Product Information Sheet for NR-2609

Peptide Arrays, Influenza Virus A (H5N1) Hemagglutinin (HA) Diverse Peptides

Catalog No. NR-2609

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Contributor:
BEI Resources

Manufacturer:
American Peptide Company Inc.

Product Description:
NR-2609 contains seven peptide arrays that represent regions of amino acid sequence diversity in the hemagglutinin (HA) protein found in each of the following strains of influenza virus: A/Vietnam/1203/2004 (H5N1)[1] (NRC-220), A/Thailand/2(SP-33)/2004 (H5N1)[2] (NRC-221, NRC-224, and NRC-225), A/Thailand/1(KAN-1)/2004 (H5N1)[2] (NRC-222), and A/Vietnam/3046/2004 (H5N1)[3] (NRC-223 and NRC-237). The HA protein in these strains of influenza A virus corresponds to and has diverged from the HA protein found in the A/Thailand/4(SP-528)/2004 (H5N1) strain of influenza virus (GenPept: AAV34704).[2] Peptides are 16- or 17-mers, with 11 to 12 amino acid overlaps. Please see Table 1 for 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, Influenza Virus A (H5N1) Hemagglutinin (HA) Diverse Peptides, NR-2609."

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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BEI Resources
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

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References:

1. Govorkova, E. A., et al. "Lethality to Ferrets of H5N1 Influenza Viruses Isolated from Humans and Poultry in 2004." J. Virol. 79 (2005): 2191–2198. PubMed: 15681421. GenPept: AAW80717.
2. 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: AAS65618, AAS65615, and AAV34704.
3. Li, K. S., et al. "Genesis of a Highly Pathogenic and Potentially Pandemic H5N1 Influenza Virus in Eastern Asia." Nature 430 (2004): 209–213. PubMed: 15241415. GenPept: AAT73275.

Support Provided by NIAID

Table 1

Peptide	Length	Sequence
NRC-220: Influenza Virus A/Vietnam/1203/2004(H5N1) HA Protein		
1 of 3	17	36 MEKNVTVTHAQDILEKK 52
2 of 3	16	42 VTHAQDILEKKHNGKL 57
3 of 3	17	47 DILEKKHNGKLCDLDGV 63
NRC-221: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein		
1 of 3	17	130 IQIIPKSSWSSHEVSLG 146
2 of 3	17	136 SSWSSHEVSLGVSSACP 152
3 of 3	17	142 EVSLGVSSACPYQGKSS 158
NRC-222: Influenza Virus A/Thailand/1(KAN-1)/2004(H5N1) HA Protein		
1 of 3	17	145 EASLGVSSACPYQRKSS 161
2 of 3	17	151 SSACPYQRKSSFFRNVV 167
3 of 3	17	156 YQRKSSFFRNVVWLIKK 172
NRC-237: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein		
1 of 3	17	136 SSWSSHEASLGVSSVCP 152
2 of 3	17	142 EASLGVSSVCPYQGKSS 158
3 of 3	17	148 SSVCPYQGKSSFFRNVV 164
NRC-223: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein		
1 of 3	17	201 AEQTKLYQNPTTYVSVG 217
2 of 3	17	207 YQNPTTYVSVGTSTLNQ 223
3 of 3	17	213 YVSVGTSTLNQRLVPRI 229

Table 1		
Peptide	**Length**	**Sequence**
NRC-224: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein		
1 of 3	17	369 GYHHSNEQGSGYAAAKE 385
2 of 3	17	375 EQGSGYAAAKESTQKAI 391
3 of 3	17	381 AAAKESTQKAIDGVTNK 397
NRC-225: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein		
1 of 3	17	459 SNVKNLYDKVRLQLKDN 475
2 of 3	17	465 YDKVRLQLKDNAKELGN 481
3 of 3	17	470 LQLKDNAKELGNGCFEF 486

Table 2			
Peptide	**Solubility**	**Solvent**	**Reconstitution pH, if required**
NRC-220: Influenza Virus A/Vietnam/1203/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	Water	
3 of 3	1 mg/mL	Water	
NRC-221: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	Water	
3 of 3	1 mg/mL	Water	
NRC-222: Influenza Virus A/Thailand/1(KAN-1)/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	Water	
3 of 3	1 mg/mL	Water	
NRC-237: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	Water	
3 of 3	1 mg/mL	Water	
NRC-223: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	5% ammonium hydroxide in water	pH 11.0
3 of 3	1 mg/mL	Water	
NRC-224: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	Water	
3 of 3	1 mg/mL	Water	
NRC-225: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein			
1 of 3	1 mg/mL	Water	
2 of 3	1 mg/mL	Water	
3 of 3	1 mg/mL	Water	