Product Information Sheet for NR-2867

Peptide Array, *Yersinia pestis* V Antigen

Catalog No. NR-2867

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Contributor:

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

Product Description:

The 53-peptide array spans the V antigen of the gram-negative bacterium *Yersinia pestis* (GenPept: CAB54908).[1] Peptides are 15- 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 -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 the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Peptide Array, *Yersinia pestis* V antigen, NR-2867."

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. 4th ed. Washington, DC: U.S. Government Printing Office, 1999. HHS Publication No. (CDC) 93-8395. This text is available online at www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm.

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References:

1. Parkhill, J., et al. "Genome Sequence of *Yersinia pestis*, the Causative Agent of Plague." Nature 413 (2001): 523–527. PubMed: 11586360. GenPept: CAB54908.

Table 1

Peptide	Length	Sequence
1 of 53	17	1 MIRAYEQNPQHFIEDLE 17
2 of 53	17	6 EQNPQHFIEDLEKVRVE 22
3 of 53	17	12 FIEDLEKVRVEQLTGHG 28
4 of 53	17	18 KVRVEQLTGHGSSVLEE 34
5 of 53	17	24 LTGHGSSVLEELVQLVK 40
6 of 53	17	30 SVLEELVQLVKDKNIDI 46
7 of 53	17	36 VQLVKDKNIDISIKYDP 52
8 of 53	17	42 KNIDISIKYDPRKDSEV 58
9 of 53	17	48 IKYDPRKDSEVFANRVI 64
10 of 53	17	54 KDSEVFANRVITDDIEL 70
11 of 53	17	60 ANRVITDDIELLKKILA 76
12 of 53	17	66 DDIELLKKILAYFLPED 82
13 of 53	17	72 KKILAYFLPEDAILKGG 88
14 of 53	17	78 FLPEDAILKGGHYDNQL 94
15 of 53	17	84 ILKGGHYDNQLQNGIKR 100
16 of 53	17	90 YDNQLQNGIKRVKEFLE 106
17 of 53	17	96 NGIKRVKEFLESSPNTQ 112
18 of 53	17	102 KEFLESSPNTQWELRAF 118
19 of 53	17	108 SPNTQWELRAFMAVMHF 124
20 of 53	17	114 ELRAFMAVMHFSLTADR 130
21 of 53	17	120 AVMHFSLTADRIDDDIL 136
22 of 53	17	126 LTADRIDDDILKVIVDS 142
23 of 53	17	132 DDDILKVIVDSMNHHGD 148
24 of 53	17	138 VIVDSMNHHGDARSKLR 154
25 of 53	17	144 NHHGDARSKLREELAEL 160
26 of 53	17	150 RSKLREELAELTAELKI 166
27 of 53	17	156 ELAELTAELKIYSVIQA 172
28 of 53	17	162 AELKIYSVIQAEINKHL 178
29 of 53	17	168 SVIQAEINKHLSSSGTI 184
30 of 53	17	174 INKHLSSSGTINIHDKS 190
31 of 53	17	180 SSGTINIHDKSINLMDK 196
32 of 53	17	186 IHDKSINLMDKNLYGYT 202
33 of 53	17	192 NLMDKNLYGYTDEEIFK 208
34 of 53	17	198 LYGYTDEEIFKASAEYK 214
35 of 53	17	204 EEIFKASAEYKILEKMP 220

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Table 1		
Peptide	**Length**	**Sequence**
36 of 53	17	210 SAEYKILEKMPQTTIQV 226
37 of 53	17	216 LEKMPQTTIQVDGSEKK 232
38 of 53	17	222 TTIQVDGSEKKIVSIKD 238
39 of 53	17	228 GSEKKIVSIKDFLGSEN 244
40 of 53	17	234 VSIKDFLGSENKRTGAL 250
41 of 53	17	240 LGSENKRTGALGNLKNS 256
42 of 53	17	246 RTGALGNLKNSYSYNKD 262
43 of 53	17	252 NLKNSYSYNKDNNELSH 268
44 of 53	17	258 SYNKDNNELSHFATTCS 274
45 of 53	17	264 NELSHFATTCSDKSRPL 280
46 of 53	17	270 ATTCSDKSRPLNDLVSQ 286
47 of 53	17	276 KSRPLNDLVSQKTTQLS 292
48 of 53	17	282 DLVSQKTTQLSDITSRF 298
49 of 53	17	288 TTQLSDITSRFNSAIEA 304
50 of 53	17	294 ITSRFNSAIEALNRFIQ 310
51 of 53	17	300 SAIEALNRFIQKYDSVM 316
52 of 53	17	306 NRFIQKYDSVMQRLLDD 322
53 of 53	15	312 YDSVMQRLLDDTSGK 326

Table 2		
Peptide	**Solubility**	**Solvent**
1 of 53	1 mg/mL	6 M guanidine-HCl
2 of 53	1 mg/mL	100% DMSO
3 of 53	1 mg/mL	100% DMSO
4 of 53	1 mg/mL	100% DMSO
5 of 53	1 mg/mL	100% DMSO
6 of 53	1 mg/mL	100% DMSO
7 of 53	1 mg/mL	6 M guanidine-HCl
8 of 53	1 mg/mL	100% DMSO
9 of 53	1 mg/mL	6 M guanidine-HCl
10 of 53	1 mg/mL	100% DMSO
11 of 53	1 mg/mL	6 M guanidine-HCl
12 of 53	1 mg/mL	6 M guanidine-HCl
13 of 53	1 mg/mL	6 M guanidine-HCl
14 of 53	1 mg/mL	6 M guanidine-HCl
15 of 53	1 mg/mL	6 M guanidine-HCl
16 of 53	1 mg/mL	6 M guanidine-HCl
17 of 53	1 mg/mL	6 M guanidine-HCl
18 of 53	1 mg/mL	6 M guanidine-HCl
19 of 53	1 mg/mL	100% DMSO
20 of 53	1 mg/mL	100% DMSO

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Table 2		
Peptide	**Solubility**	**Solvent**
21 of 53	1 mg/mL	100% DMSO
22 of 53	1 mg/mL	100% DMSO
23 of 53	1 mg/mL	100% DMSO
24 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
25 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
26 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
27 of 53	1 mg/mL	70% acetonitrile in water
28 of 53	1 mg/mL	100% DMSO
29 of 53	1 mg/mL	100% DMSO
30 of 53	1 mg/mL	100% DMSO
31 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
32 of 53	1 mg/mL	100% DMSO
33 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
34 of 53	1 mg/mL	100% DMSO
35 of 53	1 mg/mL	100% DMSO
36 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
37 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
38 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
39 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
40 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
41 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
42 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
43 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
44 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
45 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
46 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
47 of 53	1 mg/mL	0.05% trifluoroacetic acid in water
48 of 53	1 mg/mL	70% acetonitrile in water
49 of 53	1 mg/mL	70% acetonitrile in water
50 of 53	1 mg/mL	100% DMSO
51 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
52 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water
53 of 53	1 mg/mL	70% acetonitrile and 0.05% trifluroacetic acid in water

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