

***Yersinia pseudotuberculosis*,  
Strain IP2777****Catalog No. NR-4373**

This reagent is the property of the U.S. Government.

**For research use only. Not for human use.****Contributor:**

James B. Bliska, Associate Professor, Department of Molecular Genetics and Microbiology, Center for Infectious Diseases, State University of New York at Stony Brook, Stony Brook, New York

**Product Description:**

**Bacteria Classification:** *Enterobacteriaceae*, *Yersinia*

**Species:** *Yersinia pseudotuberculosis*

**Serogroup:** I

**Strain:** IP2777

**Original Source:** Obtained from a clinical isolate in France<sup>1</sup>

**Comments:** The presence of the virulence plasmid pIB1/pYV in this strain was confirmed by low Ca<sup>2+</sup> response prior to deposition. This strain is known to be naturally resistant to Irgasan.

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.<sup>2</sup>

*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 colony-purify prior to initiating work.

**Packaging/Storage:**

NR-4373 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:**

Tryptic Soy Broth

Tryptic Soy Agar

**Incubation:**

Temperature: 28°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°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 IP2777, NR-4373."

**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](http://www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm).

**Disclaimers:**

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at [www.beiresources.org](http://www.beiresources.org).

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government make any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this

product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

### Use Restrictions:

**This material is distributed for internal research, non-commercial purposes only.** This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

### References:

1. Simonet, M. and S. Falkow. "Invasin Expression in *Yersinia pseudotuberculosis*." Infect. Immun. 60 (1992): 4414–4417. PubMed: 1398952.
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. Prehna, G., M. I. Ivanov, J. B. Bliska, and C. E. Stebbins. "*Yersinia* Virulence Depends on Mimicry of Host Rho-Family Nucleotide Dissociation Inhibitors." Cell 126 (2006): 869–880. PubMed: 16959567.
4. Viboud, G. I., E. Mejía, and J. B. Bliska. "Comparison of YopE and YopT Activities in Counteracting Host Signalling Responses to *Yersinia pseudotuberculosis* Infection." Cell. Microbiol. 8 (2006): 1504–1515. PubMed: 16922868.
5. Falgarone, G., et al. "Cytotoxic T-Cell-Mediated Response against *Yersinia pseudotuberculosis* in HLA-B27 Transgenic Rat." Infect. Immun. 67 (1999): 3773–3779. PubMed: 10417137.

ATCC® is a trademark of the American Type Culture Collection.

