Peptide Arrays, Influenza Virus B Hemagglutinin (HA) Diverse Peptides

Catalog No. NR-2610

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Contributor:

BEI Resources

Manufacturer:

American Peptide Company Inc.

Product Description:

NR-2610 contains nine peptide arrays that represent regions of amino acid sequence diversity in the hemagglutinin (HA) protein of the B/Shanghai/361/2002 (NRC-226, NRC-228, NRC-230, and NRC-234) and B/Malaysia/2506/2004 (NRC-227, NRC-229, NRC-231, NRC-232, and NRC-233) strains of influenza virus.[1] The HA proteins in these two strains of influenza B virus correspond to and have diverged from the pre-hemagglutinin protein in the B/Nanchang/12/1998 strain of influenza virus (GenPept: AAU94712).[2] Peptides are 17- to 18-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 B Hemagglutinin (HA) Diverse Peptides, NR-2610."

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. Wright, H. G., et al. "Reassortment of Surface and Internal Genes of Influenza B Viruses." Unpublished. GenPept: CAH04474.
2. McCullers, J. A., T. Saito, and A. R. Iverson. "Multiple Genotypes of Influenza B Virus Circulated Between 1979 and 2003." J. Virol. 78 (2004): 12817–12828. PubMed: 15542634. GenPept: AAU94712.

Support Provided by NIAID

Table 1

Peptide	Length	Sequence
NRC-226: Influenza Virus B/Shanghai/361/2002 HA Protein		
1 of 3	17	24 GEVNVTGVIPLTTTPIK 40
2 of 3	17	30 GVIPLTTTPIKSHFANL 46
3 of 3	17	36 TTPIKSHFANLKGTRTR 52
NRC-227: Influenza Virus B/Malaysia/2506/2004 HA Protein		
1 of 8	17	45 TTPTKSHFANLKGTETR 61
2 of 8	17	51 HFANLKGTETRGKLCPK 67
3 of 8	17	57 GTETRGKLCPKCLNCTD 73
4 of 8	17	63 KLCPKCLNCTDLDVALG 79
5 of 8	17	69 LNCTDLDVALGRPKCTG 85
6 of 8	17	75 DVALGRPKCTGNIPSAR 91
7 of 8	17	81 PKCTGNIPSARVSILHE 97
8 of 8	17	87 IPSARVSILHEVRPVTS 103
NRC-228: Influenza Virus B/Shanghai/361/2002 HA Protein		
1 of 4	17	113 LRGYENIRLSTQNVIDA 129
2 of 4	17	119 IRLSTQNVIDAEKALGG 135
3 of 4	17	125 NVIDAEKALGGPYRLGT 141
4 of 4	17	131 KALGGPYRLGTSGSCPN 147

Table 1		
Peptide	**Length**	**Sequence**
NRC-229: Influenza Virus B/Malaysia/2506/2004 HA Protein		
1 of 14	17	111 DRTKIRQLPNLLRGYEH 127
2 of 14	17	116 RQLPNLLRGYEHIRLST 132
3 of 14	17	122 LRGYEHIRLSTHNVINA 138
4 of 14	17	128 IRLSTHNVINAENAPGG 144
5 of 14	17	134 NVINAENAPGGSYKIGT 150
6 of 14	17	140 NAPGGSYKIGTSGSCPN 156
7 of 14	17	146 YKIGTSGSCPNVTNGNG 162
8 of 14	17	152 GSCPNVTNGNGFFATMA 168
9 of 14	17	158 TNGNGFFATMAWAVPKN 174
10 of 14	18	164 FATMAWAVPKNDNNKTAT 181
11 of 14	18	170 AVPKNDNNKTATNSLTIE 187
12 of 14	17	177 NKTATNSLTIEVPYICT 193
13 of 14	17	183 SLTIEVPYICTEGEDQI 199
14 of 14	17	189 PYICTEGEDQITVWGFH 205
NRC-230: Influenza Virus B/Shanghai/361/2002 HA Protein		
1 of 3	17	167 NKNATNPLTVEVPYICT 183
2 of 3	17	173 PLTVEVPYICTEGEDQI 189
3 of 3	17	179 PYICTEGEDQITVWGFH 195
NRC-231: Influenza Virus B/Malaysia/2506/2004 HA Protein		
1 of 5	17	195 GEDQITVWGFHSDNEAQ 211
2 of 5	17	201 VWGFHSDNEAQMAKLYG 217
3 of 5	17	207 DNEAQMAKLYGDSKPQK 223
4 of 5	17	213 AKLYGDSKPQKFTSSAN 229
5 of 5	17	219 SKPQKFTSSANGVTTHY 235
NRC-232: Influenza Virus B/Malaysia/2506/2004 HA Protein		
1 of 3	17	231 VTTHYVSQIGGFPNQTE 247
2 of 3	17	237 SQIGGFPNQTEDGGLPQ 253
3 of 3	17	243 PNQTEDGGLPQSGRIVV 259
NRC-233: Influenza Virus B/Malaysia/2506/2004 HA Protein		
1 of 4	17	255 GRIVVDYMVQKSGKTGT 271
2 of 4	17	261 YMVQKSGKTGTITYQRG 277
3 of 4	17	267 GKTGTITYQRGILLPQK 283
4 of 4	17	273 TYQRGILLPQKVWCASG 289
NRC-234: Influenza Virus B/Shanghai/361/2002 HA Protein		
1 of 2	17	311 YTGEHAKAIGHCPIWVK 327
2 of 2	17	317 KAIGHCPIWVKTPLKLA 333

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Table 2			
Peptide	**Solubility**	**Solvent**	**Reconstitution pH, if required**
NRC-226: Influenza Virus B/Shanghai/361/2002 HA Protein			
1 of 3	1 mg/mL	10% acetonitrile in water	pH 6
2 of 3	1 mg/mL	10% acetonitrile in water	pH 6
3 of 3	1 mg/mL	10% acetonitrile in water	pH 6
NRC-227: Influenza Virus B/Malaysia/2506/2004 HA Protein			
1 of 8	1 mg/mL	10% acetonitrile in water	pH 6
2 of 8	1 mg/mL	10% acetonitrile in water	pH 6
3 of 8	1 mg/mL	10% acetonitrile in water	pH 6
4 of 8	1 mg/mL	10% acetonitrile in water	pH 6
5 of 8	1 mg/mL	10% acetonitrile in water	pH 6
6 of 8	1 mg/mL	10% acetonitrile in water	pH 6
7 of 8	1 mg/mL	10% acetonitrile in water	pH 6
8 of 8	1 mg/mL	10% acetonitrile in water	pH 6
NRC-228: Influenza Virus B/Shanghai/361/2002 HA Protein			
1 of 4	1 mg/mL	10% acetonitrile in water	pH 6
2 of 4	1 mg/mL	10% acetonitrile in water	pH 6
3 of 4	1 mg/mL	10% acetonitrile in water	pH 6
4 of 4	1 mg/mL	10% acetonitrile in water	pH 6
NRC-229: Influenza Virus B/Malaysia/2506/2004 HA Protein			
1 of 14	1 mg/mL	10% acetonitrile in water	pH 6
2 of 14	1 mg/mL	10% acetonitrile in water	pH 6
3 of 14	1 mg/mL	10% acetonitrile in water	pH 6
4 of 14	1 mg/mL	10% acetonitrile in water	pH 6
5 of 14	1 mg/mL	10% acetonitrile in water	pH 6
6 of 14	1 mg/mL	10% acetonitrile in water	pH 6
7 of 14	1 mg/mL	10% acetonitrile in water	pH 6
8 of 14	1 mg/mL	10% acetonitrile in water	pH 6
9 of 14	1 mg/mL	10% acetonitrile in water	pH 6
10 of 14	1 mg/mL	10% acetonitrile in water	pH 6
11 of 14	1 mg/mL	10% acetonitrile in water	pH 6
12 of 14	1 mg/mL	10% acetonitrile in water	pH 6
13 of 14	1 mg/mL	10% acetonitrile in water	pH 6
14 of 14	1 mg/mL	Water	pH 7 (with ammonium hydroxide)
NRC-230: Influenza Virus B/Shanghai/361/2002 HA Protein			
1 of 3	1 mg/mL	10% acetonitrile in water	pH 6
2 of 3	1 mg/mL	10% acetonitrile in water	pH 6
3 of 3	1 mg/mL	10% acetonitrile in water	pH 6

Table 2			
Peptide	**Solubility**	**Solvent**	**Reconstitution pH, if required**
NRC-231: Influenza Virus B/Malaysia/2506/2004 HA Protein			
1 of 5	1 mg/mL	10% acetonitrile in water	pH 7 (with ammonium hydroxide)
2 of 5	1 mg/mL	10% acetonitrile in water	pH 6
3 of 5	1 mg/mL	10% acetonitrile in water	pH 6
4 of 5	1 mg/mL	10% acetonitrile in water	pH 6
5 of 5	1 mg/mL	10% acetonitrile in water	pH 6
NRC-232: Influenza Virus B/Malaysia/2506/2004 HA Protein			
1 of 3	1 mg/mL	10% acetonitrile in water	pH 6
2 of 3	1 mg/mL	10% acetonitrile in water	pH 6
3 of 3	1 mg/mL	10% acetonitrile in water	pH 6
NRC-233: Influenza Virus B/Malaysia/2506/2004 HA Protein			
1 of 4	1 mg/mL	10% acetonitrile in water	pH 6
2 of 4	1 mg/mL	10% acetonitrile in water	pH 6
3 of 4	1 mg/mL	10% acetonitrile in water	pH 6
4 of 4	1 mg/mL	10% acetonitrile in water	pH 6
NRC-234: Influenza Virus B/Shanghai/361/2002 HA Protein			
1 of 2	1 mg/mL	10% acetonitrile in water	pH 6
2 of 2	1 mg/mL	10% acetonitrile in water	pH 6

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