

ESAT-6, Recombinant Protein Reference Standard

Catalog No. NR-49424

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Contributor and Manufacturer:

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Product Description:

NR-49424 is a recombinant form of the early secretory antigenic target protein, ESAT-6.¹ The protein sequence consists of amino acid residues 1 to 103 including a hexahistidine tag at the C-terminus. The recombinant protein was expressed in *Escherichia coli* BL21 (DE3) pLysS cells and purified by immobilized-metal affinity chromatography. ESAT-6 has a theoretical molecular weight of approximately 11 kDa. The amino acid sequence of NR-49424 is shown below in Figure 1.

Note: This protein is provided as a reference standard and should be ordered with the corresponding plasmid (pMRLB.7; NR-50170).

Material Provided:

Each vial contains approximately 1 mg of lyophilized ESAT-6 in 10 mM ammonium bicarbonate.

Note: NR-49424 is soluble in 100 mM to 500 mM aqueous buffered salt solutions, such as phosphate buffered saline. A 10 mM ammonium bicarbonate solution can also be used.

Packaging/Storage:

NR-49424 was packaged aseptically in glass serum vials. The product is provided frozen on dry ice and should be stored at -80°C or colder immediately upon arrival. Freeze-thaw cycles should be avoided.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: ESAT-6, Recombinant Protein Reference Standard, NR-49424."

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. MycoBrowser: [Rv3875](#)
2. Sørensen, A. L., et al. "Purification and Characterization of a Low-Molecular-Mass T-Cell Antigen Secreted by *Mycobacterium tuberculosis*." *Infect. Immun.* 63 (1995): 1710-1717. PubMed: 7729876.
3. Harboe, M., et al. "Evidence for Occurrence of the ESAT-6 Protein in *Mycobacterium tuberculosis* and Virulent *Mycobacterium bovis* and for Its Absence in *Mycobacterium bovis* BCG." *Infect. Immun.* 64 (1996): 16-22. PubMed: 8557334.
4. Skjøt, R. L., et al. "Comparative Evaluation of Low-Molecular-Mass Proteins from *Mycobacterium tuberculosis* Members of the ESAT-6 Family as Immunodominant T-Cell Antigens." *Infect. Immun.* 68 (2000): 214-220. PubMed: 10603390.
5. Singh, A., et al. "Dissecting Virulence Pathways of *Mycobacterium tuberculosis* Through Protein-Protein Association." *Proc. Natl. Acad. Sci. U. S. A.* 103 (2006): 11346-11351. PubMed: 16844784.

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Figure 1: ESAT-6 Amino Acid Sequence

MTEQQWNFAG IEAAASAIQG NVTSIHSLLD EGKQSLTKLA AAWGGSGSEA
YQGVQQKWDATATELNNALQ NLARTISEAG QAMASTE~~GNV~~ TGMFALE~~HHH~~ ~~HHH~~

Non-ESAT-6 protein residues are underlined.