



PspA (bF-19): sc-17483

BACKGROUND

Streptococcus pneumoniae is a major bacterial pathogen that causes diseases such as pneumonia and meningitis in humans. The streptococcal cysteine protease, otherwise known as SpeB, is one of the major virulence factors produced by group A streptococci (GAS). The 28 kDa SpeB protein carries laminin-binding activity of the bacteria. SpeB is not only a secreted molecule it also occurs tightly bound to the bacterial cell surface. Thus, in contrast to the previous view of SpeB as mainly an extracellular protease, it is also present as a streptococcal surface molecule with binding activity to laminin and other glycoproteins. Pneumococcal surface protein A, otherwise identified as PspA, is another antigen of *Streptococcus pneumoniae*. PspA, a lactoferrin binding protein, is a virulence factor of the bacteria. The amino-terminal domain of PspA is a functional module essential for full pneumococcal infectivity.

REFERENCES

- Kansal, R.G., McGeer, A., Low, D.E., Norrby-Teglund, A., and Kotb, M. 2000. Inverse relation between disease severity and expression of the streptococcal cysteine protease, SpeB, among clonal M1T1 isolates recovered from invasive group A streptococcal infection cases. *Infect. Immun.* 11: 6362-6369.
- Briles, D.E., Hollingshead, S.K., King, J., Swift, A., Braun, P.A., Park, M.K., Ferguson, L.M., Nahm, M.H., and Nabors, G.S. 2000. Immunization of humans with recombinant pneumococcal surface protein A (rPspA) elicits antibodies that passively protect mice from fatal infection with *Streptococcus pneumoniae* bearing heterologous PspA. *J. Infect. Dis.* 6: 1694-1701.
- Lamani, E., McPherson, D.T., Hollingshead, S.K., and Jedrzejewski, M.J. 2000. Production, characterization, and crystallization of truncated forms of pneumococcal surface protein A from *Escherichia coli*. *Protein Expr. Purif.* 3: 379-388.
- Hytonen, J., Haataja, S., Gerlach, D., Podbielski, A., and Finne, J. 2001. The SpeB virulence factor of *Streptococcus pyogenes*, a multifunctional secreted and cell surface molecule with streptadhesin, laminin-binding and cysteine protease activity. *Mol. Microbiol.* 2: 512-519.
- Hakansson, A., Roche, H., Mirza, S., McDaniel, L.S., Brooks-Walter, A., and Briles, D.E. 2001. Characterization of binding of human lactoferrin to pneumococcal surface protein A. *Infect. Immun.* 5: 3372-3381.

SOURCE

PspA (bF-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PspA of *S. pneumoniae* 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-17483 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PspA (bF-19) is recommended for detection of PspA of *S. pneumoniae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.