

***Streptococcus pneumoniae*, Strain OREP3**

Catalog No. NR-13389

For research use only. Not for human use.

Contributor:

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Manufacturer:

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Product Description:

Bacteria Classification: *Streptococcaceae*, *Streptococcus*

Species: *Streptococcus pneumoniae*

Strain: OREP3

Original Source: The antibiotic-resistant variant *Streptococcus pneumoniae* (*S. pneumoniae*), strain OREP3 was derived from human wild-type *S. pneumoniae*, strain Wu2 by natural selection using increasing concentrations of optochin.

Comments: *S. pneumoniae*, strain OREP3 is reported to be resistant to optochin at a concentration of 2 µg per mL.¹

S. pneumoniae is a Gram-positive, α-hemolytic diplococcal aerotolerant anaerobe that is a major cause of pneumonia, bacterial meningitis and otitis media. *S. pneumoniae* has a polysaccharide capsule that acts as a virulence factor for the organism. There are over ninety different capsular types of *S. pneumoniae* which differ in virulence, prevalence, and extent of drug resistance.^{2,3}

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Todd-Hewitt broth containing 0.5% (w/v) yeast extract supplemented with 15% glycerol.

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

Packaging/Storage:

NR-13389 was packaged aseptically in 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 or Todd-Hewitt containing 0.5% (w/v) yeast extract broth or equivalent

Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or Todd-Hewitt agar or equivalent

Incubation:

Temperature: 37°C

Atmosphere: Aerobic with 5% CO₂

Propagation:

1. Keep vial frozen until ready for use, then thaw.
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 tube, slant and/or plate at 37°C for 1 day.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: *Streptococcus pneumoniae*, Strain OREP3, NR-13389.”

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, 2009; see www.cdc.gov/biosafety/publications/bmb15/index.htm.

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References:

1. Burton, R. L. and M. H. Nahm. "Development and Validation of a Fourfold Multiplexed Opsonization Assay (MOPA4) for Pneumococcal Antibodies." Clin. Vaccine Immunol. 13 (2006): 1004-1009. PubMed: 16960111.
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3. Habib, M., B. D. Porter and C. Satzke. "Capsular Serotyping of *Streptococcus pneumoniae* Using the Quellung Reaction." J. Vis. Exp. 24 (2014): e51208. PubMed: 24637727.
4. Cywes-Bentley, C., et al. "Antibody to a Conserved Antigenic Target is Protective Against Diverse Prokaryotic and Eukaryotic Pathogens." Proc. Natl. Acad. Sci. USA 110 (2013): E2209-E2218. PubMed: 23716675.
5. Balloch, A., et al. "Interlaboratory Comparison of the Pneumococcal Multiplex Opsonophagocytic Assays and their Level of Agreement for Determination of Antibody Function in Pediatric Sera." mSphere 3 (2018): e00070-18. PubMed: 29695620.
6. Yu, J., et al. "Pneumococcal Serotypes Causing Pneumonia with Pleural Effusion in Pediatric Patients." J. Clin. Microbiol. 49 (2011): 534-538. PubMed: 21123535.
7. Burton, R. L. and M. H. Nahm. "Development of a Fourfold Multiplexed Opsonophagocytosis Assay for Pneumococcal Antibodies Against Additional Serotypes and Discovery of Serological Subtypes in *Streptococcus pneumoniae* Serotype 20." Clin. Vaccine Immunol. 19 (2012): 835-841. PubMed: 22518015.
8. Daniels, C. C., et al. "Modified Opsonization, Phagocytosis, and Killing Assays to Measure Potentially Protective Antibodies Against Pneumococcal Surface Protein A." Clin. Vaccine Immunol. 20 (2013): 1549-1558. PubMed: 23925886.

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