

## ESAT6 (HYB 076-08): sc-57730

### 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. ESAT6 is a protein secreted by *M. tuberculosis* that induces a strong immune response in infected organisms, making it a strong candidate for the development of a vaccine against tuberculosis. ESAT6 may also be useful in the detection of the disease. Deletion of the ESAT6 gene leads to the loss of virulence of *M. tuberculosis*.

### REFERENCES

- Ulrichs, T., et al. 1999. Differential T cell responses to *Mycobacterium tuberculosis* ESAT6 in tuberculosis patients and healthy donors. *Eur. J. Immunol.* 28: 3949-3958.
- Wards, B.J., et al. 2000. An ESAT6 knockout mutant of *Mycobacterium bovis* produced by homologous recombination will contribute to the development of a live tuberculosis vaccine. *Tuber. Lung Dis.* 80: 185-189.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604305. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Wang, Q.M., et al. 2004. Improved immunogenicity of a tuberculosis DNA vaccine encoding ESAT6 by DNA priming and protein boosting. *Vaccine* 22: 3622-3627.
- Dietrich, J., et al. 2005. Exchanging ESAT6 with TB10.4 in an Ag85B fusion molecule-based tuberculosis subunit vaccine: efficient protection and ESAT6-based sensitive monitoring of vaccine efficacy. *J. Immunol.* 174: 6332-6339.
- Fan, X.L., et al. 2005. Cloning and expression of the fusion protein of interleukin-2 and ESAT6 in *Mycobacterium bovis* bacillus Calmette-Guerin strain. *Chin. Med. J.* 118: 762-765.
- Wang, X.Y., et al. 2006. Expression of the fusion protein CFP10-ESAT6 of *Mycobacterium tuberculosis* and the study of its immunogenicity. *Sichuan Da Xue Xue Bao Yi Xue Ban* 37: 353-356.

### SOURCE

ESAT6 (HYB 076-08) is a mouse monoclonal antibody raised against PPD from *Mycobacterium tuberculosis*.

### PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### APPLICATIONS

ESAT6 (HYB 076-08) is recommended for detection of ESAT6 of *Mycobacterium tuberculosis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of ESAT6: 6 kDa.

### SELECT PRODUCT CITATIONS

- Krammer, F., et al. 2010. Influenza virus-like particles as an antigen-carrier platform for the ESAT-6 epitope of *Mycobacterium tuberculosis*. *J. Virol. Methods* 167: 17-22.
- Cao, G., et al. 2013. Functional analysis of the EspR binding sites upstream of espR in *Mycobacterium tuberculosis*. *Curr. Microbiol.* 67: 572-579.
- Cao, G., et al. 2015. EspR, a regulator of the ESX-1 secretion system in *Mycobacterium tuberculosis*, is directly regulated by the two-component systems MprAB and PhoPR. *Microbiology* 161: 477-489.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.