

Peptide Array, Dengue Virus Type 2, New Guinea C (NGC), NS1 Protein

Catalog No. NR-508

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Contributor:

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

Product Description:

The 47-peptide array spans the NS1 protein of Dengue virus type 2, New Guinea C (GenPept: AAA42941).¹ Peptides are 15- to 19-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 desiccants 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 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 2, New Guinea C (NGC), NS1 Protein, NR-508.”

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/bmb15/bmb15toc.htm.

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References:

- Irie, K., et al. "Sequence Analysis of Cloned Dengue Virus Type 2 Genome (New Guinea-C Strain)." *Gene* 75 (1989): 197–211. PubMed: 2714651.
- Putnak, J. R., et al. "Functional and Antigenic Domains of the Dengue-2 Virus Nonstructural Glycoprotein NS-1." *Virology* 163 (1988): 93–103. PubMed: 2964755.

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Table 1		
Peptide	Length	Sequence
1	19	DSGCVVSWKNKELKCGSGI
2	17	NKELKCGSGIFITDNVH
3	18	SGIFITDNVHTWTEQYKF
4	18	VHTWTEQYKFQPEPSKL
5	18	KFQPEPSKLASAIQKAH
6	18	KLASAIQKAHEEGICGIR
7	18	AHEEGICGIRSVTRLENL
8	15	IRSVTRLENLMWKQI
9	18	RLENLMWKQITPELNHIL
10	18	KQITPELNHILSENEVKL
11	18	HILSENEVKLTIMTGDIK
12	18	KLTIMTGDIKGIMQAGKR
13	19	IKGIMQAGKRSLQPQPTL
14	17	RSLQPQPTLKYSWKTW
15	16	TELKYSWKTWGKAKML
16	15	WKTWGKAKMLSTESH
17	16	KAKMLSTESHNQTFLI
18	16	TESHNQTFLIDGPETA
19	18	TFLIDGPETAACPNTNRA
20	16	TAACPNTNRAWNSLEV
21	18	TNRAWNSLEVEDYGFVGF
22	18	EVEDYGFVFTTNIWLKL
23	17	VFTTNIWLKLREKQDVF
24	18	LKLREKQDVFCDSKLMSA

Table 1 (continued)		
Peptide	Length	Sequence
25	18	VFCDSKLMSAAIKDNRAV
26	18	SAAIKDNRAVHADMGYWI
27	18	AVHADMGYWIESALNDTW
28	18	WIESALNDTWKIEKASFI
29	17	TWKIEKASFIEVKSCHW
30	17	SFIEVKSCHWPKSHTLW
31	15	CHWPKSHTLWSNGVL
32	18	SHTLWSNGVLESEMIIPK
33	16	VLESEMIIPKNFAGPV
34	16	IIPKNFAGPVSQHNYR
35	18	AGPVSQHNYRPGYHTQTA
36	18	YRPGYHTQTAGPWHLGKL
37	16	TAGPWHLGKLEMDDFD
38	18	LGKLEMDDFDCEGTTVVV
39	17	DFCEGTTVVVTEDCGNR
40	15	VVVTEDCGNRGPSLR
41	18	DCGNRGPSLRTTTASGKL
42	17	LRTTTASGKLITWCCR
43	18	GKLITWCCRSCSLPLPLR
44	18	CRSCSLPLPLRYRGEDGCW
45	18	LRRYRGEDGCWYGMIRPL
46	18	CWYGMIRPLKEKEENLV
47	16	PLKEKEENLVNSLVTA

^a% full-length
^bRemainder is salt and water

Table 2			
Peptide	Solubility	Solvent	Reconstitution pH, if required
1	1 mg/mL	Water	
2	1 mg/mL	Water	
3	1 mg/mL	20% acetonitrile in water	
4	1 mg/mL	Water	
5	1 mg/mL	20% acetonitrile in water	
6	1 mg/mL	Water	
7	1 mg/mL	Water	
8	1 mg/mL	Water	
9	1 mg/mL	20% acetonitrile in water	
10	1 mg/mL	20% acetonitrile in water	
11	1 mg/mL	20% acetonitrile in water	
12	1 mg/mL	Water	
13	1 mg/mL	Water	
14	1 mg/mL	20% acetonitrile in water	
15	1 mg/mL	Water	
16	1 mg/mL	Water	
17	1 mg/mL	20% acetonitrile in water	
18	1 mg/mL	20% acetonitrile in water	
19	1 mg/mL	Water	
20	1 mg/mL	20% acetonitrile in water	
21	1 mg/mL	Water	
22	1 mg/mL	0.01% ammonium hydroxide in water	pH 8.0
23	1 mg/mL	20% acetonitrile in water	
24	1 mg/mL	20% acetonitrile in water	
25	1 mg/mL	Water	
26	1 mg/mL	Water	
27	1 mg/mL	20% acetonitrile in water	
28	1 mg/mL	20% acetonitrile in water	
29	1 mg/mL	20% acetonitrile in water	
30	1 mg/mL	Water	
31	1 mg/mL	20% acetonitrile in 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	20% acetonitrile in water	
37	1 mg/mL	20% acetonitrile in water	
38	1 mg/mL	5% ammonium hydroxide in water	
39	1 mg/mL	5% ammonium hydroxide in water	
40	1 mg/mL	Water	
41	1 mg/mL	Water	
42	1 mg/mL	Water	
43	1 mg/mL	20% acetonitrile in water	
44	1 mg/mL	20% acetonitrile in water	
45	1 mg/mL	20% acetonitrile in water	
46	1 mg/mL	20% acetonitrile in water	
47	1 mg/mL	20% acetonitrile in water	