SANTA CRUZ BIOTECHNOLOGY, INC.

MT 16 kDa antigen (5176): sc-58169

BACKGROUND

Mycobacterium tuberculosis is a slow-growing obligate aerobic bacillus that causes most cases of tuberculosis (TB). It is a small, rod-like microbe that can withstand weak disinfectants and survive in a dry state for weeks but can only grow within a host organism. *M. tuberculosis* has a thick waxy cell wall that is responsible for the typical caseous granuloma formation in tuberculosis. TB infection begins when the mycobacteria reach the pulmonary alveoli, where they invade and replicate within alveolar macrophages. Bacteria are picked up by dendritic cells, which transport them to local lymph nodes. The bacteria may be further spread through the bloodstream to the more distant tissues and organs where secondary TB lesions can develop in lung apexes, peripheral lymph nodes, kidneys, brain and bone. The 16 kDa antigen of *Mycobacterium tuberculosis* (MT 16 kDa antigen) provokes specific immune responses in an infected host, making it a target for peptide-based diagnostic reagents and subunit vaccines.

REFERENCES

1. Caccamo, N., et al. 2002. Identification of epitopes of *Mycobacterium tuberculosis* 16 kDa protein recognized by human leukocyte antigen-A*0201 $CD8^+$ T lymphocytes. J. Infect. Dis. 186: 991-998.
2. Demkow, U., et al. 2002. Humoral immune response against 38 kDa and 16 kDa mycobacterial antigens in bone and joint tuberculosis. Int. J. Tuberc. Lung Dis. 6: 1023-1028.
3. Devi, K.R., et al. 2002. Purification and characterization of three immunodominant proteins (38, 30 and 16 kDa) of *Mycobacterium tuberculosis*. Protein Expr. Purif. 24: 188-195.
4. Raja, A., et al. 2002. Immunoglobulin G, A and M responses in serum and circulating immune complexes elicited by the 16 kDa antigen of *Mycobacterium tuberculosis*. Clin. Diagn. Lab. Immunol. 9: 308-312.
5. Bosze, S., et al. 2004. *In vitro* T-cell immunogenicity of oligopeptides derived from the region 92-110 of the 16 kDa protein of *Mycobacterium tuberculosis*. Biopolymers 76: 467-476.
6. Bothamley, G.H. 2004. Epitope-specific antibody levels demonstrate recognition of new epitopes and changes in titer but not affinity during treatment of tuberculosis. Clin. Diagn. Lab. Immunol. 11: 942-951.
7. Preneta, R., et al. 2004. Autophosphorylation of the 16 kDa and 70 kDa antigens (HSP 16.3 and HSP 70) of *Mycobacterium tuberculosis*. Microbiology 150: 2135-2141.
8. Caccamo, N., et al. 2005. Th0 to Th1 switch of CD4 T cell clones specific from the 16 kDa antigen of *Mycobacterium tuberculosis* after successful therapy: lack of involvement of epitope repertoire and HLA-DR. Immunol. Lett. 98: 253-258.
9. Davidow, A., et al. 2005. Antibody profiles characteristic of *Mycobacterium tuberculosis* infection state. Infect. Immun. 73: 6846-6851.

SOURCE

MT 16 kDa antigen (5176) is a mouse monoclonal antibody raised against the 16 kDa antigen (HspX) of *Mycobacterium tuberculosis* and *Mycobacterium bovis* origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MT 16 kDa antigen (5176) is recommended for detection of the 16 kDa antigen of *M. tuberculosis* and *M. bovis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of MT 16 kDa antigen: 16 kDa.

SELECT PRODUCT CITATIONS

1. Camassa, S., et al. 2017. Impact of pe_pgrs33 gene polymorphisms on *Mycobacterium tuberculosis* infection and pathogenesis. Front. Cell. Infect. Microbiol. 7: 137.

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.