Product Information Sheet for NR-9229

Peptide Array, Dengue Virus Type 4 (DEN-4), Singapore/8976/1995, E Protein, Diverse Peptides

Catalog No. NR-9229

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Contributor:

NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH

Product Description:

NR-9229 contains 10 peptides that represent regions of amino acid sequence diversity in the envelope (E) protein found in dengue virus type 4 (DEN-4), Singapore/8976/1995 (GenPept: Q5UCB8)[1] compared to DEN-4, Dominica/814669/1981. DEN-4, Singapore/8976/1995 E protein is identical to that of DEN-4, Dominica/814669/1981 E protein with the exception of 4 amino acids. A complete 69-peptide array of the E protein of DEN-4, Singapore/8976/1995 can be constructed using these 10 peptides and peptides from DEN-4, Dominica/814669/1981 (BEI Resources NR-512). Peptides are 16- to 18-mers, with 10 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 the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Peptide Array, Dengue Virus Type 4 (DEN-4), Singapore/8976/1995, E Protein, Diverse Peptides, NR-9229."

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, 2007; see www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm.

Disclaimers:

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References:

1. Yoong, L. F., et al. Direct submission (2004). GenPept: Q5UCB8.

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Table 1

Peptide	Length	Sequence
23 of 69	16	149-HAVGNDTSNHGVTATI-164
24 of 69	17	155-TSNHGVTATITPRSPSV-171
25 of 69	17	162-ATITPRSPSVEVKLPDY-178
29 of 69	18	190-GIDFNEMILMEMKKKTWL-207
30 of 69	17	198-LMEMKKKTWLVHKQWFL-214
48 of 69	18	335-VPIEIRDVNKEKVVGRVI-352
49 of 69	16	343-NKEKVVGRVISSTPLA-358
50 of 69	16	349-GRVISSTPLAENTNSV-364
63 of 69	18	442-SVYTTMFGGVSWMVRILI-459
64 of 69	17	450-GVSWMVRILIGFLVLWI-466

Table 2

Peptide	Solubility	Solvent
23 of 69	1 mg/mL	50% acetic acid in water
24 of 69	1 mg/mL	6 M guanidine-HCl
25 of 69	1 mg/mL	6 M guanidine-HCl
29 of 69	1 mg/mL	100% DMSO
30 of 69	1 mg/mL	50% acetic acid in water
48 of 69	1 mg/mL	100% DMSO
49 of 69	1 mg/mL	6 M guanidine-HCl
50 of 69	1 mg/mL	6 M guanidine-HCl
63 of 69	1 mg/mL	100% DMSO
64 of 69	1 mg/mL	100% DMSO

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