

**Peptide Array, Dengue Virus Type 3 (DEN-3),  
Philippines/H87/1956, NS3 Protein****Catalog No. NR-2754**

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**Product Description:**

The 105-peptide array spans the NS3 protein of Dengue virus type 3, Philippines/H87/1956 (GenPept: AAA99437).<sup>1</sup> Peptides are 14- to 17-mers, with 11 or 12 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 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 the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Peptide Array, Dengue Virus Type 3 (DEN-3), Philippines/H87/1956, NS3 Protein, NR-2754."

**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/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

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### References:

1. Osatomi, K. and H. Sumiyoshi. "Complete Nucleotide Sequence of Dengue Type 3 Virus Genome RNA." *Virology* 176 (1990): 643–647. PubMed: 2345967.
2. Modis, Y., S. Ogata, D. Clements, and S. C. Harrison. "Variable Surface Epitopes in the Crystal Structure of Dengue Virus Type 3 Envelope Glycoprotein." *J. Virol.* 79 (2005): 1223–1231. PubMed: 15613349.

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| Table 1   |        |                            |
|-----------|--------|----------------------------|
| Peptide   | Length | Sequence                   |
| 1 of 105  | 17     | 1 SGVLWDVPSPPETQKAE 17     |
| 2 of 105  | 17     | 7 VPSPPETQKAELEEGVY 23     |
| 3 of 105  | 17     | 13 TQKAELEEGVYRIKQQG 29    |
| 4 of 105  | 17     | 18 LEEGVYRIKQQGIFGKT 34    |
| 5 of 105  | 17     | 24 RIKQQGIFGKTQVGVG 40     |
| 6 of 105  | 17     | 30 IFGKTQVGVGQKEGVF 46     |
| 7 of 105  | 17     | 36 VGVGQKEGVFHTMWHV 52     |
| 8 of 105  | 17     | 42 KEGVFHTMWHVTRGAVL 58    |
| 9 of 105  | 17     | 48 TMWHVTRGAVLTHNGKR 64    |
| 10 of 105 | 17     | 54 RGAVLTHNGKRLEPNWA 70    |
| 11 of 105 | 17     | 60 HNGKRLEPNWASVKKDL 76    |
| 12 of 105 | 17     | 65 LEPNWASVKKDLISYGG 81    |
| 13 of 105 | 17     | 71 SVKKDLISYGGGWRLSA 87    |
| 14 of 105 | 17     | 77 ISYGGGWRLSAQWQKGE 93    |
| 15 of 105 | 17     | 83 WRLSAQWQKGEEVQVIA 99    |
| 16 of 105 | 17     | 89 WQKGEEVQVIAVEPGKN 105   |
| 17 of 105 | 17     | 95 VQVIAVEPGKNPKNFQT 111   |
| 18 of 105 | 17     | 100 VEPGKNPKNFQTMPGIF 116  |
| 19 of 105 | 17     | 106 PKNFQTMPGIFQTTTGE 122  |
| 20 of 105 | 17     | 112 MPGIFQTTTGEIGAIAL 128  |
| 21 of 105 | 17     | 118 TTTGEIGAIALDFKPGT 134  |
| 22 of 105 | 17     | 124 GAIALDFKPGTSGSPII 140  |
| 23 of 105 | 17     | 130 FKPGTSGSPIINREGKV 146  |
| 24 of 105 | 17     | 136 GSPIINREGKVVGGLYN 152  |
| 25 of 105 | 17     | 142 REGKVVGGLYNGVVTKN 158  |
| 26 of 105 | 17     | 148 GLYNGVVTKNGGYVSG 164   |
| 27 of 105 | 17     | 154 VVTKNGGYVSGIAQTNA 170  |
| 28 of 105 | 17     | 160 GYVSGIAQTNAEPDGPT 176  |
| 29 of 105 | 17     | 166 AQTNAEPDGPTPELEEE 182  |
| 30 of 105 | 17     | 172 PDGPTPELEEEEMFKKRN 188 |

| Table 1   |        |                           |
|-----------|--------|---------------------------|
| Peptide   | Length | Sequence                  |
| 31 of 105 | 17     | 177 PELEEEMFKKRNLTIMD 193 |
| 32 of 105 | 17     | 183 MFKKRNLTIMDLHPGSG 199 |
| 33 of 105 | 17     | 189 LTIMDLHPGSGKTRKYL 205 |
| 34 of 105 | 17     | 195 HPGSGKTRKYLPAIVRE 211 |
| 35 of 105 | 17     | 201 TRKYLPAIVREAIKRR 217  |
| 36 of 105 | 17     | 207 AIVREAIKRRRLTLILA 223 |
| 37 of 105 | 17     | 213 IKRRRLTLILAPTRVVA 229 |
| 38 of 105 | 17     | 219 TLILAPTRVVAEMEEA 235  |
| 39 of 105 | 17     | 225 TRVVAAEMEEAMKGLPI 241 |
| 40 of 105 | 17     | 230 AEMEEAMKGLPIRYQTT 246 |
| 41 of 105 | 17     | 236 MKGLPIRYQTTATKSEH 252 |
| 42 of 105 | 17     | 242 RYQTTATKSEHTGREIV 258 |
| 43 of 105 | 17     | 248 TKSEHTGREIVDLMCHA 264 |
| 44 of 105 | 17     | 254 GREIVDLMCHATFTMRL 270 |
| 45 of 105 | 17     | 260 LMCHATFTMRLLSPVRV 276 |
| 46 of 105 | 17     | 266 FTMRLSPVRVPNYNLI 282  |
| 47 of 105 | 17     | 272 SPVRVPNYNLIIMDEAH 288 |
| 48 of 105 | 16     | 278 NYNLIIMDEAHFTDPA 293  |
| 49 of 105 | 17     | 283 IMDEAHFTDPASIAARG 299 |
| 50 of 105 | 17     | 289 FTDPASIAARGYISTRV 305 |
| 51 of 105 | 17     | 295 IAARGYISTRVGMGEAA 311 |
| 52 of 105 | 17     | 301 ISTRVGMGEAAAFMTA 317  |
| 53 of 105 | 17     | 307 MGEAAAFMTATPPGTA 323  |
| 54 of 105 | 16     | 313 IFMTATPPGTADAFPQ 328  |
| 55 of 105 | 17     | 318 TPPGTADAFPQSNAPIQ 334 |
| 56 of 105 | 17     | 324 DAFPQSNAPIQDEERDI 340 |
| 57 of 105 | 17     | 330 NAPIQDEERDIPERSWN 346 |
| 58 of 105 | 17     | 335 DEERDIPERSWNSGNEW 351 |
| 59 of 105 | 17     | 341 PERSWNSGNEWITDFVG 357 |
| 60 of 105 | 17     | 347 SGNEWITDFVGKTWVFW 363 |
| 61 of 105 | 17     | 353 TDFVGKTWVFWPSIKAG 369 |
| 62 of 105 | 16     | 359 TVWFWPSIKAGNVIAN 374  |
| 63 of 105 | 17     | 364 PSIKAGNVIANCLRKNG 380 |
| 64 of 105 | 17     | 370 NVIANCLRKNGKKVIQL 386 |
| 65 of 105 | 17     | 376 LRKNGKKVIQLSRKTFD 392 |
| 66 of 105 | 17     | 382 KVIQLSRKTFDTEYQKT 398 |
| 67 of 105 | 17     | 388 RKTFDTEYQKTCLNDWD 404 |
| 68 of 105 | 17     | 393 TEYQKTCLNDWDFVVT 409  |
| 69 of 105 | 17     | 399 KLNDWDFVVTDISSEM 415  |
| 70 of 105 | 17     | 405 FVVTDISSEMANGFIAD 421 |
| 71 of 105 | 17     | 411 ISEMANGFIADRVIDPR 427 |
| 72 of 105 | 17     | 417 NFIADRVIDPRRCLKPV 433 |
| 73 of 105 | 16     | 423 VIDPRRCLKPVILTDG 438  |
| 74 of 105 | 17     | 428 RCLKPVILTDGPERVIL 444 |

| Table 1    |        |                           |
|------------|--------|---------------------------|
| Peptide    | Length | Sequence                  |
| 75 of 105  | 17     | 434 ILTDGPERVILAGPMPV 450 |
| 76 of 105  | 17     | 439 PERVILAGPMPVTVASA 455 |
| 77 of 105  | 17     | 445 AGPMPVTVASAAQRRGR 461 |
| 78 of 105  | 17     | 451 TVASAAQRRGRVGRNPQ 467 |
| 79 of 105  | 17     | 456 AQRRGRVGRNPQKENDQ 472 |
| 80 of 105  | 17     | 462 VGRNPQKENDQYIFMGQ 478 |
| 81 of 105  | 17     | 468 KENDQYIFMGQPLNKDE 484 |
| 82 of 105  | 17     | 474 IFMGQPLNKDEDAHWT 490  |
| 83 of 105  | 17     | 480 LNKDEDAHWTAKMLL 496   |
| 84 of 105  | 16     | 486 HAHWTEAKMLLDNINT 501  |
| 85 of 105  | 17     | 490 TEAKMLLDNINTPEGII 506 |
| 86 of 105  | 16     | 496 LDNINTPEGIIPALFE 511  |
| 87 of 105  | 16     | 501 TPEGIIPALFEPEREK 516  |
| 88 of 105  | 17     | 506 IPALFEPEREKSAIDG 522  |
| 89 of 105  | 17     | 512 PEREKSAIDGEYRLKG 528  |
| 90 of 105  | 17     | 518 AIDGEYRLKGESRKT 534   |
| 91 of 105  | 17     | 524 YRLKGESRKTVELMRR 540  |
| 92 of 105  | 17     | 530 SRKTVELMRRGDLPVW 546  |
| 93 of 105  | 17     | 535 VELMRRGDLPVWLAHKV 551 |
| 94 of 105  | 17     | 541 GDLPVWLAHKVASEGIK 557 |
| 95 of 105  | 17     | 547 LAHKVASEGIKYTDRKW 563 |
| 96 of 105  | 17     | 553 SEGIKYTDRKWCFDGER 569 |
| 97 of 105  | 17     | 559 TDRKWCFDGERNNQILE 575 |
| 98 of 105  | 17     | 565 FDGERNNQILEENMDVE 581 |
| 99 of 105  | 17     | 571 NQILEENMDVEIWTKEG 587 |
| 100 of 105 | 17     | 577 NMDVEIWTKEGKKKLR 593  |
| 101 of 105 | 17     | 583 WTKEGKKKLRPRWLDA 599  |
| 102 of 105 | 16     | 589 KKKLRPRWLDARTYSD 604  |
| 103 of 105 | 17     | 594 PRWLDARTYSDPLALKE 610 |
| 104 of 105 | 17     | 600 RTYSDPLALKEFKDFAA 616 |
| 105 of 105 | 14     | 606 LALKEFKDFAAGRK 619    |

| Table 2  |            |                          |
|----------|------------|--------------------------|
| Peptide  | Solubility | Solvent                  |
| 1 of 105 | 1 mg/mL    | Water                    |
| 2 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 3 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 4 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 5 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 6 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 7 of 105 | 1 mg/mL    | Water                    |
| 8 of 105 | 1 mg/mL    | Water                    |

| Table 2   |            |                          |
|-----------|------------|--------------------------|
| Peptide   | Solubility | Solvent                  |
| 9 of 105  | 1 mg/mL    | Water                    |
| 10 of 105 | 1 mg/mL    | Water                    |
| 11 of 105 | 1 mg/mL    | Water                    |
| 12 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 13 of 105 | 1 mg/mL    | Water                    |
| 14 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 15 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 16 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 17 of 105 | 1 mg/mL    | Water                    |
| 18 of 105 | 1 mg/mL    | Water                    |
| 19 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 20 of 105 | 1 mg/mL    | 30% formic acid in water |
| 21 of 105 | 1 mg/mL    | Water                    |
| 22 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 23 of 105 | 1 mg/mL    | Water                    |
| 24 of 105 | 1 mg/mL    | Water                    |
| 25 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 26 of 105 | 1 mg/mL    | Water                    |
| 27 of 105 | 1 mg/mL    | Water                    |
| 28 of 105 | 1 mg/mL    | Water                    |
| 29 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 30 of 105 | 1 mg/mL    | Water                    |
| 31 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 32 of 105 | 1 mg/mL    | Water                    |
| 33 of 105 | 1 mg/mL    | Water                    |
| 34 of 105 | 1 mg/mL    | Water                    |
| 35 of 105 | 1 mg/mL    | Water                    |
| 36 of 105 | 1 mg/mL    | Water                    |
| 37 of 105 | 1 mg/mL    | Water                    |
| 38 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 39 of 105 | 1 mg/mL    | Water                    |
| 40 of 105 | 1 mg/mL    | Water                    |
| 41 of 105 | 1 mg/mL    | Water                    |
| 42 of 105 | 1 mg/mL    | Water                    |
| 43 of 105 | 1 mg/mL    | Water                    |
| 44 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 45 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 46 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 47 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 48 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 49 of 105 | 1 mg/mL    | 50% acetic acid in water |
| 50 of 105 | 1 mg/mL    | 50% acetic acid in water |

| Table 2   |            |                           |
|-----------|------------|---------------------------|
| Peptide   | Solubility | Solvent                   |
| 51 of 105 | 1 mg/mL    | 100% DMSO                 |
| 52 of 105 | 1 mg/mL    | 100% DMSO                 |
| 53 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 54 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 55 of 105 | 1 mg/mL    | Water                     |
| 56 of 105 | 1 mg/mL    | Water                     |
| 57 of 105 | 1 mg/mL    | Water                     |
| 58 of 105 | 1 mg/mL    | Water                     |
| 59 of 105 | 1 mg/mL    | 100% DMSO                 |
| 60 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 61 of 105 | 1 mg/mL    | Water                     |
| 62 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 63 of 105 | 1 mg/mL    | Water                     |
| 64 of 105 | 1 mg/mL    | Water                     |
| 65 of 105 | 1 mg/mL    | Water                     |
| 66 of 105 | 1 mg/mL    | Water                     |
| 67 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 68 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 69 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 70 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 71 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 72 of 105 | 1 mg/mL    | Water                     |
| 73 of 105 | 1 mg/mL    | Water                     |
| 74 of 105 | 1 mg/mL    | Water                     |
| 75 of 105 | 1 mg/mL    | Water                     |
| 76 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 77 of 105 | 1 mg/mL    | Water                     |
| 78 of 105 | 1 mg/mL    | Water                     |
| 79 of 105 | 1 mg/mL    | Water                     |
| 80 of 105 | 1 mg/mL    | Water                     |
| 81 of 105 | 1 mg/mL    | Water                     |
| 82 of 105 | 1 mg/mL    | Water                     |
| 83 of 105 | 1 mg/mL    | Water                     |
| 84 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 85 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 86 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 87 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 88 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 89 of 105 | 1 mg/mL    | Water                     |
| 90 of 105 | 1 mg/mL    | Water                     |
| 91 of 105 | 1 mg/mL    | 70% acetonitrile in water |
| 92 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 93 of 105 | 1 mg/mL    | Water                     |
| 94 of 105 | 1 mg/mL    | Water                     |

| Table 2    |            |                           |
|------------|------------|---------------------------|
| Peptide    | Solubility | Solvent                   |
| 95 of 105  | 1 mg/mL    | 50% acetic acid in water  |
| 96 of 105  | 1 mg/mL    | Water                     |
| 97 of 105  | 1 mg/mL    | Water                     |
| 98 of 105  | 1 mg/mL    | 50% acetic acid in water  |
| 99 of 105  | 1 mg/mL    | 70% acetonitrile in water |
| 100 of 105 | 1 mg/mL    | Water                     |
| 101 of 105 | 1 mg/mL    | Water                     |
| 102 of 105 | 1 mg/mL    | Water                     |
| 103 of 105 | 1 mg/mL    | 50% acetic acid in water  |
| 104 of 105 | 1 mg/mL    | Water                     |
| 105 of 105 | 1 mg/mL    | Water                     |