

Staphylococcus aureus TSST-1 (5): sc-73360

BACKGROUND

Staphylococcus aureus is a Gram-positive coccus that frequently lives on the skin or in the nose of humans. This microbe produces β -lactamase, enzymes which break down the β -lactam ring of the penicillin molecule, making it resistant to most penicillin and cephalosporins. *Staphylococcus aureus* causes a broad range of illnesses including minor skin infections and abscesses, to life-threatening diseases such as pneumonia, meningitis, endocarditis, septicemia and toxic shock syndrome (TSS). Toxic shock syndrome toxin-1 (TSST-1) is a staphylococcal secreted exotoxin that is responsible for TSS since it leads to non-specific binding of MHC II with T cell receptors, resulting in polyclonal T cell activation. The toxin also plays a role in the pathogenesis of several autoimmune and allergic diseases associated with B cell hyperactivity, and it produces antagonistic effects on IL-4-induced IgE synthesis. Symptoms of TSS include high fever, accompanied by low blood pressure, malaise and confusion, which can rapidly progress to stupor, coma and multi-organ failure.

REFERENCES

1. Curran, J.P., et al. 1980. Neonatal staphylococcal scalded skin syndrome: massive outbreak due to an unusual phage type. *Pediatrics* 66: 285-290.
2. Hofer, M.F., et al. 1996. Differential effects of staphylococcal toxic shock syndrome toxin-1 on B cell apoptosis. *Proc. Natl. Acad. Sci. USA* 93: 5425-5430.
3. Hiramatsu, K., et al. 1997. Methicillin-resistant *Staphylococcus aureus* clinical strain with reduced vancomycin susceptibility. *J. Antimicrob. Chemother.* 40: 135-136.
4. Jabara, H.H., et al. 1997. The superantigen toxic shock syndrome toxin-1 induces CD40 ligand expression and modulates IgE isotype switching. *Int. Immunol.* 8: 1503-1510.
5. Chambers, H.F. 2001. The changing epidemiology of *Staphylococcus aureus*? *Emerg. Infect. Dis.* 7: 178-182.
6. Chang, S., et al. 2003. Infection with vancomycin-resistant *Staphylococcus aureus* containing the vanA resistance gene. *N. Engl. J. Med.* 348: 1342-1347.
7. Buonpane, R.A., et al. 2005. Characterization of T cell receptors engineered for high affinity against toxic shock syndrome toxin-1. *J. Mol. Biol.* 353: 308-321.
8. Parsonnet, J., et al. 2005. Prevalence of toxic shock syndrome toxin-1-producing *Staphylococcus aureus* and the presence of antibodies to this superantigen in menstruating women. *J. Clin. Microbiol.* 43: 4628-4634.
9. Hirano, T., et al. 2006. Bacterial superantigen TSST-1 attenuates suppressive efficacy of glucocorticoid and calcineurin inhibitors against blastogenesis of peripheral blood mononuclear with antineutrophil cytoplasmic antibody-associated vasculitis and nephrosis. *Int. Immunopharmacol.* 6: 924-934.

SOURCE

Staphylococcus aureus TSST-1 (5) is a mouse monoclonal antibody raised against TSST-1 of *Staphylococcus aureus* origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Staphylococcus aureus TSST-1 (5) is recommended for detection of toxic shock syndrome toxin 1 (TSST-1) of *Staphylococcus aureus* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000); may cross-react with SEA and SEB.

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.