

### Peptide Array, Dengue Virus Type 2 (DEN-2), New Guinea C (NGC), NS2a Protein

#### Catalog No. NR-2747

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#### Contributor:

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#### Product Description:

The 35-peptide array spans the NS2a protein of Dengue virus type 2, New Guinea C (GenPept: AAA42941).<sup>1</sup> Peptides are 15- to 17-mers, with 11 amino acid overlap. 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 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 2 (DEN-2), New Guinea C (NGC), NS2a Protein, NR-2747.”

#### 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](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

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### References:

1. Irie, K., et al. "Sequence Analysis of Cloned Dengue Virus Type 2 Genome (New Guinea-C Strain)." *Gene* 75 (1989): 197–211. PubMed: 2714651.

2. Gruenberg, A., et al. "Partial Nucleotide Sequence and Deduced Amino Acid Sequence of the Structural Proteins of Dengue Virus Type 2, New Guinea C and PUO-218 Strains." *J. Gen. Virol.* 69 (1988): 1391–1398. PubMed: 3385407.
3. Gualano, R. C., et al. "Identification of a Major Determinant of Mouse Neurovirulence of Dengue Virus Type 2 Using Stably Cloned Genomic-Length cDNA." *J. Gen. Virol.* 79 (1998): 437–446. PubMed: 9519821.

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Peptide	Length	Sequence
1 of 35	17	1 GHGQIDNFSGLVGMAL 17
2 of 35	17	7 NFSGLVGMALFLEEML 23
3 of 35	17	13 LGMALFLEEMLRTRVGT 29
4 of 35	17	19 LEEMLRTRVGTKHAILL 35
5 of 35	17	25 TRVGTKHAILLVAVSFV 41
6 of 35	17	31 HAILLVAVSFVTLITGN 47
7 of 35	17	37 AVSFVTLITGNMSFRDL 53
8 of 35	17	43 LITGNMSFRDLGRVMVM 59
9 of 35	17	49 SFRDLGRVMVMVGATMT 65
10 of 35	17	55 RVMVMVGATMTDDIGMG 71
11 of 35	17	61 GATMTDDIGMGVTYLAL 77
12 of 35	17	67 DIGMGVTYLALLAAFKV 83
13 of 35	17	73 TYLALLAAFKVRPTFAA 89
14 of 35	17	79 AAFKVRPTFAAGLLLRK 95
15 of 35	17	85 PTFAAGLLLRKLTSKEL 101
16 of 35	17	91 LLLRKLTSKELMMTTIG 107
17 of 35	17	97 TSKELMMTTIGIVLLSQ 113
18 of 35	17	103 MTTIGIVLLSQSTIPET 119
19 of 35	17	109 VLLSQSTIPETILELTD 125
20 of 35	17	115 TIPETILELTDALALGM 131
21 of 35	17	121 LELTDALALGMMVLKMV 137
22 of 35	17	127 LALGMMVLKMRKMEKY 143
23 of 35	17	133 VLKMRKMEKYQLAVTI 149
24 of 35	17	139 KMEKYQLAVTIMAILCV 155
25 of 35	17	145 LAVTIMAILCVPNAVIL 161
26 of 35	17	151 AILCVPNAVILQNAWKV 167
27 of 35	17	157 NAVILQNAWKVSCTILA 173
28 of 35	15	163 NAWKVSCTILAVSV 177
29 of 35	17	167 VSCTILAVSVSPLFLT 183
30 of 35	17	173 AVSVSPLFLTSSQQKA 189
31 of 35	17	179 PLFLTSSQQKADWIPLA 195
32 of 35	17	185 SQQKADWIPLALTIKGL 201
33 of 35	17	191 WIPLALTIKGLNPTAIF 207
34 of 35	17	197 TIKGLNPTAIFLTTLSR 213
35 of 35	16	203 PTAIFLTTLSRTNKKR 218

<b>Table 2</b>		
<b>Peptide</b>	<b>Solubility</b>	<b>Solvent</b>
1 of 35	1 mg/mL	25% acetonitrile in water
2 of 35	1 mg/mL	75% acetonitrile in water
3 of 35	1 mg/mL	25% acetonitrile in water
4 of 35	1 mg/mL	25% acetonitrile in water
5 of 35	1 mg/mL	25% acetonitrile in water
6 of 35	1 mg/mL	50% acetonitrile in water
7 of 35	1 mg/mL	25% acetonitrile in water
8 of 35	1 mg/mL	25% acetonitrile in water
9 of 35	1 mg/mL	25% acetonitrile in water
10 of 35	1 mg/mL	50% acetonitrile in water
11 of 35	1 mg/mL	50% acetonitrile in water
12 of 35	1 mg/mL	50% acetonitrile in water
13 of 35	1 mg/mL	25% acetonitrile in water
14 of 35	1 mg/mL	25% acetonitrile in water
15 of 35	1 mg/mL	25% acetonitrile in water
16 of 35	1 mg/mL	25% acetonitrile in water
17 of 35	1 mg/mL	100% DMSO
18 of 35	1 mg/mL	25% acetonitrile in water
19 of 35	1 mg/mL	25% acetonitrile in water
20 of 35	1 mg/mL	25% acetonitrile in water
21 of 35	1 mg/mL	50% acetonitrile in water
22 of 35	1 mg/mL	25% acetonitrile in water
23 of 35	1 mg/mL	25% acetonitrile in water
24 of 35	1 mg/mL	75% acetonitrile in water
25 of 35	1 mg/mL	100% DMSO
26 of 35	1 mg/mL	25% acetonitrile in water
27 of 35	1 mg/mL	100% DMSO
28 of 35	1 mg/mL	100% DMSO
29 of 35	1 mg/mL	100% DMSO
30 of 35	1 mg/mL	25% acetonitrile in water
31 of 35	1 mg/mL	50% acetonitrile in water
32 of 35	1 mg/mL	25% acetonitrile in water
33 of 35	1 mg/mL	50% acetonitrile in water
34 of 35	1 mg/mL	25% acetonitrile in water
35 of 35	1 mg/mL	25% acetonitrile in water