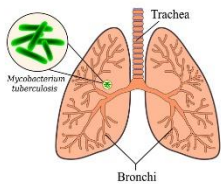


Tuberculosis Vaccines: Antibody ELISA Kits, Recombinant Proteins, Peptides and Antibodies

Tuberculosis

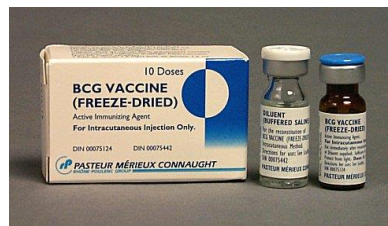


Tuberculosis, MTB, or TB (short for tubercle bacillus) is a common, and in many cases lethal, infectious disease caused by various strains of mycobacteria, usually **Mycobacterium tuberculosis**. The infectious agents of tuberculosis are acid-resistant rod-like bacteria of the family Mycobacteriaceae, genus Mycobacterium. Mycobacterioses (tuberculosis, leprosy, atypical mycobacterioses, paratuberculosis, and perhaps Crohn's Disease) are diseases of **humans and animals** with the largest diffusion on earth. *One third of the world's population is thought to have been infected with M. tuberculosis*, with new infections occurring at a rate of about one per second. TB killed 1.4 million people in 2010. Tuberculosis typically attacks the lungs, but can also affect other parts of the body.



It is spread through the air when people who have an active TB infection cough, sneeze, or otherwise transmit their saliva through the air. Most infections are asymptomatic and latent, but about one in ten latent infections eventually progresses to active disease which, if left untreated, kills more than 50% of those so infected. Individuals with HIV are at risk for infection by tuberculosis due to their impaired immune system. The two antibiotics most commonly used are **isoniazid and rifampicin but antibiotic resistance** is a serious concern. **Drug-resistant TB** is a serious public health issue in many developing countries.

The main cause of TB is Mycobacterium **tuberculosis**, a small, aerobic, nonmotile bacillus. The high lipid content of this pathogen accounts for many of its unique clinical characteristics. The only currently available **vaccine** 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. Nevertheless, it is the most widely used vaccine worldwide, with more than 90% of all children being vaccinated. A

number of **new TB vaccines** are currently in phase I and II clinical trials. **MVA85A** (modified vaccinia Ankara 85A, Oxford University) is a **subunit vaccine to BCG**. It uses the attenuated MVA as a vaccine delivery platform to present **antigen 85A** to the immune system.

Mycobacterium tuberculosis (**H37Rv** strain) has circular chromosomes of about 4,2 mln bp long and **~4000 gene**. The closely related proteins of the **antigen 85 complex**, initially identified in Mycobacterium bovis. 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 antibodies raised against individual components. Sequence analysis revealed 85% protein identity between the M. bovis BCG 85A and 85B components. 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.

About ADI's Tuberculosis ELISA Kits - ADI has developed antibody ELISA kits (BCG and individual recombinant proteins) to determine the efficacy of various existing vaccines and test new vaccines. ADI is further expanding the antibody ELISAs to measure IgG (and IgG1, IgG2a, IgG3, IgG4) and IgM classes. Antibody ELISA kits for species or antibody subtypes not listed here may be provided as well.

Tuberculosis vaccine Related ELISA kits

Vaccines	Target Antigens	Kit Type	Ab Type	Human	Mouse	Monkey	Rabbit
Tuberculosis Vaccine Antibody ELISA kits	M. tuberculosis antigens (18, 36, 40 kda)	Ab	IgA	990-100-THA			
			IgG	990-110-THG		990-400-MTG	
			IgM	990-120-THM		990-410-MTM	
	BCG	Ab	IgA		990-205-TMA		
			IgG	990-330-THG	990-210-TMG		990-310-TRG
			IgM	990-340-THM	990-220-TMM		990-320-TRM
	ESAT-6	Ab	IgG		990-230-06G		
			IgM		990-235-06M		
	Hspx/16Kda	Ab	IgG		990-240-16G		
			IgM		990-245-16M		
	Ag85b/38kda (MVA vaccine)	Ab	IgG	990-260-38G	990-250-38G		
			IgM	990-265-38M	990-255-38M		

Tuberculosis Vaccine Related Antibodies, Proteins and other Reagents

Items	Catalog#	Product Description	Product Type
M. Tuberculosis Ag85	Ag85A111-P	M. tuberculosis Protein Ag85A T-cell immunodominant CD8 peptide, MHC class I H-2Ld-restricted epitope (LTSELPGWLQANRHVKPTGS, WT: 2191.5)	Pure Peptide
	Ag85A112-P	M. tuberculosis Protein Ag85A T-cell immunodominant CD8 peptide, MHC class I H-2Ld-restricted epitope (MPVGGQSST, MW:863)	Pure Peptide
	Ag85B211-P	M. tuberculosis Protein Ag85b (199-207) HLA-A2 binding peptide (KLVANNTLRL)	Pure Peptide
	MTB381-C	Recombinant purified M. tuberculosis antigen 38kDa/Ag85B control for Western	Western control
	MTB381-M	Monoclonal Anti-Mycobacterium tuberculosis antigen 38kDa/Ag85B IgG	Antibodies
	MTB38-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (38kDa/Ag85B)	Recomb. Protein
	MTB6381-S	Anti-M. Tuberculosis antigens (6Kda/ESAT+16kDa+38KDa/Ag85b proteins antiserum	whole BCG vaccine
RP-999	Recomb. M. tuberculosis major secretory protein Antigen 85B (38kda Antigen, Ag85b)	Pure protein	
MTB16 kda/Hspcx	MTB161-C	Recombinant purified M. tuberculosis antigen (16kDa/Hspcx) control for Western	Western control
	MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen (16kDa/Hspcx) IgG	Antibodies
	MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (16kDa/Hspcx)	Recomb. Protein
	MTB161-C	Recombinant purified M. tuberculosis antigen (16kDa/Hspcx) control for Western	Western control
	MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen (16kDa/Hspcx) IgG	Antibodies
	MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (16kDa/Hspcx)	Recomb. Protein
MTB6kda ESAT-6	MTB061-C	Recombinant purified M. tuberculosis antigen (6kDa/ESAT-6) control for Western	Western control
	MTB061-M	Monoclonal Anti-Mycobacterium tuberculosis antigen (6kDa/ESAT-6) IgG	Antibodies
	MTB06-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (6kDa/ESAT-6)	Recomb. Protein
	MTB161-C	Recombinant purified M. tuberculosis antigen (16kDa/Hspcx) control for Western	Western control
	MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen (16kDa/Hspcx) IgG	Antibodies
	MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen (16kDa/Hspcx)	Recomb. Protein
	RP-977	Recombinant purified ESAT-6 (6 kDa early secretory antigen of T cells; M. Tuberculosis)	Pure protein
RP-977-100	Recombinant purified ESAT-6 (6 kDa early secretory antigen of T cells; M. tuberculosis)	Pure protein	
BCG vaccine	BCG11-S	Rabbit Anti-Bacillus calemette-Guerin (BCG) proteins (M. bovis) antiserum	whole BCG vaccin
CFP10	CFP101-M	Monoclonal Anti-M. tuberculosis 10 Kda cultural filtrate protein (CFP10) IgG	Antibodies
	CFP151-P	Culture filtrate protein 10 (CFP10/M. tuberculosis) (71-85) antigenic peptide (EISTNIRQAGVQYSR, MW:1721.9)	Pure Peptide
Hsp/hspcx	HSP651-C	Recombinant purified M. tuberculosis Heat Shock Protein 65 (hsp65/groEL-2/Cpn60-2) control for Western	Western control
	HSP651-M	Monoclonal Anti-M. tuberculosis Heat Shock Protein 65 (hsp65/groEL-2/Cpn60-2) IgG	Antibodies
	HSP651-P	Heat shock protein (M. leprae HSP65; 417-429) specific P62 peptide (LLQAAPALDKLKL, MW:1393.7)	Pure Peptide
	HSP652-P	Heat shock protein (M. leprae/M. tuberculosis HSP65; 417-429) P38 peptide (AGGGVTLQAAPALD, MW:1353.5)	Pure Peptide
	HSP653-P	Heat shock protein (M. leprae HSP65; 343-355) P61 peptide (RVAQIRTEIENSD, MW:1530.7)	Pure Peptide
	HSP654-P	Heat shock protein (M. bovis HSP65; 243-255) indicator peptide in HLA-DQ2 binding assays (KPLLLIAEDVEGEY, MW:1588.8)	Pure Peptide
	HSP701-C	Recombinant purified M. tuberculosis Heat Shock Protein 70 (hsp70/Dnak/ML2496) control for Western	Western control
	HSP701-M	Monoclonal Anti-M. tuberculosis Heat Shock Protein 70 (hsp70/Dnak/ML2496) IgG	Antibodies
	HSP701-M	Monoclonal Anti-M. tuberculosis Heat Shock Protein 70 (hsp70/Dnak/ML2496) IgG	Antibodies
	RP-627	Recombinant purified Mycobacterium Tuberculosis Heat Shock Protein 65 (hsp65/groEL-2/Cpn60-2)	Pure protein
	RP-628	Recombinant purified Mycobacterium Tuberculosis Heat Shock Protein 70 (hsp70/Dnak/ML2496)	Pure protein
PPD	PPD11-A	Rabbit Anti-purified protein derivative (PPD and most proteins of M. tuberculosis) IgG	Antibodies
	PPD11-BTN	Rabbit Anti-purified protein derivative (PPD and most proteins of M. tuberculosis) IgG-biotin conjugate	Antibodies
	PPD11-FITC	Rabbit Anti-purified protein derivative (PPD and most proteins of M. tuberculosis) IgG-FITC conjugate	Antibodies
M. Tuberculosis	RV17341-M	Monoclonal Anti-M. tuberculosis Rv1734 dormant protein from H37Rv strain IgG	Antibodies
	RV2031M	Monoclonal Anti-M. tuberculosis Rv2031 dormant protein from H37Rv strain IgG	Antibodies
	RV26231-M	Monoclonal Anti-M. tuberculosis Rv2623 dormant protein from H37Rv strain IgG	Antibodies
	UBQ151-P	Ubiquitin 2 (Ub2, 65-76) peptide with anti-M. tuberculosis activity (STLHLVLRRLRGG)	Pure Peptide
	NALC15-1	N-Acetyl-L-cysteine (>99%, cell culture grade)	Pure chemical

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