Yersinia pseudotuberculosis, Strain YPIII (p-)

Catalog No. NR-4376

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Contributor:

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Product Description:

Bacteria Classification: *Enterobacteriaceae, Yersinia*
Species: *Yersinia pseudotuberculosis*
Serogroup: III
Strain: YPIII (p-)
Source: YPIII (p-) is a derivative of strain YPIII (p+) that lacks the pIB1/pYV virulence plasmid[1]
Comments: The absence of the virulence plasmid pIB1/pYV in this strain was confirmed by low Ca^{2+} response prior to deposition. This strain is known to be naturally resistant to Irgasan. The complete genome of *Yersinia pseudotuberculosis*, strain YPIII has been sequenced (GenBank: CP000950).

The *Yersinia* genus consists of eleven species, and of these, three are known to be human pathogens: *Y. pestis*, *Y. pseudotuberculosis*, and *Y. enterocolitica*. *Y. pseudotuberculosis* and *Y. enterocolitica* share a high degree of similarity with *Y. pestis* at the genomic level, but cause self-limiting, food-borne, enteric diseases that rarely lead to death. The key virulence factors in *Yersinia* are carried on a plasmid referred to as pCD1 (also known as pIB1 or pYV) which encodes a type III secretion system and the associated effector proteins, known as Yops (*Yersinia* outer proteins). The pCD1 plasmid is present in all three pathogenic species of *Yersinia* and is absolutely necessary for virulence.[2]

Y. pseudotuberculosis is a small rod-shaped, Gram-negative bacterium. It is termed pseudotuberculosis since it causes lesions in the lung that are similar to those observed during tuberculosis infection. *Y. pseudotuberculosis* infections are not frequent, but a mesenteric adenitis that mimics an acute appendicular syndrome is the most common clinical presentation.

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Tryptic Soy Broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-4376 was packaged aseptically, in screw-capped plastic cryovials. The product is provided frozen and should be stored at -80°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:
Luria Broth or equivalent
Luria Agar or equivalent
Incubation:
Temperature: 28°C to 37°C
Atmosphere: Aerobic
Propagation:

1. Keep vial frozen until ready for use; thaw slowly.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tubes and plate at 28 to 37°C for 24 hours.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Yersinia pseudotuberculosis*, Strain YPIII (p-), NR-4376."

Biosafety Level: 2

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. Bölin, I., L. Norlander, and H. Wolf-Watz. "Temperature-Inducible Outer Membrane Protein of *Yersinia pseudotuberculosis* and *Yersinia enterocolitica* Is Associated with the Virulence Plasmid." Infect. Immun. 37 (1982): 506-512. PubMed: 6749681.
2. Huang, X.-Z., M. P. Nikolich, and L. E. Lindler. "Current Trends in Plague Research: From Genomics to Virulence." Clin. Med. Res. 4 (2006): 189-199. PubMed: 16988099.
3. Gemski, P., et al. "Presence of a Virulence-Associated Plasmid in *Yersinia pseudotuberculosis*." Infect. Immun. 28 (1980): 1044-1047. PubMed: 6249747.

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