

Peptide Array, Influenza Virus A/Vietnam/1203/2004 (H5N1) Hemagglutinin Protein

Catalog No. NR-2704

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Contributor:

BEI Resources

Manufacturer:

CS Bio Company Inc.

Product Description:

The 10-peptide array spans the hemagglutinin protein of the A/Vietnam/1203/2004 (H5N1) strain of influenza virus (GenPept: AAW80717).¹ The initial 16-amino-acid signal peptide has been excluded; therefore the array starts from a mature N-terminus. In addition, cysteine residues have been substituted with serine at positions C4, C42, C274, C467, C541, C548 and C551. Peptides are 45- to 80-mers, with 16 to 22 amino acid overlaps. Please see Table 1 for length and sequence of individual peptides.

Note: The last two peptides, 9A and 9B, were based on a 75-mer. Attempts were made to purify this 75-mer by HPLC; however, due to the high content of hydrophobic residues, it was difficult to obtain useful results. Synthesizing two smaller peptides gave acceptable HPLC results for the 9B peptide, but not for the more hydrophobic 9A peptide. For further details please see the Certificate of Analysis.

Material Provided:

Peptides are provided lyophilized at 0.5 mg per vial.

Packaging/Storage:

Lyophilized peptides should be placed in a closed dry environment with dessicants 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 BEI Resources, NIAID, NIH: Peptide Array, Influenza Virus A/Vietnam/1203/2004 (H5N1) Hemagglutinin Protein, NR-2704.”

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/bmb15/index.htm.

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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.

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Peptide	Length	Sequence
1 of 9	80	1-DQISIGYHANNSTEQVDTIMEKNVTVTHAQDILEKKHNGKLSLDLGVKPLILRDCSVAGWLLGNPMCDEFINVPESYIV-80
2 of 9	80	61-LLGNPMSDEFINVPESYIVEKANPVNDLCYPGDFNDYEELKHLLSRINHFEEKIIPKSSWSSHEASLGVSSACPYQ GK-140
3 of 9	80	121-SWSSHEASLGVSSACPYQGKSSFFRNVVWLIKKNSTYPTIKRSYNNNTNQEDLLVLWGIHHPNDAAEQTKLYQNPTTYISV-200
4 of 9	80	181-PNDAAEQTKLYQNPTTYISVGTSTLNQRLVPRIATRSKVNGQSGRMEFFWTILKPNDAINFESNGNFIAPEYAYKIVKKG-260
5 of 9	79	241-FESNGNFIAPEYAYKIVKKG DSTIMKSELEYGNSNTKCQTPMGAINSSMPFHNIHPLTIGECPKYVKS NRLVLATGLRN-319
6 of 9	80	300-GECPKYVKS NRLVLATGLRNSPQRERRRKRGLFGAIAGFIEGGWQGMVDGWYGYHHSNEQGSGYAADKESTQKAIDGVT-379
7 of 9	80	358-NEQSGGYAADKESTQKAIDGVTNKVNSIIDKMNTQFEAVGREFNLERIENLNKKMEDGFLDVWYTNAELLVLMENERT-437
8 of 9	80	418-FLDVWYTNAELLVLMENERTLDFHDSNVKNLYDKVRLQLRDNAKELGNSSFEFYHKCDNECMESVRNGTYDYPQYSEEAR-497
9B of 9	45	478-CMESVRNGTYDYPQYSEEARLKREEISGVKLESIGIYQILSIYST-522
9A of 9	46	507-KLESIGIYQILSIYSTVASSLALAIMVAGLSLWMSNGSLQSRISI-552

Peptide	Solubility	Solvent
1 of 9	1 mg/mL	25% acetonitrile in water
2 of 9	1 mg/mL	25% acetonitrile in water
3 of 9	1 mg/mL	25% acetonitrile in water
4 of 9	1 mg/mL	25% acetonitrile in water
5 of 9	1 mg/mL	25% acetonitrile in water
6 of 9	1 mg/mL	25% acetonitrile in water
7 of 9	1 mg/mL	25% acetonitrile in water
8 of 9	1 mg/mL	25% acetonitrile in water
9B of 9	1 mg/mL	50% acetonitrile in water
9A of 9	1 mg/mL	100% DMSO