

SigD (bN-16): sc-17442

BACKGROUND

Salmonellosis is an infection with the bacteria *Salmonella*. This infection often results in a diarrheal illness in humans. SigD, otherwise known as invasion gene D protein, *Salmonella* invasion gene, *Salmonella typhimurium*, sigma factor α 28, α F and FliA, directs RNA polymerase to transcribe the genes required for flagellar biosynthesis and chemotaxis in many bacteria, including *Bacillus subtilis*, *Legionella pneumophila*, *Salmonella typhimurium*, *Escherichia coli*, *Yersinia enterocolitica*, *Treponema maltophilum* and *Pseudomonas aeruginosa*. SigD is a secreted protein required for the efficient invasion of *Salmonella typhimurium* into cultured eucaryotic cells. SigE is a putative chaperone required for SigD stability and/or secretion. SigD is secreted by a type III secretion apparatus encoded within a pathogenicity island on the *Salmonella* chromosome known as *Salmonella* pathogenicity island 1 (SPI1). SigD is also the first bacterial effector to be identified as an activator of Akt.

REFERENCES

1. Darwin, K.H. and Miller, V.L. 1999. InvF is required for expression of genes encoding proteins secreted by the SPI1 type III secretion apparatus in *Salmonella typhimurium*. *J. Bacteriol.* 16: 4949-4954.
2. Studholme, D.J. and Buck, M. 2000. The alternative sigma factor α 28 of the extreme thermophile *Aquifex aeolicus* restores motility to an *Escherichia coli* fliA mutant. *FEMS Microbiol. Lett.* 1: 103-107.
3. Darwin, K.H. and Miller, V.L. 2000. The putative invasion protein chaperone SicA acts together with InvF to activate the expression of *Salmonella typhimurium* virulence genes. *Mol. Microbiol.* 4: 949-960.
4. Steele-Mortimer, O., Knodler, L.A., Marcus, S.L., Scheid, M.P., Goh, B., Pfeifer, C.G., Duronio, V. and Finlay, B.B. 2000. Activation of Akt/protein kinase B in epithelial cells by the *Salmonella typhimurium* effector SigD. *J. Biol. Chem.* 48: 37718-37724.
5. Marcus, S.L., Wenk, M.R., Steele-Mortimer, O. and Finlay, B.B. 2001. A synaptojanin-homologous region of *Salmonella typhimurium* SigD is essential for inositol phosphatase activity and Akt activation. *FEBS Lett.* 3: 201-207.

SOURCE

SigD (bN-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SigD of *Salmonella typhimurium* origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-17442 P, (100 μ g 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.

APPLICATIONS

SigD (bN-16) is recommended for detection of SigD of *S. dublin*, *S. blockley* and *S. typhi* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) 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.

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.