Francisella tularensis LPS (3511): sc-58129



The Power to Questio

BACKGROUND

Francisella tularensis is a small, nonmotile, aerobic, Gram-negative coccobacillus that causes Tularemia, a potentially lethal and very infectious illness. Francisella tularensis has a thin lipopolysaccharide-containing envelope and is a non-spore-forming microbe that has the ability to survive for weeks at low temperatures in water, moist soil, hay, straw and decaying animal carcasses. Lipopolysaccaride (LPS) is a main species-specific antigen of Francisella tularensis. The LPS of Francisella tularensis differs from LPS of other Gram-negative bacteria in that it has no properties of a classical endotoxin, such as interaction with Toll-like receptor, which usually stimulates a strong pro-inflammatory response. This poor innate recognition of Francisella tularensis allows the microbe to evade early recognition by the host to promote its pathogenesis in mammals.

REFERENCES

- Pavlovich, N.V., Aronova, N.V., Onoprienko, N.N., Sorokin, V.M. and Mazrukho, B.L. 2000. Species- and genus-specific antigenic epitopes of Francisella tularensis lipopolysaccharides. Mol. Gen. Mikrobiol. Virusol. 3: 7-12.
- Muta, T. and Takeshige, K. 2001. Essential roles of CD14 and lipopolysaccharide-binding protein for activation of Toll-like receptor (TLR)2 as well as TLR4 reconstitution of TLR2- and TLR4-activation by distinguishable ligands in LPS preparations. Eur. J. Biochem. 268: 4580-4589.
- Kieffer, T.L., Cowley, S., Nano, F.E. and Elkins, K.L. 2003. Francisella novicida LPS has greater immunobiological activity in mice than Francisella tularensis LPS, and contributes to Francisella tularensis murine pathogenesis. Microbes Infect. 5: 397-403.
- Onoprienko, N.N. and Pavlovich, N.V. 2003. The role of lipopolysaccharide in toxicity of *Francisella* genus bacteria. Mol. Gen. Mikrobiol. Virusol. 3: 25-28.
- 5. Telepnev, M., Golovliov, I., Grundström, T., Tärnvik, A. and Sjöstedt, A. 2003. *Francisella tularensis* inhibits Toll-like receptor-mediated activation of signalling and secretion of TNF α and IL-1 from murine macrophages. Cell. Microbiol. 5: 41-51.
- Chen, W., KuoLee, R., Shen, H., Bùsa, M. and Conlan, J.W. 2004. Toll-like receptor 4 (TLR4) does not confer a resistance advantage on mice against low-dose aerosol infection with virulent type A *Francisella tularensis*. Microb. Pathog. 37: 185-191.
- Cole, L.E., Elkins, K.L., Michalek, S.M., Qureshi, N., Eaton, L.J., Rallabhandi, P., Cuesta, N. and Vogel, S.N. 2006. Immunologic consequences of *Francisella tularensis* live vaccine strain infection: role of the innate immune response in infection and immunity. J. Immunol. 176: 6888-6899.
- 8. Dueñas, A.I., Aceves, M., Orduña, A., Díaz, R., Sánchez Crespo, M. and García-Rodríguez, C. 2006. *Francisella tularensis* LPS induces the production of cytokines in human monocytes and signals via Toll-like receptor 4 with much lower potency than *E. coli* LPS. Int. Immunol. 18: 785-795.

RESEARCH USE

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

SOURCE

Francisella tularensis LPS (3511) is a mouse monoclonal antibody raised against *Francisella tularensis*.

PRODUCT

Each vial contains 100 μg lgG_3 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Francisella tularensis LPS (3511) is recommended for detection of Francisella tularensis LPS of *Francisella tularensis* origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

STORAGE

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

PROTOCOLS

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

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3801 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com