

Peptide Array, *Mycobacterium tuberculosis* ESAT-6 Protein

Catalog No. NR-34824

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Contributor:

BEI Resources

Manufacturer:

Bio-Synthesis, Inc.

Product Description:

The 21-peptide array spans the early secretory antigenic target (ESAT-6) protein of the bacterium *Mycobacterium tuberculosis* (UniProt: P0A564). Peptides are 15- or 16-mers, with 11 or 12 amino acid overlaps. Please see Table 1 for length and sequence of individual peptides.

Material Provided:

Peptides are provided lyophilized at 1 mg per vial.

Packaging/Storage:

Lyophilized peptides should be placed in a closed dry environment with dessicants and stored at -20°C or colder immediately upon arrival. A frost-free freezer should be avoided, since changes in moisture and temperature may affect peptide stability.

Solubility:

Solubility may vary based on the amino acid content of the individual peptide (see Table 2).

Reconstitution:

Lyophilized peptides should be warmed to room temperature for 1 hour prior to reconstitution. They should be dissolved at the highest possible concentration, and then diluted with water or buffer to the working concentration. Buffer should be added only after the peptide is completely in solution because salts may cause aggregation.

The most common dissolution process is 1 mg of peptide in 1 mL of sterile, distilled water. Peptides that are not soluble in water can almost always be dissolved in DMSO. Once a peptide is in solution, the DMSO can be slowly diluted with aqueous medium. Care must be taken to ensure that the peptide does not begin to precipitate out of solution. For cell-based assays, 0.5% DMSO in medium is usually well-tolerated.

Sonication and/or the addition of small amounts of dilute (10%) aqueous acetic acid for basic peptides, aqueous ammonia for acidic peptides or acetonitrile may also help dissolution (see Table 2). These solvents may not be

appropriate for certain applications, including cell-based assays.

Storage of Reconstituted Peptides:

The shelf life of peptides in solution is very limited, especially for sequences containing cysteine, methionine, tryptophan, asparagine, glutamine, and N-terminal glutamic acid. In general, peptides may be aliquoted and stored in solution for a few days at -20°C or colder. For long-term storage, peptides should be re-lyophilized and stored at -20°C or colder. If long-term storage in solution is unavoidable, peptide solutions should be buffered to pH 5-6, aliquoted and stored at -20°C or colder. Freeze-thaw cycles should be avoided.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: Peptide Array, *Mycobacterium tuberculosis* ESAT-6 Protein, NR-34824.”

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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Table 1		
Peptide	Length	Sequence
1 of 21	15	1-MTEQQWNFAGIEAAA-15
2 of 21	15	5-QWNFAGIEAAASAIQ-19
3 of 21	15	9-AGIEAAASAIQGNVT-23
4 of 21	15	13-AAASAIQGNVTSIHS-27
5 of 21	15	17-AIQGNVTSIHSLLDE-31
6 of 21	15	21-NVTSIHSLLDEGKQS-35
7 of 21	15	25-IHSLLDGKQSLTKL-39
8 of 21	16	29-LDEGKQSLTKLAAAWG-44
9 of 21	15	33-KQSLTKLAAAWGGSG-47
10 of 21	15	37-TKLAAAWGGSGSEAY-51
11 of 21	15	41-AAWGGSGSEAYQGVQ-55
12 of 21	15	45-GSGSEAYQGVQQKWD-59
13 of 21	15	49-EAYQGVQQKWDATAT-63
14 of 21	15	53-GVQQKWDATATELNN-67
15 of 21	15	57-KWDATATELNNALQN-71
16 of 21	15	61-TATELNNALQNLART-75
17 of 21	15	65-LNNALQNLARTISEA-79
18 of 21	15	69-LQNLARTISEAGQAM-83
19 of 21	15	73-ARTISEAGQAMASTE-87
20 of 21	15	77-SEAGQAMASTEGNVT-91
21 of 21	15	81-QAMASTEGNVTGMFA-95

Table 2		
Peptide	Solubility	Solvent
1 of 21	1 mg/mL	100% DMSO
2 of 21	1 mg/mL	100% DMSO
3 of 21	1 mg/mL	100% DMSO
4 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
5 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
6 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
7 of 21	1 mg/mL	30% acetonitrile in water
8 of 21	1 mg/mL	70% acetonitrile in water
9 of 21	1 mg/mL	70% acetonitrile in water
10 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
11 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
12 of 21	1 mg/mL	70% acetonitrile in water
13 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
14 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
15 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
16 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
17 of 21	1 mg/mL	70% acetonitrile in water
18 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
19 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
20 of 21	1 mg/mL	0.05% trifluoroacetic acid in water
21 of 21	1 mg/mL	50% acetonitrile in water