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Anthrax Protective Antigen Antibody

Catalog # ASC10276

Product Information

Application	E
Primary Accession	P13423
Other Accession	AAF86457, 9280533
Reactivity	Bacteria
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	85811
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Anthrax protective antigen antibody can be used for the detection of Anthrax protective antigen protein in ELISA. It will detect 10 ng of free peptide at 1 g/mL.

Additional Information

Gene ID	45025512
Other Names	Anthrax Protective Antigen Antibody: pag, pXO1-110, BXA0164, GBAA_pXO1_0164, Protective antigen, Anthrax toxins translocating protein, PA, Protective antigen
Target/Specificity	pxo1_110;
Reconstitution & Storage	Anthrax Protective Antigen antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Anthrax Protective Antigen Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	pagA
Synonyms	pag
Function	Protective antigen constitutes one of the three proteins composing the anthrax toxin; it mediates attachment to host cells and translocation of edema factor (EF) and lethal factor (LF) into the host cytoplasm (PubMed:11700562, PubMed:14507921, PubMed:15243628, PubMed:15326297). PA associated with LF forms the lethal toxin (LeTx) and causes death when injected; PA associated with EF forms the edema toxin

	(EdTx) and produces edema (PubMed:1651334). PA induces immunity to infection with anthrax (PubMed:11544370).
Cellular Location	[Protective antigen]: Secreted. Host cell membrane Note=Secreted through the Sec-dependent secretion pathway (PubMed:12606539). Therefore, PA is translocated across the membrane in an unfolded state and then it is folded into its native configuration on the trans side of the membrane, prior to its release to the environment (PubMed:12606539). PA requires the extracellular chaperone PrsA for efficient folding (PubMed:12606539). It circulates in the host blood and binds host cell receptors at the cell surface (PubMed:11700562, PubMed:14507921).

Background

Anthrax Protective Antigen Antibody: Anthrax infection is initiated by the inhalation, ingestion, or cutaneous contact with Bacillus anthracis endospores. B. anthracis produces three polypeptides that comprise the anthrax toxin: protective antigen (PA), lethal factor (LF), and edema factor (EF). PA binds to two related proteins on the cell surface; these are termed tumor epithelial marker 8 (TEM8)/anthrax toxin receptor (ATR) and capillary morphogenesis protein 2 (CMG2), although it is still unclear which is physiologically relevant. Following PA binding to its receptor, PA is cleaved into two fragments by a furin-like protease. The bound fragment binds both LF and EF; the resulting complex is then endocytosed which allows the translocation of LF and EF into the cytoplasm. These toxins are usually sufficient to cause rapid cell death, and often the death of the organism.

References

Schwartz MN. Recognition and management of anthrax - an update. New Engl. J. Med. 2001; 345:1621-6.
Moayeri M and Leppla SH. The roles of anthrax toxin in pathogenesis. Curr. Opin. Microbiol. 2004; 7:19-24.
Bradley KA, Mogridge J, Mourez M, et al. Identification of the cellular receptor for anthrax toxin. Nature 2001; 414:225-9.
Scobie HM, Rainey GJ, Bradley KA, et al. Human capillary morphogenesis protein 2 functions as an anthrax toxin receptor. Proc. Natl. Acad. Sci. USA 2003; 100:5170-4.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.