Peptide Array, Hepatitis C Virus, H77, Alternative Reading Frame Protein (ARFP)

Catalog No. NR-4201

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

Manufacturer:
Bio-Synthesis, Inc.

Product Description:
The 25-peptide array spans the ARFP of hepatitis C virus, H77 (genotype 1a; GenBank: AF011751).[1] Peptides are 11- to 18-mers, with 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:
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, Hepatitis C Virus, H77, Alternative Reading Frame Protein (ARFP), NR-4201."

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/bmbl5/bmbl5toc.htm.

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References:

1. Yanagi, M., et al. "Transcripts from a Single Full-length cDNA Clone of Hepatitis C Virus Are Infectious When Directly Transfected into the Liver of a Chimpanzee." Proc. Natl. Acad. Sci. U. S. A. 94 (1997): 8738-8743. PubMed: 9238047. GenBank: AF011751.

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Table 1

Peptide	Length	Sequence
1 of 25	18	1 ARILNLKEKPNVTPTVAH 18
2 of 25	18	8 EKPNVTPTVAHRTSSSRV 25
3 of 25	17	15 TVAHRTSSSRVAVRSLV 31
4 of 25	18	21 SSSRVAVRSLVEFTCCRA 38
5 of 25	17	28 RSLVEFTCCRAGALDWV 44
6 of 25	18	34 TCCRAGALDWVCARRGRL 51
7 of 25	17	41 LDWVCARRGRLPSGRNL 57
8 of 25	17	47 RRGRLPSGRNLEVDVSL 63
9 of 25	16	53 SGRNLEVDVSLSPRHV 68
10 of 25	15	58 EVDVSLSPRHVGPRA 72
11 of 25	15	62 SLSPRHVGPRAGPGL 76
12 of 25	16	66 RHVGPRAGPGLSPGTL 81
13 of 25	18	71 RAGPGLSPGTLGPSMAMR 88
14 of 25	16	78 PGTLGPSMAMRVAGGR 93
15 of 25	18	83 PSMAMRVAGGRDGSCLPV 100
16 of 25	18	90 AGGRDGSCLPVALGLAGA 107
17 of 25	17	97 CLPVALGLAGAPQTPGV 113
18 of 25	18	103 GLAGAPQTPGVGRAIWVR 120
19 of 25	18	110 TPGVGRAIWVRSSIPLRA 127
20 of 25	17	117 IWVRSSIPLRAASPTSW 133
21 of 25	18	123 IPLRAASPTSWGTYRSSA 140
22 of 25	17	130 PTSWGTYRSSAPLLEAL 146
23 of 25	18	136 YRSSAPLLEALPGPWRMA 153
24 of 25	18	143 LEALPGPWRMASGFWKTA 160
25 of 25	11	150 WRMASGFWKTA 160

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Table 2		
Peptide	**Solubility**	**Solvent**
1 of 25	1 mg/mL	70% acetonitrile in water
2 of 25	1 mg/mL	70% acetonitrile in water
3 of 25	1 mg/mL	70% acetonitrile in water
4 of 25	1 mg/mL	100% DMSO
5 of 25	1 mg/mL	70% acetonitrile and 30% formic acid in water
6 of 25	1 mg/mL	70% acetonitrile in water
7 of 25	1 mg/mL	70% acetonitrile in water
8 of 25	1 mg/mL	70% acetonitrile and 30% formic acid in water
9 of 25	1 mg/mL	70% acetonitrile in water
10 of 25	1 mg/mL	70% acetonitrile in water
11 of 25	1 mg/mL	70% acetonitrile in water
12 of 25	1 mg/mL	70% acetonitrile in water
13 of 25	1 mg/mL	70% acetonitrile in water
14 of 25	1 mg/mL	70% acetonitrile in water
15 of 25	1 mg/mL	70% acetonitrile in water
16 of 25	1 mg/mL	70% acetonitrile in water
17 of 25	1 mg/mL	70% acetonitrile in water
18 of 25	1 mg/mL	70% acetonitrile in water
19 of 25	1 mg/mL	70% acetonitrile in water
20 of 25	1 mg/mL	70% acetonitrile in water
21 of 25	1 mg/mL	70% acetonitrile in water
22 of 25	1 mg/mL	70% acetonitrile in water
23 of 25	1 mg/mL	70% acetonitrile in water
24 of 25	1 mg/mL	70% acetonitrile in water
25 of 25	1 mg/mL	70% acetonitrile in water

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