

***Vibrio cholerae*, Strain MO45**

Catalog No. NR-144

(Derived from ATCC® 51394™)

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Contributor:

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Product Description:

Bacteria Classification: *Vibrionaceae*, *Vibrio*

Species: *Vibrio cholerae*

Strain: MO45

Serogroup: O:139 (Bengal)

Original Source:^{1,2} Cholera patient in Madras, India, 1992

Comment: This strain is the O139 reference strain.¹ This strain is resistant to ampicillin, co-trimoxazole, furazolidone and streptomycin.³

Vibrio cholerae (*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.⁴ 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.⁵ 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 O139.⁶

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-144 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 MO45, NR-144."

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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4. Pang, B., et al. "Genetic Diversity of Toxigenic and Non-Toxigenic *Vibrio cholerae* Serogroups O1 and O139 Revealed by Array-Based Comparative Genomic Hybridization." J. Bacteriol. 189 (2007): 4837-4849. PubMed: 17468246.
5. 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.
6. Singh, D. V., et al. "Molecular Analysis of *Vibrio cholerae* O1, O139, non-O1, and non-O139 Strains: Clonal Relationship between Clinical and Environmental Isolates." Appl. Environ. Microbiol. 67 (2001): 910-921. PubMed: 11157262.
7. Faruque, S. M., M. J. Albert, and J. J. Mekalanos. "Epidemiology, Genetics, and Ecology of Toxigenic *Vibrio cholerae*." Microbiol. Mol. Biol. Rev. 62 (1998): 1301-1314. PubMed: 9841673.

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