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Anthrax Protein Detection Set

Cat. No.: PSI-1811

Anthrax Protein Detection Set

Specifications

SPECIES REACTIVITY:	Human
IMMUNOGEN:	Rabbit polyclonal antibodies were raised against peptides corresponding to amino acid sequences from each of the corresponding proteins.
TESTED APPLICATIONS:	IF, IHC, WB
APPLICATIONS:	These polyclonal antibodies can be used for detection of Anthrax PA, LF or EF proteins in bodily fluid or tissue by ELISA. Immunogenic peptides are provided as positive controls and to determine protein concentration. Each antibody will detect 10 ng of its corresponding peptide. ATR antibody can be used for detection of ATR in immunoblot, immunohistochemistry, immunoflourescence, and Immunoflourescence. applications.
SPECIFICITY:	ATR antibody will recognize all three isoforms.

Properties

PURIFICATION:	Antibodies are supplied as affinity chromatography purified IgG.
PHYSICAL STATE:	Liquid
BUFFER:	PBS containing 0.02% sodium azide.
CONCENTRATION:	Antibody 1 mg/mL Peptide 200 µg/mL

STORAGE CONDITIONS:	Stable at 4˚C for three months, store at -20˚C for up to one year.

Additional Info

USER NOTE:	Optimal dilutions for each application to be determined by the researcher.

Background and References

BACKGROUND:	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). PA is cleaved into two fragments by a furin-like protease after receptor binding. The bound fragment binds both LF and EF; the resulting complex is then endocytosed into the cell which allows the release of LF and EF into the cytoplasm. These toxins are usually sufficient to cause rapid cell death, and often the death of the infected organism. LF is the primary toxin of anthrax and functions as a highly specific protease that cleaves members of the mitogen-activated protein kinase kinase (MAPKK) family near their amino terminus, interfering with MAPK signaling and inducing apoptosis . EF is a calmodulin and Ca++-dependent adenylate cyclase responsible for the edema seen in the disease. It is thought to benefit the B. anthracis bacteria by inhibiting cells of the host immune system. The Anthrax toxin receptor (ATR) was initially discovered as the tumor endothelial marker 8 (TEM8). This protein, which exists in three isoforms (36, 40, and 60 kDa), is highly expressed in tumor vessels as well as in the vasculature of developing embryos, suggesting that it may normally play a role in angiogenesis in addition to its role as the anthrax toxin receptor. **For images please see PDF data sheet**
REFERENCES:	1) Schwartz MN. Recognition and management of anthrax - an update. New Engl. J. Med. 2001; 345:1621-6.
	2) Moayeri M and Leppla SH. The roles of anthrax toxin in pathogenesis. Curr. Opin. Microbiol. 2004; 7:19-24.
	3) Bradley KA, Mogridge J, Mourez M, et al. Identification of the cellular receptor for anthrax toxin. Nature 2001; 414:225-9.
	4) 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.

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