

Peptide Array, *Bacillus anthracis*, Strain Sterne, PA Protein

Catalog No. NR-527

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Contributor:

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Product Description:

The 102-peptide array spans the PA protein of the Sterne strain of *Bacillus anthracis* (GenPept: AAA22637).¹ Peptides are 13- to 20-mers, with 10 or 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:

Peptides are provided lyophilized at 1 mg per vial. 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 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, *Bacillus anthracis*, Strain Sterne, PA Protein, NR-527.”

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.

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References:

1. Welkos, S. L., et al. "Sequence and Analysis of the DNA Encoding Protective Antigen of *Bacillus anthracis*." *Gene* 69 (1988): 287–300. PubMed: 3148491. GenPept: AAA22637.

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Table 1		
Peptide	Length	Sequence
1	18	MKKRKVLIPLMALSTILV
2	18	PLMALSTILVSSTGNLEV
3	16	LVSSTGNLEVIQAEVK
4	16	NLEVIQAEVKQENRLL
5	20	AEVKQENRLLNESESSSQGL
6	18	NESESSSQGLGYFSDL
7	18	GLLGYFSDLNFQAPMVV
8	18	DLNFQAPMVVTSSTTGDL
9	17	VVTSSTTGDLSPSSEL
10	19	GDLSIPSELENIPSENQY
11	16	LENIPSENQYFQSAIW
12	18	ENQYFQSAIWSGFIKVKK
13	17	IWSGFIKVKKSDEYTFA
14	17	VKKSDEYTFATSADNHV
15	19	TFATSADNHVTMWVDDQEV
16	19	VTMWVDDQEVINKASNSNK
17	18	VINKASNSNKIRLEKGRL
18	17	NKIRLEKGRLYQIKIQY
19	18	GRLYQIKIQYQRENPTK
20	18	IQYQRENPTKGLDFKLY
21	18	TEKGLDFKLYWTD SQNKK
22	18	LYWTD SQNKKKEVISSDNL
23	18	KKEVISSDNLQLPELKQK
24	18	NLQLPELKQKSSNSRKKR
25	15	KQKSSNSRKKRSTSA
26	17	NSRKKRSTSAGPTVPDR
27	15	TSAGPTVPDRDNDGI
28	16	TVPDRDNDGIPDSLEV
29	18	NDGIPDSLEVEGYTVDVK
30	16	EVEGYTVDVKNKRTFL
31	18	VDVKNKRTFLSPWISNIH
32	18	FLSPWISNIHEKKGLTKY
33	17	IHEKKGLTKYKSSPEKW
34	17	TKYKSSPEKWSTASDPY
35	16	EKWSTASDPYSDFEKV
36	18	SDPYSDFEKVTRGRIDKNV
37	18	KVTRGRIDKNVSPEARHPL
38	18	NVSPEARHPLVAAYPIVH
39	18	PLVAAYPIVHVDMENIIL
40	18	VHVDMENIILSKNEDQST
41	18	ILSKNEDQSTQNTDSETR
42	20	STQNTDSETRTISKNTSTSR
43	17	TISKNTSTSRHTSEVH
44	17	TSRHTSEVHGNAEVHA
45	15	EVHGNAEVHASFFDI

Table 1 (continued)		
Peptide	Length	Sequence
46	18	AEVHASFFDIGGSVSAGF
47	18	DIGGSVSAGFSNSNSSTV
48	18	GFSNSNSSTVAIDHLSLSL
49	17	TVAIDHLSLSLAGERTWA
50	18	LSLAGERTWAETMGLNTA
51	17	WAETMGLNTADTARLNA
52	15	NTADTARLNANIRYV
53	18	ARLNANIRYVNTGTAPIY
54	18	YVNTGTAPIYVNLPTTSL
55	18	IYVNLPTTSLVLGKNQTL
56	16	SLVLGKNQTLATIKAK
57	18	NQTLATIKAKENQLSQIL
58	16	AKENQLSQILAPNNYY
59	18	SQLAPNNYYPSKNLAPI
60	18	YYP SKNLAPIALNAQDDF
61	17	PIALNAQDDFSSTPITM
62	18	DDFSSTPITMNYNQFLEL
63	18	TMNYNQFLELEKTKQLRL
64	16	ELEKTKQLRLDTDQVY
65	17	KQLRLDTDQVYGNATY
66	18	DQVYGNATYNFENGRVR
67	17	TYNFENGRVRVDTGSNW
68	17	RVRVDTGSNWSEVLPQI
69	18	SNWSEVLPQIQETTARI
70	17	PQIQETTARIIFNGKDL
71	18	ARIIFNGKDLNLVERRIA
72	18	DLNLVERRIAAVNPSDPL
73	17	IAAVNPSDPLETTKPD
74	18	DPLETTKPDMTLKEALKI
75	18	DMTLKEALKIAFGFNEPN
76	18	KIAFGFNEPNGNLQYQGK
77	17	PNGNLQYQGKDITEFDF
78	18	YQGKDITEFDFNFQQTS
79	18	DFNFQQTSQNIKNQLA
80	18	TSQNIKNQLAELNATNIY
81	18	LAELNATNIYTVLDKIKL
82	18	IYTVLDKIKLNAKMNI
83	17	ILNKMNIIRDKRFHY
84	17	ILIRDKRFHYDRNNIAV
85	18	FHYDRNNIAVGADES
86	17	VVGADES
87	18	VVGADES
88	18	VVGADES
89	18	VVGADES
90	18	IRKILSGYIVEIEDTEGL

Table 1 (continued)

Peptide	Length	Sequence
91	18	IVEIEDTEGLKEVINDRY
92	18	GLKEVINDRYDMLNISSL
93	18	RYDMLNISSLRQDGKTFI
94	18	SLRQDGKTFIDFKKYNDK
95	15	FIDFKKYNDKILPLYI
96	17	KYNDKILPLYISNPYKV
97	17	LYISNPYKVNYYAVTK
98	15	YKVNYYAVTKENTII
99	18	YAVTKENTIIINPSENGDT
100	18	IINPSENGDTSTNGIKKI
101	18	DTSTNGIKKILIFSCKGY
102	13	KILIFSCKGYEIG

Table 2

Peptide	Solubility	Solvent
1	1 mg/mL	Water
2	1 mg/mL	5% ammonium hydroxide in water
3	1 mg/mL	Water
4	1 mg/mL	Water
5	1 mg/mL	Water
6	1 mg/mL	Water
7	1 mg/mL	Water
8	1 mg/mL	5% ammonium hydroxide in water
9	1 mg/mL	Water
10	1 mg/mL	Water
11	1 mg/mL	Water
12	1 mg/mL	Water
13	1 mg/mL	Water
14	1 mg/mL	Water
15	1 mg/mL	Water
16	1 mg/mL	Water
17	1 mg/mL	Water
18	1 mg/mL	Water
19	1 mg/mL	Water
20	1 mg/mL	Water
21	1 mg/mL	Water
22	1 mg/mL	Water
23	1 mg/mL	Water
24	1 mg/mL	Water
25	1 mg/mL	Water

Table 2 (continued)		
Peptide	Solubility	Solvent
26	1 mg/mL	Water
27	1 mg/mL	Water
28	1 mg/mL	Water
29	1 mg/mL	Water
30	1 mg/mL	Water
32	1 mg/mL	Water
33	1 mg/mL	Water
34	1 mg/mL	Water
35	1 mg/mL	Water
36	1 mg/mL	Water
37	1 mg/mL	Water
38	1 mg/mL	Water
39	1 mg/mL	Water
40	1 mg/mL	Water
41	1 mg/mL	Water
42	1 mg/mL	Water
43	1 mg/mL	Water
44	1 mg/mL	Water
45	1 mg/mL	Water
46	1 mg/mL	5% ammonium hydroxide in water
47	1 mg/mL	Water
48	1 mg/mL	5% ammonium hydroxide in water
49	1 mg/mL	Water
50	1 mg/mL	Water
51	1 mg/mL	Water
52	1 mg/mL	Water
53	1 mg/mL	Water
54	1 mg/mL	Water
55	1 mg/mL	Water
56	1 mg/mL	Water
57	1 mg/mL	Water
58	1 mg/mL	Water
59	1 mg/mL	Water
60	1 mg/mL	Water
61	1 mg/mL	5% ammonium hydroxide in water
62	1 mg/mL	5% ammonium hydroxide in water
63	1 mg/mL	Water
64	1 mg/mL	Water
65	1 mg/mL	Water
66	1 mg/mL	Water
67	1 mg/mL	Water
68	1 mg/mL	Water
69	1 mg/mL	Water
70	1 mg/mL	Water

Table 2 (continued)		
Peptide	Solubility	Solvent
71	1 mg/mL	Water
72	1 mg/mL	Water
73	1 mg/mL	Water
74	1 mg/mL	Water
75	1 mg/mL	Water
76	1 mg/mL	Water
77	1 mg/mL	5% ammonium hydroxide in water
78	1 mg/mL	Water
79	1 mg/mL	5% ammonium hydroxide in water
80	1 mg/mL	5% ammonium hydroxide in water
81	1 mg/mL	Water
82	1 mg/mL	Water
83	1 mg/mL	Water
84	1 mg/mL	Water
85	1 mg/mL	Water
86	1 mg/mL	Water
87	1 mg/mL	Water
88	1 mg/mL	Water
89	1 mg/mL	Water
90	1 mg/mL	5% ammonium hydroxide in water
91	1 mg/mL	5% ammonium hydroxide in water
92	1 mg/mL	Water
93	1 mg/mL	Water
94	1 mg/mL	Water
95	1 mg/mL	Water
96	1 mg/mL	Water
97	1 mg/mL	Water
98	1 mg/mL	Water
99	1 mg/mL	Water
100	1 mg/mL	Water
101	1 mg/mL	Water
102	1 mg/mL	Water