

**Peptide Array, Influenza Virus
A/Vietnam/1203/2004 (H5N1) Hemagglutinin
Protein****Catalog No. NR-18974**

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

Manufacturer:

C S Bio Company, Inc.

Product Description:

The 93-peptide array spans the hemagglutinin (HA) protein of the A/Vietnam/1203/2004 (H5N1) strain of influenza virus (GenPept: ABW90137).¹ Peptides are 12- or 17-mers, with 11 amino acid overlaps. 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 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 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 the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Peptide Array, Influenza Virus A/Vietnam/1203/2004 (H5N1) Hemagglutinin Protein, NR-18974."

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/bmbl5/bmbl5toc.htm.

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References:

1. Kaverin, N. V., et al. "Epitope Mapping of the Hemagglutinin Molecule of a Highly Pathogenic H5N1 Influenza Virus by Using Monoclonal Antibodies." *J. Virol.* 81 (2007): 12911-12917. PubMed: 17881439. GenPept: ABW90137.

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Table 1		
Peptide	Length	Sequence
1 of 93	17	1-MEKIVLLFAIVSLVKSD-17
2 of 93	17	7-LFAIVSLVKSDQICIGY-23
3 of 93	17	13-LVKSDQICIGYHANNST-29
4 of 93	17	19-ICIGYHANNSTEQVDTI-35
5 of 93	17	25-ANNSTEQVDTIMEKNVT-41
6 of 93	17	31-QVDTIMEKNVTVTHAQD-47
7 of 93	17	37-EKNVTVTHAQDILEKKH-53
8 of 93	17	43-THAQDILEKKHNGKLCD-59
9 of 93	17	49-LEKKHNGKLCDLDGVKP-65
10 of 93	17	55-GKLCDLDGVKPLILRDC-71
11 of 93	17	61-DGVKPLILRDCSVAGWL-77
12 of 93	17	67-ILRDCSVAGWLLGNPMC-83
13 of 93	17	73-VAGWLLGNPMCDEFINV-89
14 of 93	17	79-GNPMCDEFINVPEWSYI-95
15 of 93	17	85-EFINVPEWSYIVEKANP-101
16 of 93	17	91-EWSYIVEKANPVNDLCY-107
17 of 93	17	97-EKANPVNDLCYPGDFND-113
18 of 93	17	103-NDLCYPGDFNDYEELKH-119
19 of 93	17	109-GDFNDYEELKHLLSRIN-125
20 of 93	17	115-EELKHLLSRINHFEKIQ-131
21 of 93	17	121-LSRINHFEKIQIIPKSS-137
22 of 93	17	127-FEKIQIIPKSSWSSHEA-143
23 of 93	17	133-IPKSSWSSHEASLGVSS-149
24 of 93	17	139-SSHEASLGVSSACPYQG-155
25 of 93	17	145-LGVSSACPYQGKTSFFR-161
26 of 93	17	151-CPYQGKTSFFRNVVWLI-167
27 of 93	17	157-TSFFRNVVWLIKKNSTY-173
28 of 93	17	163-VVWLIKKNSTYPTIKRS-179
29 of 93	17	169-KNSTYPTIKRSYNNNTN-185
30 of 93	17	175-TIKRSYNNNTNQEDLLVL-191

Table 1		
Peptide	Length	Sequence
31 of 93	17	181-NNTNQEDLLVLWGIHHP-197
32 of 93	17	187-DLLVLWGIHHPNDAAEQ-203
33 of 93	17	193-GIHPNDAAEQTKLYQN-209
34 of 93	17	199-DAAEQTKLYQNPTYIS-215
35 of 93	17	205-KLYQNPTYISVGTSTL-221
36 of 93	17	211-TTYISVGTSTLNQRLVP-227
37 of 93	17	217-GTSTLNQRLVPRIATRS-233
38 of 93	17	223-QRLVPRIATRSKVNGQS-239
39 of 93	17	229-IATRSKVNGQSGRMEFF-245
40 of 93	17	235-VNGQSGRMEFFWTILKP-251
41 of 93	17	241-RMEFFWTILKPNDAINF-257
42 of 93	17	247-TILKPNDAINFESNGNF-263
43 of 93	17	253-DAINFESNGNFIAPEYA-269
44 of 93	17	259-SNGNFIAPEYAYKIVKK-275
45 of 93	17	265-APEYAYKIVKKGDSTIM-281
46 of 93	17	271-KIVKKGDSTIMKSELEY-287
47 of 93	17	277-DSTIMKSELEYGNCNTK-293
48 of 93	17	283-SELEYGNCNTKCQTPMG-299
49 of 93	17	289-NCNTKCQTPMGAINSSM-305
50 of 93	17	295-QTPMGAINSSMPFHNIH-311
51 of 93	17	301-INSSMPFHNIHPLTIGE-317
52 of 93	17	307-FHNIHPLTIGECPKYVK-323
53 of 93	17	313-LTIGECPKYVKSRLVL-329
54 of 93	17	319-PKYVKSRLVLATGLRN-335
55 of 93	17	325-NRLVLATGLRNSPQRET-341
56 of 93	17	331-TGLRNSPQRETRGLFGA-347
57 of 93	17	337-PQRETRGLFGAIAGFIE-353
58 of 93	17	343-GLFGAIAGFIEGGWQGM-359
59 of 93	17	349-AGFIEGGWQGMVDGWYG-365
60 of 93	17	355-GWQGMVDGWYGYHHSNE-371
61 of 93	17	361-DGWYGYHHSNEQGSYGA-377
62 of 93	17	367-HHSNEQGSYGAADKEST-383
63 of 93	17	373-GSYGAADKESTQKAIDG-389
64 of 93	17	379-DKESTQKAIDGVTNKVN-395
65 of 93	17	385-KAIDGVTNKVNSIIDKM-401
66 of 93	17	391-TNKVNSIIDKMNTQFEA-407
67 of 93	17	397-IIDKMNTQFEAVGREFN-413
68 of 93	17	403-TQFEAVGREFNLERRI-419
69 of 93	17	409-GREFNNLERRIENLNKK-425
70 of 93	17	415-LERRIENLNKKMEDGFL-431
71 of 93	17	421-NLNKKMEDGFLDVWTYN-437
72 of 93	17	427-EDGFLDVWTYNAELLVL-443
73 of 93	17	433-VWTYNAELLVLMENERT-449

Table 1		
Peptide	Length	Sequence
74 of 93	17	439-ELLVLMENERTLDFHDS-455
75 of 93	17	445-ENERTLDFHDSNVKNLY-461
76 of 93	17	451-DFHDSNVKNLYDKVRLQ-467
77 of 93	17	457-VKNLYDKVRLQLRDNAL-473
78 of 93	17	463-KVRLQLRDNALGNGC-479
79 of 93	17	469-RDNALGNGCFEFYHK-485
80 of 93	17	475-LGNGCFEFYHKCDNECM-491
81 of 93	17	481-EFYHKCDNECMESVRNG-497
82 of 93	17	487-DNECMESVRNGTYDYPQ-503
83 of 93	17	493-SVRNGTYDYPQYSEEAR-509
84 of 93	17	499-YDYPQYSEEARLKREEI-515
85 of 93	17	505-SEEARLKREEISGVKLE-521
86 of 93	17	511-KREEISGVKLESIGIYQ-527
87 of 93	17	517-GVKLESIGIYQILSIYS-533
88 of 93	17	523-IGIYQILSIYSTVASSL-539
89 of 93	17	529-LSIYSTVASSLALAIMV-545
90 of 93	17	535-VASSLALAIMVAGLSLW-551
91 of 93	17	541-LAIMVAGLSLWMCSNGS-557
92 of 93	17	547-GLSLWMCSNGSLQCRIC-563
93 of 93	12	553-CSNGSLQCRICI-564

Table 2		
Peptide	Concentration	Solvent
1 of 93	1 mg/mL	25% acetonitrile in water
2 of 93	1 mg/mL	50% acetonitrile in water
3 of 93	1 mg/mL	25% acetonitrile in water
4 of 93	1 mg/mL	50% acetonitrile in water
5 of 93	1 mg/mL	25% acetonitrile in water
6 of 93	1 mg/mL	25% acetonitrile in water
7 of 93	1 mg/mL	25% acetonitrile in water
8 of 93	1 mg/mL	25% acetonitrile in water
9 of 93	1 mg/mL	25% acetonitrile in water
10 of 93	1 mg/mL	25% acetonitrile in water
11 of 93	1 mg/mL	25% acetonitrile in water
12 of 93	1 mg/mL	25% acetonitrile in water
13 of 93	1 mg/mL	25% acetonitrile in water
14 of 93	1 mg/mL	25% acetonitrile in water
15 of 93	1 mg/mL	25% acetonitrile in water

Table 2		
Peptide	Concentration	Solvent
16 of 93	1 mg/mL	25% acetonitrile in water
17 of 93	1 mg/mL	25% acetonitrile in water
18 of 93	1 mg/mL	25% acetonitrile in water
19 of 93	1 mg/mL	50% acetonitrile in water
20 of 93	1 mg/mL	25% acetonitrile in water
21 of 93	1 mg/mL	25% acetonitrile in water
22 of 93	1 mg/mL	25% acetonitrile in water
23 of 93	1 mg/mL	25% acetonitrile in water
24 of 93	1 mg/mL	25% acetonitrile in water
25 of 93	1 mg/mL	25% acetonitrile in water
26 of 93	1 mg/mL	25% acetonitrile in water
27 of 93	1 mg/mL	25% acetonitrile in water
28 of 93	1 mg/mL	25% acetonitrile in water
29 of 93	1 mg/mL	25% acetonitrile in water
30 of 93	1 mg/mL	25% acetonitrile in water
31 of 93	1 mg/mL	25% acetonitrile in water
32 of 93	1 mg/mL	50% acetonitrile in water
33 of 93	1 mg/mL	25% acetonitrile in water
34 of 93	1 mg/mL	25% acetonitrile in water
35 of 93	1 mg/mL	25% acetonitrile in water
36 of 93	1 mg/mL	50% acetonitrile in water
37 of 93	1 mg/mL	25% acetonitrile in water
38 of 93	1 mg/mL	25% acetonitrile in water
39 of 93	1 mg/mL	25% acetonitrile in water
40 of 93	1 mg/mL	25% acetonitrile in water
41 of 93	1 mg/mL	50% acetonitrile in water
42 of 93	1 mg/mL	25% acetonitrile in water
43 of 93	1 mg/mL	50% acetonitrile in water
44 of 93	1 mg/mL	25% acetonitrile in water
45 of 93	1 mg/mL	25% acetonitrile in water
46 of 93	1 mg/mL	25% acetonitrile in water
47 of 93	1 mg/mL	25% acetonitrile in water
48 of 93	1 mg/mL	25% acetonitrile in water
49 of 93	1 mg/mL	25% acetonitrile in water
50 of 93	1 mg/mL	25% acetonitrile in water
51 of 93	1 mg/mL	25% acetonitrile in water
52 of 93	1 mg/mL	25% acetonitrile in water
53 of 93	1 mg/mL	25% acetonitrile in water
54 of 93	1 mg/mL	25% acetonitrile in water
55 of 93	1 mg/mL	25% acetonitrile in water
56 of 93	1 mg/mL	25% acetonitrile in water

Table 2		
Peptide	Concentration	Solvent
57 of 93	1 mg/mL	25% acetonitrile in water
58 of 93	1 mg/mL	25% acetonitrile in water
59 of 93	1 mg/mL	25% acetonitrile in water
60 of 93	1 mg/mL	25% acetonitrile in water
61 of 93	1 mg/mL	50% acetonitrile in water
62 of 93	1 mg/mL	25% acetonitrile in water
63 of 93	1 mg/mL	25% acetonitrile in water
64 of 93	1 mg/mL	25% acetonitrile in water
65 of 93	1 mg/mL	25% acetonitrile in water
66 of 93	1 mg/mL	25% acetonitrile in water
67 of 93	1 mg/mL	25% acetonitrile in water
68 of 93	1 mg/mL	25% acetonitrile in water
69 of 93	1 mg/mL	25% acetonitrile in water
70 of 93	1 mg/mL	25% acetonitrile in water
71 of 93	1 mg/mL	25% acetonitrile in water
72 of 93	1 mg/mL	25% acetonitrile in water
73 of 93	1 mg/mL	25% acetonitrile in water
74 of 93	1 mg/mL	25% acetonitrile in water
75 of 93	1 mg/mL	25% acetonitrile in water
76 of 93	1 mg/mL	25% acetonitrile in water
77 of 93	1 mg/mL	25% acetonitrile in water
78 of 93	1 mg/mL	25% acetonitrile in water
79 of 93	1 mg/mL	25% acetonitrile in water
80 of 93	1 mg/mL	25% acetonitrile in water
81 of 93	1 mg/mL	25% acetonitrile in water
82 of 93	1 mg/mL	25% acetonitrile in water
83 of 93	1 mg/mL	25% acetonitrile in water
84 of 93	1 mg/mL	25% acetonitrile in water
85 of 93	1 mg/mL	25% acetonitrile in water
86 of 93	1 mg/mL	25% acetonitrile in water
87 of 93	1 mg/mL	25% acetonitrile in water
88 of 93	1 mg/mL	50% acetonitrile in water
89 of 93	1 mg/mL	50% acetonitrile in water
90 of 93	1 mg/mL	25% acetonitrile in water
91 of 93	1 mg/mL	25% acetonitrile in water
92 of 93	1 mg/mL	25% acetonitrile in water
93 of 93	1 mg/mL	25% acetonitrile in water