Product Information Sheet for NR-9310

Peptide Ligand, *Bacillus anthracis* Spore Binding

Catalog No. NR-9310

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Contributor:

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Product Description:

NR-9310 is a peptide ligand that binds specifically to spores of *Bacillus anthracis*. The peptide ligand sequence[1] has been modified at the carboxy terminus to allow it to be used in proximity ligation assays.[2]

Length	Sequence
12	ATYPLPIRGGGC

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. The solubility of NR-9310 is shown below:

Solubility	Solvent
1 mg/mL	50% acetonitrile in water

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. 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 Ligand, *Bacillus anthracis* Spore Binding, NR-9310."

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. Williams, D. D., O. Benedek., and C. L. Turnbough Jr. "Species-Specific Peptide Ligands for the Detection of *Bacillus anthracis* Spores." Appl. Environ. Microbiol. 69 (2003): 6288–6293. PubMed: 14532093.
2. Pai, S., A. D. Ellington, and M. Levy. "Proximity Ligation Assays with Peptide Conjugate 'Burrs' for the Sensitive Detection of Spores." Nucleic Acids Res. 33 (2005): e162. PubMed: 16237122.
3. Turnbough, C. L. Jr. "Discovery of Phage Display Peptide Ligands for Species–specific Detection of *Bacillus* Spores." J. Microbiol. Methods 53 (2003): 263–271. PubMed: 12654497.

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