

***Vibrio cholerae*, Strain 395**

Catalog No. NR-9906

(Derived from ATCC® 39541™)

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Contributor:

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Product Description:

Bacteria Classification: *Vibrionaceae*, *Vibrio*

Species: *Vibrio cholerae*

Strain: 395 (Ogawa 395; O395)

Serogroup: O:1

Serotype: Ogawa

Biotype: Classical

Original Source: *Vibrio cholerae* (*V. cholerae*), strain 395 was isolated in the spring of 1964 from a patient with clinical cholera in Calcutta, India.^{1,2}

Comments: *V. cholerae*, strain 395 was deposited to the ATCC® in 1983 by Dr. James B. Kaper, Professor of Medicine, Center for Vaccine Development, University of Maryland School of Medicine, Baltimore, Maryland. The complete genome of *V. cholerae*, O395 has been sequenced.^{3,4} This strain has been used extensively for molecular analysis of virulence factors.

V. cholerae is a natural inhabitant of warm aquatic environments and the causative agent of the diarrheal disease cholera. More than 200 O-antigen serogroups have been identified but only O1 and more recently O139 are known to cause epidemic and pandemic cholera.⁵ Occasionally, there are cholera outbreaks that result from non-O1 and non-O139 serotypes. *V. cholerae* colonizes the mucosal surface of the small intestines of humans, the only known animal host.⁶ Cholera has a high lethality if left untreated, and millions have died in the seven pandemics that have occurred since 1817.

Cholera toxin, the toxin-coregulated pilus (TCP) and the central regulatory protein (ToxR) are recognized as significant factors in the pathogenicity of toxigenic strains of *V. cholerae* serogroups O1 and O139.⁷

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-9906 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be

stored at -60°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 equivalent

Tryptic Soy Agar or equivalent

Incubation:

Temperature: 37°C

Atmosphere: Aerobic

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 tubes and plate at 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: *Vibrio cholerae*, Strain 395, NR-9906."

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/bmb15/bmb15toc.htm.

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References:

1. Sack, R. B. and C. C. J. Carpenter. "Experimental Canine Cholera I. Development of the Model." J Infect. Dis. 119 (1968): 138-149. PubMed: 5776004.
2. Sack, R. B. and C. E. Miller. "Progressive Changes in Vibrio Serotypes in Germ-Free Mice Infected with *Vibrio cholerae*." J. Bacteriol. 99 (1969): 688-695. PubMed: 5370274.
3. Feng, L., et al. "A Recalibrated Molecular Clock and Independent Origins for the Cholera Pandemic Clones." PLoS One 3 (2008): e4053. PubMed: 19115014. GenBank: CP001235 and CP001236.
4. Heidelberg, J. Direct submission (16 Mar 2007). GenBank: CP000626 and CP000627.
5. Pang, B., et al. "Genetic Diversity of Toxigenic and Nontoxigenic *Vibrio cholerae* Serogroups O1 and O139 Revealed by Array-Based Comparative Genomic Hybridization." J. Bacteriol. 189 (2007): 4837-4849. PubMed: 17468246.
6. O'Shea, Y. A., et al. "Evolutionary Genetic Analysis of the Emergence of Epidemic *Vibrio cholerae* Isolates on the Basis of Comparative Nucleotide Sequence Analysis and Multilocus Virulence Gene Profiles." J. Clin. Microbiol. 42 (2004): 4657-4671. PubMed: 15472325.
7. Singh, D. V., et al. "Molecular Analysis of *Vibrio cholerae* O1, O139, non-O1, and non-O139 Strains: Clonal Relationships between Clinical and Environmental Isolates." Appl. Environ. Microbiol. 67 (2001): 910-921. PubMed: 11157262.

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