

***Clostridium difficile*, Strain NAP08 (CDC#2007019)**

Catalog No. HM-89

For research use only. Not for human use.

Contributor:

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Product Description:

Bacteria Classification: *Clostridiaceae*, *Clostridium*

Species: *Clostridium difficile*

Strain: NAP08 (CDC#2007019)

Original Source: *Clostridium difficile*, strain NAP08 (CDC#2007019) was isolated from human feces.

Comments: *Clostridium difficile*, strain NAP08 (CDC#2007019) is a reference genome for [The Human Microbiome Project](#) (HMP). HMP is an initiative to identify and characterize human microbial flora. The whole genome shotgun sequencing of *Clostridium difficile*, strain NAP08 (CDC#2007019) is available (GenBank: [ADNX00000000](#)).

C. difficile is a Gram-positive, spore-forming, obligate anaerobe that commonly inhabits the intestinal tract of various mammalian species, reptiles and birds, and may also be found in the environment. Pathogenic strains of *C. difficile* produce a potent cytotoxin (toxin B) and in most cases an enterotoxin (toxin A).¹ It is the production of these toxins in the gut which ultimately leads to the disease pseudomembranous colitis (PMC) and *C. difficile* associated diarrhea (CDAD), which often occur as a complication of antibiotic therapy in elderly hospitalized patients.²

Material Provided:

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

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

Packaging/Storage:

HM-89 was packaged aseptically in 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:

Reinforced Clostridial Broth ([ATCC medium 1053](#))

Tryptic Soy Agar (TSA) with 5% defibrinated sheep blood or CDC Anaerobe 5% Sheep Blood Agar

Incubation:

Temperature: 37°C

Atmosphere: Anaerobic gas mixture (80% N₂:10% CO₂:10% H₂)

Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into Reinforced Clostridial Broth under anaerobic atmosphere.
3. Inoculate additional broth tubes with 0.5 mL each from the suspension. Slants may be inoculated with 0.2 mL each. Streak several Reinforced Clostridial Agar or TSA plates containing 5% defibrinated sheep blood to check for colony morphology and purity.
4. Incubate cultures at 37°C under anaerobic atmosphere.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH as part of the Human Microbiome Project: *Clostridium difficile*, Strain NAP08 (CDC#2007019), HM-89."

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. Rupnik, M., M. H. Wilcox, and D. N. Gerding. "*Clostridium difficile* Infection: New Developments in Epidemiology and Pathogenesis." Nat. Rev. Microbiol. 7 (2009): 526-536. PubMed: 19528959.
2. Kelly, C. P. and J. T. LaMont. "*Clostridium difficile* - More Difficult than Ever." N. Engl. J. Med. 359 (2008): 1932-1940. PubMed: 18971494.

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