ALPHA DIAGNOSTIC INTERNATIONAL

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Product Data Sheet

☐ Cat# Ag85A111-P	M. tuberculosis Protein Ag85A T-cell immunodominant CD8 peptide	**Size**:	1 mg
☐ Cat# Ag85A112-P	M. tuberculosis Protein Ag85A T-cell immunodominant CD8 peptide	**Size**:	1 mg
☐ Cat# Ag85B211-P	M. tuberculosis Protein Ag85b (199-207) HLA-A2 binding 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. The infectious agents of tuberculosis are acid-resistant rod-like bacteria of the family Mycobacteriaceae, genus Mycobacterium. 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. This vaccine produces higher levels of long-lasting cellular immunity when used together with the old TB vaccine called BCG.

The closely related proteins of the antigen 85 complex, initially identified in M. bovis BCG 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 proteins. Many 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 isolated as a component of antigen 5 by affinity chromatography, and 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.

Heat shock proteins induce pro-inflammatory cytokines. Mycobacterial HSPs participate in cytokine expression resulting from infection by M. tuberculosis. Furthermore, HSPs stabilize cellular proteins in response to various sources of stress or injury. **DnaK**, originally identified for its DNA replication by bacteriophage l in E. coli is the bacterial hsp70 chaperone. Recombinant HSP fusion proteins (with antigenic sequences fused to the N or C terminus of the HSP) have been shown to elicit CD8, T cell and Ab responses.

Several peptides that serve as Th1 cell epitopes have been identified from various M. tuberculosis, M. leprae, and M. bovis antigenic proteins.

Ag85A111-P (LTSELPGWLQANRHVKPTGS, Mol wt 2191.5**):** T-cell immunodominant CD8 peptide of the Ag85A Mycobacterium tuberculosis protein, MHC class I H-2Ld-restricted epitope. Because parenterally administered Mycobacterium bovis BCG vaccine confers only limited immune protection from pulmonary tuberculosis, intranasal administration of vector expressing AdAg85A represents an effective way to boost immune protection by parenteral BCG vaccination.

Ag85A111-P: M. tuberculosis Protein Ag85A T-cell immunodominant CD8 peptide, MHC class I H-2Ld-restricted epitope (MPVGGQSST, MW:863).

Ag85B211-P: M. tuberculosis Protein Ag85b (199-207) HLA-A2 binding peptide (KLVANNTRL, MW:1028.2).

Synonyms:
HSP-70, HSP70, DnaK, Chaperone protein dnaK, Heat shock protein 70, Heat shock 70 kDa protein, HSP70, 70 kDa antigen, ML2496.

Store peptides at -20oC in cool and dry place. Reconstitute peptides in water or other buffer and store frozen at -20oC or below for long term storage.

Usage

Recommended for ELISA or T-cell assays.

References: Mustafa A (1999) Inf. Imm. 67, 5683-5689; Al_attiya R (2003) Inf. Imm. 71, 1953-1960; 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; Rensahw PS (2002) JBC 277, 21598-21603

This item is for LABORATORY ESEARCH USE ONLY.

Related Items

Catalog#	ProdDescription
HSP701-M	Monoclonal Anti-M. tuberculosis Heat Shock Protein 65 (hsp65/groEL-2/Cpn60-2) IgG
HSP701-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 (AGGGVTLLQAAPALD, MW:1353.5)
HSP653-P	Heat shock protein (M. leprae HSP65; 343-355) P61 peptide (RVAQIRTEIENSD, MW:1530.7)
HSP654-P	Heat shock protein (M. bovis HSP65; 243-255) indicator peptide in HLA-DQ2 binding assays (KPLLIIAEDVEGEY, 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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