cholera

Silva AJ, Benitez JA. (2016). *Vibrio cholerae* Biofilms and Cholera Pathogenesis. PLoS Negl Trop Dis. Feb 4;10(2)

Storage:

Store at +4°C for up to three months, or at -20°C for longer periods
The antibody is shipped at ambient temperature.
Avoid repeated freeze/thaw cycles.

