Peptide Array, Dengue Virus Type 4, Dominica/814669/1981, E Protein

Catalog No. NR-512

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Product Description:

The 69-peptide array spans the E protein of Dengue virus type 4, Dominica/814669/1981 (GenPept: P09866).[1–3] Peptides are 12- to 20-mers, with 10 or 11 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 -20ºC 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 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 -20ºC or colder. For long-term storage, peptides should be re-lyophilized and stored at -20ºC or colder. If long-term storage in solution is unavoidable, peptide solutions should be buffered to pH 5–6, aliquoted and stored at -20ºC 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, Dominica/814669/1981, E Protein, NR-512."

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.

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References:

1. Zhao, B., et al. "Cloning Full-length Dengue Type 4 Viral DNA Sequences: Analysis of Genes Coding for Structural Proteins." Virology 155 (1986): 77–88. PubMed: 3022479.
2. Mackow, E., et al. "The Nucleotide Sequence of Dengue Type 4 Virus: Analysis of Genes Coding for Nonstructural Proteins." Virology 159 (1987): 217–228. PubMed: 3039728.
3. Markoff, L. "*In Vitro* Processing of Dengue Virus Structural Proteins: Cleavage of the Pre-Membrane Protein." J. Virol. 63 (1989): 3345–3352. PubMed: 2501515.

Table 1

Peptide	Length	Sequence
1	15	MRCVGVGNRDFVEGV
2	18	VGNRDFVEGVSGGAWVDL
3	18	GVSGGAWVDLVLEHGGCV
4	17	DLVLEHGGCVTTMAQGK
5	17	GCVTTMAQGKPTLDFEL
6	17	AQGKPTLDFELTKTTAK
7	18	DFELTKTTAKEVALLRTY
8	16	AKEVALLRTYCIEASI
9	18	LRTYCIEASISNITTATR
10	18	SISNITTATRCPTQGEPY
11	19	TRCPTQGEPYLKEEQDQQY
12	17	YLKEEQDQQYICRRDVV
13	15	DQQYICRRDVVDRGW
14	17	CRRDVVDRGWGNGCGLF
15	16	RGWGNGCGLFGKGGVV
16	15	CGLFGKGGVVTCAKF
17	16	KGGVVTCAKFSCSGKI
18	17	CAKFSCSGKITGNLVQI
19	18	GKITGNLVQIENLEYTVV
20	15	VQIENLEYTVVVTVH
21	17	LEYTVVVTVHNGDTHAV
22	17	TVHNGDTHAVGNDTSNH
23	16	HAVGNDTSNHGVTAMI
24	17	TSNHGVTAMITPRSPSV
25	17	AMITPRSPSVEVKLPDY
26	15	PSVEVKLPDYGELTL
27	18	KLPDYGELTLDCEPRSGI
28	18	TLDCEPRSGIDFNEMILM
29	18	GIDFNEMILMKMKKKTWL
30	17	LMKMKKKTWLVHKQWFL

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Table 1 (continued)		
Peptide	**Length**	**Sequence**
31	18	TWLVHKQWFLDLPLPWTA
32	18	FLDLPLPWTAGADTSEVH
33	18	TAGADTSEVHWNYKERMV
34	18	VHWNYKERMVTFKVPHAK
35	17	MVTFKVPHAKRQDVTVL
36	18	HAKRQDVTVLGSQEGAMH
37	16	VLGSQEGAMHSALAGA
38	20	GAMHSALAGATEVDSGDGNH
39	17	TEVDSGDGNHMFAGHLK
40	18	GNHMFAGHLKCKVRMEKL
41	17	LKCKVRMEKLRIKGMSY
42	17	EKLRIKGMSYTMCSGKF
43	17	MSYTMCSGKFSIDKEMA
44	18	GKFSIDKEMAETQHGTTV
45	18	MAETQHGTTVVKVKYEGA
46	18	TVVKVKYEGAGAPCKVPI
47	17	GAGAPCKVPIEIRDVNK
48	18	VPIEIRDVNKEKVVGRII
49	16	NKEKVVGRIISSTPLA
50	16	GRIISSTPLAENTNSV
51	15	TPLAENTNSVTNIEL
52	18	NTNSVTNIELEPPFGDSY
53	15	ELEPPFGDSYIVIGV
54	18	FGDSYIVIGVGNSALTLH
55	18	GVGNSALTLHWFRKGSSI
56	18	LHWFRKGSSIGKMFESTY
57	18	SIGKMFESTYRGAKRMAI
58	18	TYRGAKRMAILGETAWDF
59	17	AILGETAWDFGSVGGLF
60	18	WDFGSVGGLFTSLGKAVH
61	17	LFTSLGKAVHQVFGSVY
62	17	AVHQVFGSVYTTMFGGV
63	18	SVYTTMFGGVSWMIRILI
64	17	GVSWMIRILIGFLVLWI
65	15	ILIGFLVLWIGTNSR
66	16	LVLWIGTNSRNTSMAM
67	18	TNSRNTSMAMTCIAVGGI
68	18	AMTCIAVGGITLFLGFTV
69	12	GITLFLGFTVQA

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Table 2			
Peptide	**Solubility**	**Solvent**	**Reconstitution pH, if required**
1	1 mg/mL	20% acetonitrile in water	
2	1 mg/mL	1% ammonium hydroxide and 10% acetonitrile in water	
3	1 mg/mL	Water	
4	1 mg/mL	Water	
5	1 mg/mL	Water	
6	1 mg/mL	Water	
7	1 mg/mL	20% acetonitrile in water	
8	1 mg/mL	10% acetonitrile in water	
9	1 mg/mL	Water	
10	1 mg/mL	Water	
11	1 mg/mL	Water	
12	1 mg/mL	Water	
13	1 mg/mL	Water	
14	1 mg/mL	Water	
15	1 mg/mL	Water	
16	1 mg/mL	Water	
17	1 mg/mL	Water	
18	1 mg/mL	Water	
19	1 mg/mL	50% formic acid in water	
20	1 mg/mL	0.01% ammonium hydroxide in water	pH 8.0
21	1 mg/mL	Water	
22	1 mg/mL	Water	
23	1 mg/mL	Water	
24	1 mg/mL	Water	
25	1 mg/mL	Water	
26	1 mg/mL	Water	
27	1 mg/mL	Water	
28	1 mg/mL	5% ammonium hydroxide in water	
29	1 mg/mL	1% ammonium hydroxide and 10% acetonitrile in water	
30	1 mg/mL	Water	
31	1 mg/mL	Water	
32	1 mg/mL	Water	
33	1 mg/mL	Water	
34	1 mg/mL	Water	
35	1 mg/mL	Water	
36	1 mg/mL	Water	
37	1 mg/mL	Water	
38	1 mg/mL	Water	
39	1 mg/mL	Water	
40	1 mg/mL	Water	

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Table 2 (continued)			
Peptide	**Solubility**	**Solvent**	**Reconstitution pH, if required**
41	1 mg/mL	Water	
42	1 mg/mL	Water	
43	1 mg/mL	Water	
44	1 mg/mL	Water	
45	1 mg/mL	Water	
46	1 mg/mL	Water	
47	1 mg/mL	Water	
48	1 mg/mL	Water	
49	1 mg/mL	Water	
50	1 mg/mL	Water	
51	1 mg/mL	0.01% ammonium hydroxide in water	pH 8.0
52	1 mg/mL	Water	
53	1 mg/mL	5% ammonium hydroxide in water	
54	1 mg/mL	50% formic acid in water	
55	1 mg/mL	Water	
56	1 mg/mL	Water	
57	1 mg/mL	Water	
58	1 mg/mL	Water	
59	1 mg/mL	0.01% ammonium hydroxide in water	pH 8.0
60	1 mg/mL	Water	
61	1 mg/mL	Water	
62	1 mg/mL	Water	
63	1 mg/mL	50% formic acid in water	
64	1 mg/mL	50% formic acid in water	
65	1 mg/mL	50% formic acid in water	
66	1 mg/mL	Water	
67	1 mg/mL	Water	
68	1 mg/mL	50% formic acid in water	
69	1 mg/mL	50% formic acid in water	

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