

***Peptoclostridium difficile*, Strain CD104**

**Catalog No. NR-43525**

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

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Bacteria Classification: *Peptostreptococcaceae*,  
*Peptoclostridium*

Species: *Peptoclostridium difficile* (also referred to as *Clostridium difficile*)<sup>1</sup>

Strain: CD104

Original Source: *Peptoclostridium difficile* (*P. difficile*), strain CD104 was isolated in February 2010 from the stool of a human patient diagnosed with an acute *Clostridium difficile* infection in Ann Arbor, Michigan, USA.<sup>2</sup>

Comments: *P. difficile*, strain CD104 was deposited as a toxigenic strain and is part of a genome sequencing project at the [Institute for Genome Sciences](#) at the University of Maryland.<sup>2,3</sup> PCR analysis has shown the presence of *P. difficile* toxins in strain CD104.<sup>2</sup> The complete genome of *P. difficile*, strain CD104 is available (GenBank: [AVHK00000000](#)).

*P. 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 *P. difficile* produce a potent cytotoxin (toxin B) and in most cases an enterotoxin (toxin A).<sup>4</sup> It is the production of these toxins in the gut which ultimately leads to pseudomembranous colitis (PMC) and *Clostridium difficile* associated diarrhea (CDAD), which often occur as a complication of antibiotic therapy in elderly hospitalized patients.<sup>5</sup>

**Material Provided:**

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

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

**Packaging/Storage:**

NR-43525 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:

Modified Reinforced Clostridial medium or equivalent  
Tryptic Soy agar with 5% defibrinated sheep blood or equivalent

Incubation:

Temperature: 37°C  
Atmosphere: Anaerobic

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 24 to 72 hours.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Peptoclostridium difficile*, Strain CD104, NR-43525."

**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](http://www.cdc.gov/biosafety/publications/bmb15/index.htm).

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**References:**

1. Yutin, N. and M. Y. Galperin. "A Genomic Update on Clostridial Phylogeny: Gram-Negative Spore-Formers and Other Misplaced Clostridia." *Environ. Microbiol.* 15 (2013): 2631-2641. PubMed: 23834245.
2. Aronoff, D. M., Personal Communication.
3. Walk, S. T., D. M. Aronoff and V. B. Young. "Comparative Phylogenomics of *Clostridium difficile*." [Institute for Genome Sciences](http://gscid.igs.umaryland.edu/doc/whitepapers/comparative_phylogenomics_of_clostridium_difficile.pdf) at the University of Maryland.  
<[http://gscid.igs.umaryland.edu/doc/whitepapers/comparative\\_phylogenomics\\_of\\_clostridium\\_difficile.pdf](http://gscid.igs.umaryland.edu/doc/whitepapers/comparative_phylogenomics_of_clostridium_difficile.pdf)>
4. 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.
5. Kelly, C. P. and J. T. LaMont. "*Clostridium difficile* - More Difficult than Ever." *N. Engl. J. Med.* 359 (2008): 1932-1940. PubMed: 18971494.
6. Marsh, J. W. "Counterpoint: Is *Clostridium difficile* a Food-borne Disease?" *Anaerobe* 21 (2013): 62-63. PubMed: 23528985.

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