

□ Cat # CFP151-P Culture filtrate protein 10 (CFP10/M. tuberculosis) (71-85) antigenic peptide Size: 1 mg

Tuberculosis, MTB, or TB (short for tubercle bacillus) is a common, and in many cases lethal, infectious disease caused by various strains of mycobacteria, usually *Mycobacterium tuberculosis*. Tuberculosis typically attacks the lungs, but can also affect other parts of the body. Individuals with HIV are at risk for infection by tuberculosis due to their impaired immune system. The only currently available vaccine as of 2012 is bacillus Calmette–Guérin (**BCG** with live attenuated bacteria) which, while it is effective against disseminated disease in childhood, confers inconsistent protection against contracting pulmonary TB. A number of new TB vaccines are currently in phase I and II clinical trials. MVA85A (modified vaccinia Ankara 85A) is a subunit vaccine to BCG.

The closely related proteins of the **antigen 85 complex** are major secreted products of mycobacteria. Three closely related components, termed antigens **85A, 85B, and 85C**, have been demonstrated in *M. bovis* BCG and *M. tuberculosis*. Although the antigens are genetically distinct, they are highly homologous and cross-react with polyclonal and monoclonal antibodies raised against individual components. Sequence analysis revealed 85% identity between the *M. bovis* BCG 85A and 85B. Many other mycobacterial antigens have been identified, such as 71, 65, 38, 23, 19, 16, 14 and 12-kDa proteins. The **38-kDa** protein is an immunodominant lipoprotein antigen is specific only for the *M. tuberculosis* complex. It is the most extensively studied antigen. The 16-kDa antigen is an immunodominant antigen, frequently called 14 kDa, related to the family of low molecular weight heat-shock proteins. This antigen contains B-cell epitopes specific for the *M. tuberculosis* complex.

Mycobacterium antigen **ESAT-6** has been isolated from low molecular weight fractions of the shot-term-culture filtrate (ST-CF) and it can easily be detected in tuberculosis patients. This antigen includes many epitopes detectable in the serum of most patients with tuberculosis (more than 90%). Recently it was shown that ESAT-6 is very potential as diagnostic for differentiation between the mycobacterial infection and BCG vaccination.

CFP-10 also known as ESAT-6-like protein esxB or secreted antigenic protein MTA-10 or 10 kDa culture filtrate antigen CFP-10 is a protein that is encoded by the esxB gene. CFP-10 is a 10 kDa secreted antigen from *Mycobacterium tuberculosis*. It forms a 1:1 heterodimeric complex with ESAT-6. Both genes are expressed from the RD1 region of the bacterial genome and play a key role in the virulence of the infection. **CFP10 (71-85 aa; EISTNIRQAGVQYSR)** is a 15-mer peptide is fragment of (CFP)10 protein, which is secreted from mycobacterium tuberculosis 10-kDa culture filtrate stimulate IFN- γ production and CTL activity by CD4+ and CD8+ cells, from persons expressing a spectrum of MHC molecules. This peptide is an excellent candidate for inclusion in a subunit tuberculosis vaccine.

Source & Storage

CFP10- (71-85)
Sequence: EISTNIRQAGVQYSR
Mol wt: 1721.9
Purity: >95%

CFP10 (71-85 aa) is a synthetic purified peptide. Supplied in powder form. It is recommended to reconstitute the lyophilized powder in distilled H₂O or other buffers. Lyophilized peptide although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution it should be stored at or below -18°C.

Specificity

10-kDa culture filtrate protein (CFP-10) is an antigen that contributes to the virulence *Mycobacterium tuberculosis*. CFP-10 forms a tight 1:1 heterodimeric complex with 6kDaA early secreted antigen target (ESAT-6). In the mycobacterial cell, these two proteins are interdependent on each other for stability.

References: Renshaw PS (2005) EMBO J. 24, 2491-2498; Meher Ak (2006) FEBS J. 273, 1445-1462; Sorensen AL (1995) Inf. Immun. 63, 1710-1717; Berthet FX (1998) Microbiol. 144, 3195-3203; Brodin P (2006) Inf. Immun. 74, 88-98; Renshaw PS (2002) JBC 277, 21598-21603

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Related Items

Catalog#	ProdDescription
HSP651-M	Monoclonal Anti-M. tuberculosis Heat Shock Protein 65 (hsp65/groEL-2/Cpn60-2) IgG
HSP651-P	Heat shock protein (M. leprae HSP65; 417-429) specific P62 peptide (LLQAAPALDKLKL, MW:1393.7)
HSP652-P	Heat shock protein (M. leprae/M. tuberculosis HSP65; 417-429) P38 peptide (AGGGVTLQAAPALD, MW:1353.5)
HSP653-P	Heat shock protein (M. leprae HSP65; 343-355) P61 peptide (RVAQIRTEIENS, MW:1530.7)
HSP654-P	Heat shock protein (M. bovis HSP65; 243-255) indicator peptide in HLA-DQ2 binding assays (KPLLLIAEDVEGEY, MW:1588.8)
HSP701-M	Monoclonal Anti-M. tuberculosis Heat Shock Protein 70 (hsp70/Dnak/ML2496) IgG
MTB061-M	Monoclonal Anti-Mycobacterium tuberculosis antigen (6kDa/ESAT-6) IgG
MTB06-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (6kDa/ESAT-6)
MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen (16kDa/Hspx) IgG
MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (16kDa/Hspx)
MTB381-M	Monoclonal Anti-Mycobacterium tuberculosis antigen 38kDa/Ag85B IgG
MTB38-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (38kDa/Ag85B)
MTB6381-S	Anti-M. Tuberculosis antigens (6Kda/ESAT+16kDa+38KDa/Ag85b mixture of proteins antiserum
RP-628	Recombinant purified Mycobacterium Tuberculosis Heat Shock Protein 70 (hsp70/Dnak/ML2496)
RP-999	Recombinant purified Mycobacterium Tuberculosis major secretory protein Antigen 85B (38kda Antigen, Ag85b)

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