Product Information Sheet for NR-2666

Peptide Arrays, Control Peptides for MHC Class I & II Epitopes of Influenza Virus A & B Proteins

Catalog No. NR-2666

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Contributor:
BEI Resources

Manufacturer:
CS Bio Company Inc.

Product Description:
NR-2666 contains seven peptide arrays. The first peptide array (NRC-244; 35 peptides) consists of Major Histocompatability Complex (MHC) Class I epitopes of the HA (H1), NA (N1), NP, M1, M2, NS1, PA and PB1 proteins of influenza A virus.[1] The second peptide array (NRC-245; 9 peptides) consists of MHC Class II epitopes of the HA (H3), NP, M1 and NS1 proteins of influenza A virus.[1] The third peptide array (NRC-331; 1 peptide) consists of an MHC Class II epitope of the HA protein of influenza virus A/New Caledonia/20/1999 (H1N1) (GenPept: CAC86622).[1,2] The fourth peptide array (NRC-332; 1 peptide) consists of an MHC Class II epitope of the HA protein of influenza virus A/New York/384/2005 (H3N2) (GenPept: AAZ79974).[1,3] The fifth peptide array (NRC-333; 1 peptide) consists of an MHC Class II epitope of the HA protein of influenza virus A/Thailand/4(SP-528)/2004 (H5N1) (GenPept: AAV34704).[1,4] The sixth peptide array (NRC-246; 3 peptides) consists of MHC Class I epitopes of the NP protein of influenza B virus.[1] The seventh peptide array (NRC-247; 1 peptide) consists of an MHC Class II epitope of the HA protein of influenza B virus.[1] Peptides are 8- to 16-mers. 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). Peptides can almost always be dissolved in 100% DMSO.

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 or 1 mL of 100% DMSO. The DMSO can be slowly diluted to a lower concentration 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 -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 BEI Resources, NIAID, NIH: Peptide Arrays, Control Peptides for MHC Class I & II Epitopes of Influenza Virus A & B Proteins, NR-2666."

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, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. Epstein, S. L., et al. "Cell-Mediated Immunity to Influenza." Textbook of Influenza. Eds. Nicholson, K., et al. London: Blackwell Science; 1998. Chapter 24.
2. Marozin, S., et al. "Antigenic and Genetic Diversity among Swine Influenza A H1N1 and H1N2 Viruses in Europe." J. Gen. Virol. 83 (2002): 735–745. PubMed: 11907321. GenPept: CAC86622.
3. Ghedin, E., et al. "The NIAID Influenza Genome Sequencing Project." Direct submission (2005). GenPept: AAZ79974.
4 Puthavathana, P., et al. "Molecular Characterization of the Complete Genome of Human Influenza H5N1 Virus Isolates from Thailand." J. Gen. Virol. 86 (2005): 423–433. PubMed: 15659762. GenPept: AAV34704.

Support Provided by NIAID

Table 1

Peptide	Length	Protein	Sequence
NRC-244: Influenza Virus A MHC Class I Peptides			
1 of 35	9	HA (H1)	63-GIAPLQLGK-71
2 of 35	10	HA (H1)	149-VTAACSHAGK-158
3 of 35	11	HA (H1)	450-RTLDFHDSNVK-460
4 of 35	10	NA (N1)	75-SLCPIRGWAI-84
5 of 35	9	NA (N1)	213-CVNGSCFTV-221
6 of 35	9	NP	44-CTELKLSDY-52
7 of 35	9	NP	91-KTGGPIYKR-99
8 of 35	9	NP	146-TTYQRTRAL-154
9 of 35	11	NP	174-RRSGAAGAAVK-184
10 of 35	11	NP	188-TMVMELVRMIK-198
11 of 35	9	NP	265-ILRGSVAHK-273
12 of 35	9	NP	338-FEDLRVLSF-346
13 of 35	9	NP	339-EDLRVLSFI-347
14 of 35	9	NP	379-LELRSRYWA-387
15 of 35	9	NP	380-ELRSRYWAI-388

Table 1			
Peptide	**Length**	**Protein**	**Sequence**
NRC-244: Influenza Virus A MHC Class I Peptides			
16 of 35	8	NP	381-LRSRYWAI-388
17 of 35	9	NP	383-SRYWAIRTR-391
18 of 35	9	NP	418-LPFDRTTVM-426
19 of 35	9	NP	418-LPFD**KPTI**M-426
20 of 35	9	NP	418-LPFD**KSTI**M-426
21 of 35	9	NP	418-LPF**EKS**TVM-426
22 of 35	10	NP	470-KATSPIVPSL-479
23 of 35	9	M1	13-SIIPSGPLK-21
24 of 35	9	M1	51-ILSPLTKGI-59
25 of 35	9	M1	58-GILGFVFTL-66
26 of 35	10	M1	59-ILGFVFTLTV-68
27 of 35	8	M1	128-ASCMGLIY-135
28 of 35	9	M2	7-VETPIRNEW-15
29 of 35	10	M2	85-DADDSHFVSI-94
30 of 35	9	NS1	122-AIMDKNIIL-130
31 of 35	9	NS1	158-GEISPLPSL-166
32 of 35	9	PA	46-FMYSDFHFI-54
33 of 35	9	PA	225-SLENFRAYV-233
34 of 35	9	PB1	413-NMLSTVLGV-421
35 of 35	9	PB1	591-VSDGGPNLY-599
NRC-245: Influenza Virus A MHC Class II Peptides			
1 of 9	16	HA (H3)	271-RGYFKMRTGKSSIMRS-286
2 of 9	12	HA (H3)	322-PKYVKQNTLKLA-333
3 of 9	13	HA (H3)	322-PKYVKQNTLKLAT-334
4 of 9	19	HA (H3)	322-PKYVKQNTLKLATGMRNVP-340
5 of 9	15	NP	365-IASNENMDAMESSTL-379
6 of 9	12	M1	18-GPLKAEIAQRLE-29
7 of 9	10	M1	234-LENLQAYQKR-243
8 of 9	12	M1	239-AYQKRMGVQMQR-250
9 of 9	9	NS1	34-DRLRRDQKS-42
NRC-331: Influenza Virus A/New Caledonia/20/99(H1N1) MHC Class II Peptide			
1 of 1	13	HA (H1)	320-PKYVRSAKLRMVT-332
NRC-332: Influenza Virus A/New York/384/2005(H3N2) MHC Class II Peptide			
1 of 1	13	HA (H3)	322-PRYVKQNTLKLAT-334
NRC-333: Influenza Virus A/Thailand/4(SP-528)/2004(H5N1) MHC Class II Peptide			
1 of 1	13	HA (H5)	319-PKYVKSNRLVLAT-331
NRC-246: Influenza Virus B MHC Class I Peptides			
1 of 3	9	NP	30-RPIIRPATL-38
2 of 3	10	NP	85-KLGEFYNQMM-94
3 of 3	9	NP	263-ADRGLLRDI-271
NRC-247: Influenza Virus B MHC Class II Peptide			
1 of 1	13	HA	308-PYYTGEHAKAIGN-320

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Table 2			
Peptide	**Solubility**	**Protein**	**Solvent**
NRC-244: Influenza Virus A MHC Class I Peptides			
1 of 35	1 mg/mL	HA (H1)	25% acetonitrile in water
2 of 35	1 mg/mL	HA (H1)	25% acetonitrile in water
3 of 35	1 mg/mL	HA (H1)	25% acetonitrile in water
4 of 35	1 mg/mL	NA (N1)	25% acetonitrile in water
5 of 35	1 mg/mL	NA (N1)	25% acetonitrile in water
6 of 35	1 mg/mL	NP	25% acetonitrile in water
7 of 35	1 mg/mL	NP	25% acetonitrile in water
8 of 35	1 mg/mL	NP	25% acetonitrile in water
9 of 35	1 mg/mL	NP	25% acetonitrile in water
10 of 35	1 mg/mL	NP	25% acetonitrile in water
11 of 35	1 mg/mL	NP	25% acetonitrile in water
12 of 35	1 mg/mL	NP	50% acetonitrile in water
13 of 35	1 mg/mL	NP	25% acetonitrile in water
14 of 35	1 mg/mL	NP	25% acetonitrile in water
15 of 35	1 mg/mL	NP	25% acetonitrile in water
16 of 35	1 mg/mL	NP	25% acetonitrile in water
17 of 35	1 mg/mL	NP	25% acetonitrile in water
18 of 35	1 mg/mL	NP	25% acetonitrile in water
19 of 35	1 mg/mL	NP	25% acetonitrile in water
20 of 35	1 mg/mL	NP	25% acetonitrile in water
21 of 35	1 mg/mL	NP	25% acetonitrile in water
22 of 35	1 mg/mL	NP	25% acetonitrile in water
23 of 35	1 mg/mL	M1	25% acetonitrile in water
24 of 35	1 mg/mL	M1	25% acetonitrile in water
25 of 35	1 mg/mL	M1	25% acetonitrile in water
26 of 35	1 mg/mL	M1	50% acetonitrile in water
27 of 35	1 mg/mL	M1	25% acetonitrile in water
28 of 35	1 mg/mL	M2	25% acetonitrile in water
29 of 35	1 mg/mL	M2	25% acetonitrile in water
30 of 35	1 mg/mL	NS1	25% acetonitrile in water
31 of 35	1 mg/mL	NS1	25% acetonitrile in water
32 of 35	1 mg/mL	PA	25% acetonitrile in water
33 of 35	1 mg/mL	PA	25% acetonitrile in water
34 of 35	1 mg/mL	PB1	25% acetonitrile in water
35 of 35	1 mg/mL	PB1	25% acetonitrile in water

Table 2			
Peptide	**Solubility**	**Protein**	**Solvent**
NRC-245: Influenza Virus A MHC Class II Peptides			
1 of 9	1 mg/mL	HA (H3)	25% acetonitrile in water
2 of 9	1 mg/mL	HA (H3)	25% acetonitrile in water
3 of 9	1 mg/mL	HA (H3)	25% acetonitrile in water
4 of 9	1 mg/mL	HA (H3)	25% acetonitrile in water
5 of 9	1 mg/mL	NP	25% acetonitrile in water
6 of 9	1 mg/mL	M1	25% acetonitrile in water
7 of 9	1 mg/mL	M1	25% acetonitrile in water
8 of 9	1 mg/mL	M1	25% acetonitrile in water
9 of 9	1 mg/mL	NS1	25% acetonitrile in water
NRC-331: Influenza Virus A/New Caledonia/20/99(H1N1) MHC Class II Peptide			
1 of 1	1 mg/mL	HA (H1)	25% acetonitrile in water
NRC-332: Influenza Virus A/New York/384/2005(H3N2) MHC Class II Peptide			
1 of 1	1 mg/mL	HA (H3)	25% acetonitrile in water
NRC-333: Influenza Virus A/Thailand/4(SP-528)/2004(H5N1) MHC Class II Peptide			
1 of 1	1 mg/mL	HA (H5)	25% acetonitrile in water
NRC-246: Influenza Virus B MHC Class I Peptides			
1 of 3	1 mg/mL	NP	25% acetonitrile in water
2 of 3	1 mg/mL	NP	25% acetonitrile in water
3 of 3	1 mg/mL	NP	25% acetonitrile in water
NRC-247: Influenza Virus B MHC Class II Peptide			
1 of 1	1 mg/mL	HA	25% acetonitrile in water

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