

Francisella tularensis LPS (1.B.287): sc-71125

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. Lipopolysaccharide (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

1. 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.* 7:12.
2. 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.
3. Kieffer, T.L., Cowley, S., Nano, F.E. and Elkins, K.L. 2003. *Francisella novicida* LPS has greater immunobiological activity in mice than *F. tularensis* LPS, and contributes to *F. novicida* murine pathogenesis. *Microbes. Infect.* 5: 397-403.
4. 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.
6. Chen, W., KuoLee, R., Shen, H., Büsa, M. and Conlan, J.W. 2004. Toll-like against low-dose aerosol infection with virulent type A *Francisella tularensis*. *Microb. Pathog.* 37: 185-191.
7. 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.
9. Li, H., Nookala, S., Bina, X.R., Bina, J.E. and Re, F. 2006. Innate immune response to *Francisella tularensis* is mediated by TLR2 and caspase-1 activation. *J. Leukoc. Biol.* 80: 766-773.

SOURCE

Francisella tularensis LPS (1.B.287) is a mouse monoclonal antibody raised against pooled water-soluble antigens from disintegrated microbial mass of *Francisella tularensis* vaccine strain.

PRODUCT

Each vial contains 200 μ g IgG₃ in 1.0 mL PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Francisella tularensis LPS (1.B.287) 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.

RESEARCH USE

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

PROTOCOLS

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