

**Peptide Array, Influenza Virus  
A/New York/384/2005 (H3N2)  
Hemagglutinin Protein**

**Catalog No. NR-2603**

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**Contributor:**

BEI Resources

**Manufacturer:**

American Peptide Company, Inc.

**Product Description:**

The 94-peptide array spans the hemagglutinin (HA) protein of the A/New York/384/2005 (H3N2) strain of influenza virus (GenPept: AAZ79974).<sup>1</sup> Peptides are 16- to 17-mers, with 11 to 13 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). 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 -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/New York/384/2005 (H3N2) Hemagglutinin Protein, NR-2603."

**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](http://www.cdc.gov/biosafety/publications/bmb15/index.htm).

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## Product Information Sheet for NR-2603

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### References:

1. Ghedin, E., et al. "The NIAID Influenza Genome Sequencing Project." Direct submission (2005). GenPept: AAZ79974.

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Table 1		
Peptide	Length	Sequence
1 of 94	17	1 MKTIALSILCLVFAQ 17
2 of 94	17	7 LSYILCLVFAQKLPGND 23
3 of 94	17	13 LVFAQKLPGNDNSTATL 29
4 of 94	17	19 LPGNDNSTATLCLGHHA 35
5 of 94	17	25 STATLCLGHHAVPNGTI 41
6 of 94	17	31 LGHHAVPNGTIVKTITN 47
7 of 94	17	37 PNGTIVKTITNDQIEVT 53
8 of 94	17	43 KTITNDQIEVTNATELV 59
9 of 94	17	48 DQIEVTNATELVQSSST 64
10 of 94	17	54 NATELVQSSSTGGICDS 70
11 of 94	17	59 VQSSSTGGICDSPHQIL 75
12 of 94	17	65 GGICDSPHQILDGENCT 81
13 of 94	17	71 PHQILDGENCTLIDALL 87
14 of 94	17	77 GENCTLIDALLGDPQCD 93
15 of 94	17	83 IDALLGDPQCDGFQNK 99
16 of 94	17	89 DPQCDGFQNKKWDLFVE 105
17 of 94	17	95 FQNKKWDLFVERSKAYS 111
18 of 94	17	101 DLFVERSKAYSNCYPYD 117
19 of 94	17	107 SKAYSNCYPYDVPDYAS 123
20 of 94	17	113 CYPYDVPDYASLRSLVA 129
21 of 94	17	119 PDYASLRSLVASSGTLE 135
22 of 94	17	125 RSLVASSGTLEFNNEF 141
23 of 94	17	131 SGTLEFNNEFNVWTGVT 147
24 of 94	17	137 NNEFNVWTGVTQNGTSS 153
25 of 94	17	143 WTGVTQNGTSSACKRRS 159
26 of 94	17	149 NGTSSACKRRSNNSFFS 165
27 of 94	17	155 CKRRSNNSFFSRLNWL 171
28 of 94	17	161 NSFFSRLNWLTHLKFY 177
29 of 94	17	167 LNWLTHLKFYKYPALNVT 183
30 of 94	17	173 LKFYKYPALNVTMPNNEK 189

Table 1		
Peptide	Length	Sequence
31 of 94	17	179 ALNVTMPNNEKFDKLYI 195
32 of 94	17	185 PNNEKFDKLYIW/GVHHP 201
33 of 94	17	191 DKLYIWGVHHPGTNNDQ 207
34 of 94	17	197 GVHHPGTNNDQISLYAQ 213
35 of 94	17	203 TNNDQISLYAQASGRIT 219
36 of 94	17	209 SLYAQASGRITVSTKRS 225
37 of 94	17	215 SGRITVSTKRSQQTVIP 231
38 of 94	17	221 STKRSQQTVIPNIGSRP 237
39 of 94	17	225 SQQTVIPNIGSRPRVRD 241
40 of 94	17	231 PNIGSRPRVRDIPSRIS 247
41 of 94	17	237 PRVRDIPSRISYWTIV 253
42 of 94	17	243 PSRISYWTIVKPGDIL 259
43 of 94	17	249 YWTIVKPGDILLINSTG 265
44 of 94	17	255 PGDILLINSTGNLIAPR 271
45 of 94	17	261 INSTGNLIAPRGYFKIR 277
46 of 94	17	267 LIAPRGYFKIRSGKSSI 283
47 of 94	17	273 YFKIRSGKSSIMRSDAP 289
48 of 94	17	279 GKSSIMRSDAPIGKCNS 295
49 of 94	17	285 RSDAPIGKCNSECITPN 301
50 of 94	17	291 GKCNSECITPNGSIPND 307
51 of 94	17	297 CITPNGSIPNDKPFQNV 313
52 of 94	17	303 SIPNDKPFQNVNRITYG 319
53 of 94	17	309 PFQNVNRITYGACPRYV 325
54 of 94	17	315 RITYGACPRYVKQNTLK 331
55 of 94	17	321 CPRYVKQNTLKLATGMR 337
56 of 94	17	326 KQNTLKLATGMRNVPEK 342
57 of 94	17	332 LATGMRNVPEKQTRGIF 348
58 of 94	17	338 NVPEKQTRGIFGAIAGF 354
59 of 94	17	344 TRGIFGAIAGFIENGWE 360
60 of 94	17	350 AIAGFIENGWEGMVDGW 366
61 of 94	17	356 ENGWEGMVDGWYGFRRHQ 372
62 of 94	17	362 MVDGWYGFRRHQNSEGIG 378
63 of 94	17	368 GFRHQNSEGIGQAADLK 384
64 of 94	17	374 SEGIGQAADLKSTQAAI 390
65 of 94	17	380 AADLKSTQAAINQINGK 396
66 of 94	17	386 TQAAINQINGKLNRLIG 402
67 of 94	17	391 NQINGKLNRLIGKTNEK 407
68 of 94	17	397 LNRLIGKTNEKFHQIEK 413
69 of 94	17	403 KTNEKFHQIEKEFSEVE 419
70 of 94	17	409 HQIEKEFSEVEGRIQDL 425

Table 1		
Peptide	Length	Sequence
71 of 94	17	415 FSEVEGRIQDLEKYVED 431
72 of 94	17	421 RIQDLEKYVEDTKIDLW 437
73 of 94	17	427 KYVEDTKIDLWSYNAEL 443
74 of 94	17	433 KIDLWSYNAELLVALEN 449
75 of 94	17	439 YNAELLVALENQHTIDL 455
76 of 94	17	445 VALENQHTIDLDSEMN 461
77 of 94	17	451 HTIDLDSEMNKLFERT 467
78 of 94	17	457 DSEMNKLFERTKKQLRE 473
79 of 94	17	463 LFERTKKQLRENAEDMG 479
80 of 94	17	469 KQLRENAEDMGNGCFKI 485
81 of 94	17	475 AEDMGNGCFKIYHKCDN 491
82 of 94	17	481 GCFKIYHKCDNACIGSI 497
83 of 94	17	487 HKCDNACIGSIRNGTYD 503
84 of 94	17	493 CIGSIRNGTYDHDVYRD 509
85 of 94	17	499 NGTYDHDVYRDEALNNR 515
86 of 94	17	505 DVYRDEALNNRFQIKGV 521
87 of 94	17	511 ALNNRFQIKGVELKSGY 527
88 of 94	17	516 FQIKGVELKSGYKDWIL 532
89 of 94	17	522 ELKSGYKDWILWISFAI 538
90 of 94	16	528 KDWILWISFAISCFL 543
91 of 94	17	533 WISFAISCFLLCVALLG 549
92 of 94	16	539 SCFLLCVALLGFIMWA 554
93 of 94	17	544 CVALLGFIMWACQKGN 560
94 of 94	17	550 FIMWACQKGNIRCNICI 566

Table 2			
Peptide	Solubility	Solvent	Reconstitution pH, if required
1 of 94	1 mg/mL	Formic acid	pH 1
2 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
3 of 94	1 mg/mL	20% acetonitrile in water	pH 6
4 of 94	1 mg/mL	Water	
5 of 94	1 mg/mL	20% acetonitrile in water	pH 6
6 of 94	1 mg/mL	20% acetonitrile in water	pH 6
7 of 94	1 mg/mL	0.02% ammonia and 20% acetonitrile in water	pH 8
8 of 94	1 mg/mL	0.02% ammonia and 20% acetonitrile in water	pH 8
9 of 94	1 mg/mL	Water	
10 of 94	1 mg/mL	Water	
11 of 94	1 mg/mL	20% acetonitrile in water	pH 6
12 of 94	1 mg/mL	20% acetonitrile in water	pH 6

Table 2			
Peptide	Solubility	Solvent	Reconstitution pH, if required
13 of 94	1 mg/mL	30% acetonitrile in water	pH 6
14 of 94	1 mg/mL	30% acetonitrile in water	pH 6
15 of 94	1 mg/mL	20% acetonitrile in water	pH 6
16 of 94	1 mg/mL	20% acetonitrile in water	pH 6
17 of 94	1 mg/mL	20% acetonitrile in water	pH 6
18 of 94	1 mg/mL	20% acetonitrile in water	pH 6
19 of 94	1 mg/mL	20% acetonitrile in water	pH 6
20 of 94	1 mg/mL	20% acetonitrile in water	pH 6
21 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
22 of 94	1 mg/mL	Water	
23 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
24 of 94	1 mg/mL	0.02% ammonia and 10% acetonitrile in water	pH 8
25 of 94	1 mg/mL	10% acetonitrile in water	pH 6
26 of 94	1 mg/mL	20% acetonitrile in water	pH 6
27 of 94	1 mg/mL	30% acetonitrile in water	pH 6
28 of 94	1 mg/mL	30% acetonitrile in water	pH 6
29 of 94	1 mg/mL	30% acetonitrile in water	pH 6
30 of 94	1 mg/mL	20% acetonitrile in water	pH 6
31 of 94	1 mg/mL	20% acetonitrile in water	pH 6
32 of 94	1 mg/mL	20% acetonitrile in water	pH 6
33 of 94	1 mg/mL	20% acetonitrile in water	pH 6
34 of 94	1 mg/mL	10% acetonitrile in water	pH 6
35 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
36 of 94	1 mg/mL	Water	
37 of 94	1 mg/mL	10% acetonitrile in water	pH 6
38 of 94	1 mg/mL	10% acetonitrile in water	pH 6
39 of 94	1 mg/mL	20% acetonitrile in water	pH 6
40 of 94	1 mg/mL	Water	
41 of 94	1 mg/mL	30% acetonitrile in water	pH 6
42 of 94	1 mg/mL	40% acetonitrile in water	pH 6
43 of 94	1 mg/mL	30% acetonitrile in water	pH 6
44 of 94	1 mg/mL	20% acetonitrile in water	pH 6
45 of 94	1 mg/mL	20% acetonitrile in water	pH 6
46 of 94	1 mg/mL	20% acetonitrile in water	pH 6
47 of 94	1 mg/mL	20% acetonitrile in water	pH 6
48 of 94	1 mg/mL	10% acetonitrile in water	pH 6
49 of 94	1 mg/mL	10% acetonitrile in water	pH 6
50 of 94	1 mg/mL	10% acetonitrile in water	pH 6
51 of 94	1 mg/mL	10% acetonitrile in water	pH 6
52 of 94	1 mg/mL	10% acetonitrile in water	pH 6
53 of 94	1 mg/mL	20% acetonitrile in water	pH 6
54 of 94	1 mg/mL	Water	
55 of 94	1 mg/mL	10% acetonitrile in water	pH 6

Table 2			
Peptide	Solubility	Solvent	Reconstitution pH, if required
56 of 94	1 mg/mL	10% acetonitrile in water	pH 6
57 of 94	1 mg/mL	20% acetonitrile in water	pH 6
58 of 94	1 mg/mL	30% acetonitrile in water	pH 6
59 of 94	1 mg/mL	0.02% ammonia and 40% acetonitrile in water	pH 8
60 of 94	1 mg/mL	0.02% ammonia and 20% acetonitrile in water	pH 8
61 of 94	1 mg/mL	20% acetonitrile in water	pH 6
62 of 94	1 mg/mL	20% acetonitrile in water	pH 6
63 of 94	1 mg/mL	10% acetonitrile in water	pH 6
64 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
65 of 94	1 mg/mL	20% acetonitrile in water	pH 6
66 of 94	1 mg/mL	20% acetonitrile in water	pH 6
67 of 94	1 mg/mL	20% acetonitrile in water	pH 6
68 of 94	1 mg/mL	10% acetonitrile in water	pH 6
69 of 94	1 mg/mL	10% acetonitrile in water	pH 6
70 of 94	1 mg/mL	20% acetonitrile in water	pH 6
71 of 94	1 mg/mL	0.02% ammonia and 20% acetonitrile in water	pH 8
72 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
73 of 94	1 mg/mL	0.02% ammonia and 30% acetonitrile in water	pH 8
74 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
75 of 94	1 mg/mL	30% acetonitrile in water	pH 6
76 of 94	1 mg/mL	20% acetonitrile in water	pH 6
77 of 94	1 mg/mL	20% acetonitrile in water	pH 6
78 of 94	1 mg/mL	20% acetonitrile in water	pH 6
79 of 94	1 mg/mL	10% acetonitrile in water	pH 6
80 of 94	1 mg/mL	20% acetonitrile in water	pH 6
81 of 94	1 mg/mL	10% acetonitrile in water	pH 6
82 of 94	1 mg/mL	20% acetonitrile in water	pH 6
83 of 94	1 mg/mL	10% acetonitrile in water	pH 6
84 of 94	1 mg/mL	10% acetonitrile in water	pH 6
85 of 94	1 mg/mL	10% acetonitrile in water	pH 6
86 of 94	1 mg/mL	20% acetonitrile in water	pH 6
87 of 94	1 mg/mL	20% acetonitrile in water	pH 6
88 of 94	1 mg/mL	20% acetonitrile in water	pH 6
89 of 94	1 mg/mL	40% acetonitrile in water	pH 6
90 of 94	1 mg/mL	50% formic acid and 50% acetonitrile	pH 1
91 of 94	1 mg/mL	50% formic acid and 50% acetonitrile	pH 1
92 of 94	1 mg/mL	50% formic acid and 50% acetonitrile	pH 1
93 of 94	1 mg/mL	5% ammonium hydroxide in water	pH 11
94 of 94	1 mg/mL	4% formic acid and 40% acetonitrile in water	pH 3