

**Peptide Array, SARS-Related Coronavirus 2 Membrane (M) Protein**

**Catalog No. NR-52403**

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**Product Description:**

The 31-peptide array spans the membrane (M) glycoprotein of the USA-WA1/2020 strain of severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2; GenPept: [QHO60597](#)). Peptides are 17- or 12-mers, with 10 amino acid overlaps.

**Lot: A4076-1 to A4076-31**

**Manufacturing Date: 31MAR2020**

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The following information applies to all peptides:

- Appearance White lyophilized powder
- Mass spectral analysis Correct MW by MALDI
- Counter Ion Trifluoroacetate

Peptide-specific information is shown in the tables and figures below.

**Table 1: Peptide Analysis**

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC <sup>1</sup>	Peptide Content <sup>2</sup>
1 of 31	17	1-MADSNGTITVEELKLL-17	1862.18	41.2	82.4%	82.6%
2 of 31	17	8-ITVEELKKLLEQWNLVI-24	2068.50	52.9	95.4%	84.0%
3 of 31	17	15-KLLEQWNLVIGFLFTW-31	2120.58	64.7	90.7%	89.0%
4 of 31	17	22-LVIGFLFTWICLLQFA-38	1997.53	82.4	83.3%	93.8%
5 of 31	17	29-LTWICLLQFAYANRNR-45	2129.52	64.7	83.4%	84.4%
6 of 31	17	36-QFAYANRNRFLYIIKLI-52	2143.56	64.7	88.3%	80.4%
7 of 31	17	43-NRFLYIIKLIFLWLLWP-59	2248.83	76.5	94.0%	85.1%
8 of 31	17	50-KLIFLWLLWPVTLACFV-66	2062.65	82.4	83.9%	88.7%
9 of 31	17	57-LWPVTLACFVLAAYRI-73	1935.41	82.4	91.0%	88.1%
10 of 31	17	64-CFVLAAYRINWITGGI-80	1896.29	70.6	86.1%	87.9%
11 of 31	17	71-YRINWITGGIAIACL-87	1866.28	70.6	91.3%	87.7%
12 of 31	17	78-GGIAIACLVGLMWLS-94	1706.18	76.5	88.6%	92.9%
13 of 31	17	85-ACLVGLMWLSYFIASFR-101	1977.43	76.5	92.4%	88.3%
14 of 31	17	92-WLSYFIASFRLFARTR-108	2121.48	58.8	80.0%	80.2%
15 of 31	17	99-SFRLFARTRSMWSFNPE-115	2132.44	41.2	93.9%	80.3%
16 of 31	17	106-TRSMWSFNPETNILLNV-122	2022.32	41.2	93.9%	88.5%
17 of 31	17	113-NPETNILLNVPLHGTIL-129	1858.18	41.2	83.5%	87.6%
18 of 31	17	120-LNVPLHGTILRPLLES-136	1873.24	41.2	94.3%	82.6%
19 of 31	17	127-TILTRPLLESELVIGAV-143	1824.20	52.9	92.0%	87.4%
20 of 31	17	134-LESELVIGAVILRGHLR-150	1875.26	52.9	83.4%	78.2%
21 of 31	17	141-GAVILRGHLRIAGHHLG-157	1777.12	47.1	82.0%	69.3%
22 of 31	17	148-HLRIAGHHLGRCDIKDL-164	1954.30	41.2	86.7%	68.1%
23 of 31	17	155-HLGRCDIKDLPKEITVA-171	1908.26	41.2	80.1%	74.5%
24 of 31	17	162-KDLPKEITVATSRTLSY-178	1922.21	35.3	89.3%	78.6%

Table 1: Peptide Analysis (continued)

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC <sup>1</sup>	Peptide Content <sup>2</sup>
25 of 31	17	169-TVATSRTLSTYYKLGASQ-185	1846.07	41.2	82.9%	82.4%
26 of 31	17	176-LSYYKLGASQRVAGDSG-192	1771.94	41.2	96.1%	81.8%
27 of 31	17	183-ASQRVAGDSGFAAYSRY-199	1805.92	47.1	81.8%	82.1%
28 of 31	17	190-DSGFAAYSRYRIGNYKL-206	1981.19	47.1	87.2%	79.1%
29 of 31	17	197-SRYRIGNYKLNTDHSSS-213	1998.14	23.5	92.7%	75.3%
30 of 31	17	204-YKLNTDHSSSDNIALL-220	1878.03	35.3	83.3%	82.7%
31 of 31	12	211-SSSDNIALLVQ-222	1233.35	41.7	91.1%	90.4%

<sup>1</sup>Percent full length

<sup>2</sup>Remainder is salt and water

Figure 1: Amino Acid Analysis<sup>3,4</sup>

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
1 of 31	Expected	1.0		2.0		2.0	1.0		1.0	3.0	2.0	1.0			1.0	2.0			1.0
	Actual	1.0		1.8		1.9	1.1		1.0	3.2	2.2	0.9			0.9	1.8			1.2
2 of 31	Expected			1.0		4.0			2.0	4.0	2.0					1.0	1.0		2.0
	Actual			1.0		3.8			1.8	4.2	2.0					1.0	0.0		2.0
3 of 31	Expected			1.0		2.0	1.0		1.0	5.0	1.0		2.0			1.0	2.0		1.0
	Actual			1.0		1.8	1.1		0.8	5.1	0.9		2.1			1.1	0.0		1.0
4 of 31	Expected	1.0			1.0	1.0	1.0		2.0	5.0			3.0			1.0	1.0		1.0
	Actual	1.2			0.0	0.9	1.0		1.0	4.9			2.9			0.9	0.0		0.5
5 of 31	Expected	2.0	2.0	2.0	1.0	1.0			1.0	3.0			2.0			1.0	1.0	1.0	
	Actual	1.9	2.2	2.1	0.0	0.9			1.0	2.9			2.1			0.9	0.0	1.1	
6 of 31	Expected	2.0	2.0	2.0		1.0			3.0	2.0	1.0		2.0						2.0
	Actual	1.9	2.1	1.9		0.9			2.2	2.2	1.1		2.0						2.0
7 of 31	Expected		1.0	1.0					3.0	5.0	1.0		2.0	1.0				2.0	1.0
	Actual		1.1	0.9					1.9	5.1	1.0		2.1	1.1				0.0	1.0
8 of 31	Expected	1.0			1.0				1.0	5.0	1.0		2.0	1.0		1.0	2.0		2.0
	Actual	1.1			0.0				0.9	5.0	0.9		2.0	1.0		1.0	0.0		2.2
9 of 31	Expected	3.0	1.0		1.0				1.0	3.0			1.0	1.0		1.0	1.0	1.0	3.0
	Actual	2.8	1.1		0.0				1.1	3.2			1.1	0.9		0.8	0.0	1.1	2.9
10 of 31	Expected	2.0	1.0	1.0	1.0		2.0		3.0	1.0			1.0			1.0	1.0	1.0	2.0
	Actual	1.9	1.1	1.0	0.0		2.2		3.1	1.0			0.9			1.0	0.0	1.0	2.0
11 of 31	Expected	3.0	1.0	1.0	1.0		2.0		4.0	1.0		1.0				1.0	1.0	1.0	
	Actual	3.1	0.9	0.9	0.0		2.1		3.8	1.1		1.1				1.0	0.0	0.9	
12 of 31	Expected	3.0			1.0		3.0		2.0	3.0		2.0			1.0		1.0		1.0
	Actual	2.8			0.0		3.1		1.8	3.0		2.0			0.9		0.0		1.2
13 of 31	Expected	2.0	1.0		1.0		1.0		1.0	3.0		1.0	2.0		2.0		1.0	1.0	1.0
	Actual	1.8	1.1		0.0		1.0		0.9	3.0		1.0	2.1		1.9		0.0	1.1	1.0
14 of 31	Expected	2.0	3.0						1.0	2.0			3.0		3.0	1.0	1.0	1.0	
	Actual	2.0	3.0						0.9	2.0			3.2		2.9	1.1	0.0	1.0	
15 of 31	Expected	1.0	3.0	1.0		1.0				1.0		1.0	3.0	1.0	3.0	1.0	1.0		
	Actual	1.0	3.2	0.9		0.9				1.0		1.1	3.2	1.1	2.8	1.0	0.0		
16 of 31	Expected		1.0	3.0		1.0			1.0	2.0		1.0	1.0	1.0	2.0	2.0	1.0		1.0
	Actual		1.0	2.8		0.9			1.0	2.0		1.0	1.1	1.0	1.9	1.9	0.0		1.2
17 of 31	Expected			3.0		1.0	1.0	1.0	2.0	4.0				2.0		2.0			1.0
	Actual			2.8		0.9	1.1	1.1	2.0	4.0				2.0		1.9			1.1
18 of 31	Expected		1.0	1.0		1.0	1.0	1.0	1.0	5.0				2.0	1.0	2.0			1.0
	Actual		1.1	0.9		1.0	1.0	1.1	1.0	4.9				2.0	1.0	2.0			1.0

Figure 1: Amino Acid Analysis (continued)<sup>3,4</sup>

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
19 of 31	Expected	1.0	1.0			2.0	1.0		2.0	4.0				1.0	1.0	2.0			2.0
	Actual	1.0	0.9			1.8	1.2		1.6	4.0				1.0	1.0	1.8			2.0
20 of 31	Expected	1.0	2.0			2.0	2.0	1.0	2.0	4.0					1.0				2.0
	Actual	0.9	2.1			2.1	2.1	1.0	1.2	3.8					0.9				1.2
21 of 31	Expected	2.0	2.0				4.0	3.0	2.0	3.0									1.0
	Actual	1.8	2.1				4.1	3.2	1.6	2.9									0.7
22 of 31	Expected	1.0	2.0	2.0	1.0		2.0	3.0	2.0	3.0	1.0								
	Actual	0.9	2.1	1.9	0.0		2.2	3.1	2.0	3.1	0.9								
23 of 31	Expected	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0			1.0		1.0			1.0
	Actual	1.0	1.1	2.0	0.0	1.0	1.1	1.1	1.9	2.0	1.8			1.0		0.9			1.0
24 of 31	Expected	1.0	1.0	1.0		1.0			1.0	2.0	2.0			1.0	2.0	3.0		1.0	1.0
	Actual	1.0	1.2	0.8		0.9			1.0	2.0	1.8			1.0	1.9	3.1		1.2	1.1
25 of 31	Expected	2.0	1.0			1.0	1.0			2.0	1.0				3.0	3.0		2.0	1.0
	Actual	1.9	1.0			1.0	1.1			2.2	1.0				2.8	2.8		2.2	1.0
26 of 31	Expected	2.0	1.0	1.0		1.0	3.0			2.0	1.0				3.0			2.0	1.0
	Actual	2.2	1.1	1.0		1.0	3.2			1.8	0.9				2.8			1.9	1.1
27 of 31	Expected	4.0	2.0	1.0		1.0	2.0						1.0		3.0			2.0	1.0
	Actual	3.8	2.0	1.0		1.0	2.0						1.1		2.8			2.2	1.0
28 of 31	Expected	2.0	2.0	2.0			2.0		1.0	1.0	1.0		1.0		2.0			3.0	
	Actual	2.0	2.1	1.9			2.1		1.0	1.1	0.9		1.1		1.8			3.1	
29 of 31	Expected		2.0	3.0			1.0	1.0	1.0	1.0	1.0				4.0	1.0		2.0	
	Actual		1.8	3.0			1.0	1.0	1.0	1.0	1.0				4.0	1.0		2.1	
30 of 31	Expected	1.0		4.0				1.0	1.0	3.0	1.0				4.0	1.0		1.0	
	Actual	1.0		4.0				1.0	1.1	3.1	1.0				3.7	1.0		1.0	
31 of 31	Expected	1.0		2.0		1.0			1.0	2.0					4.0				1.0
	Actual	1.0		1.9		1.0			1.0	2.0					3.7				1.2

<sup>3</sup>Cysteine (C) and tryptophan (W) were completely destroyed during hydrolysis.

<sup>4</sup>Val-Ile, Val-Val, Ile-Ile and/or Ile-Val bonds were only partially destroyed during hydrolysis.

Table 2: Peptide Solubility

Peptide	Sequence	Solubility	Solvent
1 of 31	1-MADSNGTITVEELKLL-17	1 mg/mL	70% acetonitrile in water
2 of 31	8-ITVEELKKLLEQWNLVI-24	1 mg/mL	70% acetonitrile in water
3 of 31	15-KLLEQWNLVIGFLFTW-31	1 mg/mL	70% acetonitrile in water
4 of 31	22-LVIGFLFTWICLLQFA-38	1 mg/mL	70% acetonitrile in water
5 of 31	29-LTWICLLQFAYANRNR-45	1 mg/mL	70% acetonitrile in water
6 of 31	36-QFAYANRNRFLYIIKLI-52	1 mg/mL	70% acetonitrile in water
7 of 31	43-NRFLYIIKLIFLWLLWP-59	1 mg/mL	70% acetonitrile in water
8 of 31	50-KLIFLWLLWPVTLACFV-66	1 mg/mL	70% acetonitrile in water
9 of 31	57-LWPVTLACFVLAAYRI-73	1 mg/mL	70% acetonitrile in water
10 of 31	64-CFVLAAYRINWITGGI-80	1 mg/mL	70% acetonitrile in water
11 of 31	71-YRINWITGGIAIAMA-87	1 mg/mL	70% acetonitrile in water
12 of 31	78-GGIAIAMAQLVGLMWLS-94	1 mg/mL	70% acetonitrile in water

**Table 2: Peptide Solubility (continued)**

Peptide	Sequence	Solubility	Solvent
13 of 31	85-ACLVGLMWLSYFIASFR-101	1 mg/mL	70% acetonitrile in water
14 of 31	92-WLSYFIASFRLFARTRS-108	1 mg/mL	70% acetonitrile in water
15 of 31	99-SFRLFARTRSMWSFNPE-115	1 mg/mL	70% acetonitrile in water
16 of 31	106-TRSMWSFNPETNILLNV-122	1 mg/mL	70% acetonitrile in water
17 of 31	113-NPETNILLNVPLHGTIL-129	1 mg/mL	70% acetonitrile in water
18 of 31	120-LNVPLHGTILRPLLES-136	1 mg/mL	70% acetonitrile in water
19 of 31	127-TILTRPLLESELVIGAV-143	1 mg/mL	70% acetonitrile in water
20 of 31	134-LESELVIGAVILRGHLR-150	1 mg/mL	70% acetonitrile in water
21 of 31	141-GAVILRGHLRIAGHHLG-157	1 mg/mL	70% acetonitrile in water
22 of 31	148-HLRIAGHHLGRCDIKDL-164	1 mg/mL	70% acetonitrile in water
23 of 31	155-HLGRCDIKDLPKEITVA-171	1 mg/mL	70% acetonitrile in water
24 of 31	162-KDLPKEITVATSRTLSY-178	1 mg/mL	70% acetonitrile in water
25 of 31	169-TVATSRTLSYYKLGASQ-185	1 mg/mL	70% acetonitrile in water
26 of 31	176-LSYYKLGASQRVAGDSG-192	1 mg/mL	70% acetonitrile in water
27 of 31	183-ASQRVAGDSGFAAYSRY-199	1 mg/mL	70% acetonitrile in water
28 of 31	190-DSGFAAYSRYRIGNYKL-206	1 mg/mL	70% acetonitrile in water
29 of 31	197-SRYRIGNYKLNTDHSSS-213	1 mg/mL	70% acetonitrile in water
30 of 31	204-YKLNTDHSSSDNIALL-220	1 mg/mL	70% acetonitrile in water
31 of 31	211-SSSDNIALLVQ-222	1 mg/mL	70% acetonitrile in water

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