SANTA CRUZ BIOTECHNOLOGY, INC.

YopE (bL-20): sc-17411

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The three *Yersenia* species that are pathogenic to man, *Y. pestis*, *Y. pseudotuberculosis* and *Y. enterocolitica*, all share the common ability to deliver bacterial effector proteins called Yops inside eukaryotic cells. These effector Yops allow the bacteria to survive and proliferate in the extracellular matrix in the lymphoid system of the host. Upon infection of cultured epithelial cells, extracellular *Y. pseudotuberculosis* and *Y. enterocolitica* translocate cytotoxin YopE across the host cell plasma membrane. YopE and YopH are thus modular proteins composed of a secretion domain, a translocation domain and a C-terminal effector domain. Translocation of YopE and YopH across the host cell's membrane is also dependent upon secretion of YopB and YopD by the same bacterium. The surface protein YadA promotes the surface attachment of *Y. pseudotuberculosis* and *Y. enterocolitica*, however, it may have other functions such as conferring serum (complement) resistance onto the bacteria. YopH, YopE, and YadA act in concert towards neutrophil attack to enable extracellular survival of *Y. enterocolitica* in host tissue.

REFERENCES

1. Ruckdeschel, K., et al. 1996. Differential contribution of *Yersinia enterocolitica* virulence factors to evasion of microbicidal actionof neutrophils. Infect. Immun. 3: 724-733.
2. Cornelis, G.R., et al. 1998. The virulence plasmid of *Yersinia*, an antihost genome. Microbiol. Mol. Biol. Rev. 4: 1315-1352.
3. Boyd, A.P., et al. 2000. *Yersinia enterocoli-tica* can deliver Yop proteins into a wide range of cell types: development of a delivery system for heterologous proteins. Eur. J. Cell Biol. 10: 659-671.
4. Boyd, A.P., et al. 2000. Competition between the Yops of *Yersinia enterocolitica* for delivery into eukaryotic cells: role of the SycE chaperone binding domain of YopE. J. Bacteriol. 17: 4811-4821.
5. Andor, A., et al. 2001. YopE of *Yersinia*, a GAP for Rho GTPases, selectively modulates Rac-dependent actin structures in endothelial cells. Cell. Microbiol. 5: 301-310.

SOURCE

YopE (bL-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of YopE of *Yersinia pestis* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17411 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

YopE (bL-20) is recommended for detection of YopE of *Yersinia pestis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

1. Zauberman, A., et al. 2009. *Yersinia pestis* endowed with increased cytotoxicity is avirulent in a bubonic plague model and induces rapid protection against pneumonic plague. PLoS ONE 4: e5938.
2. Tidhar, A., et al. 2009. The NlpD lipoprotein is a novel *Yersinia pestis* virulence factor essential for the development of plague. PLoS ONE 4: e7023.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.