

Peptide Array, West Nile Virus NS2a Protein

Catalog No. NR-437

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Contributor:

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

Product Description:

The 30-peptide array spans the NS2a protein of the NY99-flamingo382-99 strain of West Nile Virus (GenPept: AAF20092).¹ Peptides are 12- to 19-mers, with 10 amino acid overlaps. Please see Table 1 for length and sequence of individual peptides.

Note: Three additional amino acids (VNA) have been added to the N-terminus of Peptide 1.

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, West Nile Virus NS2a Protein, NR-437."

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:

1. Lanciotti, R. S., et al. "Origin of the West Nile Virus Responsible for an Outbreak of Encephalitis in the Northeastern United States." *Science* 286 (1999): 2333-2337. PubMed: 10600742.

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Peptide	Length	Sequence
1	18	VNAYNADMIDPFQLGLLV
2	18	IDPFQLGLLVFLATQEV
3	18	LVVFLATQEVLRKRWTAK
4	18	EVLKRKWTAKISMPAILI
5	17	AKISMPAILIALLVLF
6	18	ILIALLVLVFGGITYTDV
7	17	VFGGITYTDVLRVYILV
8	15	TDVLRVYILVGAafa
9	18	YVILVGAafaESNSGGDV
10	17	FAESNSGGDVVHLALMA
11	18	GDVVHLALMATFKIQPVF
12	18	MATFKIQPVFMVASFLKA
13	18	VFMVASFLKARWTNQENI
14	18	KARWTNQENILLMLAAVF
15	18	NILLMLAAVFFQMAYHDA
16	18	VFFQMAYHDARQILLWEI
17	18	DARQILLWEIPDVLNSLA
18	18	EIPDVLNSLAVAWMILRA
19	19	LAVAWMILRAITFTTTSNV
20	18	AITFTTTSNVVPLLALL
21	17	NVVVPLLALLTPGLRCL
22	18	ALLTPGLRCLNLDVYRIL
23	16	CLNLDVYRILLMVGI
24	18	YRILLMVGIGSLIREKR
25	17	GIGSLIREKRSAAAKKK
26	18	EKRSAAAKKKGASLLCLA
27	17	KKGASLLCLALASTGLF
28	17	CLALASTGLFNPMILAA
29	19	GLFNPMILAAGLIACDPNR
30	12	AGLIACDPNRKR

Table 2			
Peptide	Solubility	Solvent	Reconstitution pH, if required
1	0.5 mg/mL	Water	
2	0.5 mg/mL	Water	
3	0.5 mg/mL	Water	
4	0.5 mg/mL	Water	
5	0.5 mg/mL	Formic Acid	
6	0.5 mg/mL	Water	pH 10.0
7	0.5 mg/mL	20% acetonitrile in water	
8	0.5 mg/mL	20% acetonitrile in water	
9	0.5 mg/mL	Water	pH 8.0
10	0.5 mg/mL	Water	
11	0.5 mg/mL	Water	pH 2.0
12	0.5 mg/mL	Water	
13	0.5 mg/mL	Water	
14	0.5 mg/mL	Water	
15	0.5 mg/mL	Formic Acid	
16	0.5 mg/mL	20% acetonitrile in water	pH 8.0
17	0.5 mg/mL	Water	pH 8.0
18	0.5 mg/mL	20% acetonitrile in water	
19	0.5 mg/mL	Water	pH 3.0
20	0.5 mg/mL	60% acetonitrile in water	
21	0.5 mg/mL	Water	
22	0.5 mg/mL	40% acetonitrile in water	
23	0.5 mg/mL	60% acetonitrile in water	
24	0.5 mg/mL	20% acetonitrile in water	
25	0.5 mg/mL	Water	
26	0.5 mg/mL	Water	
27	0.5 mg/mL	40% acetonitrile in water	pH 3.0
28	0.5 mg/mL	20% acetonitrile in water	
29	0.5 mg/mL	40% acetonitrile in water	
30	0.5 mg/mL	Water	