

Product Information Sheet for NR-43544

Peptoclostridium difficile, Strain CD21

Catalog No. NR-43544

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*)¹

Strain: CD21

Original Source: *Peptoclostridium difficile* (*P. difficile*), strain CD21 was isolated in January 2010 from the stool of a human patient diagnosed with an acute *Clostridium difficile* infection in Ann Arbor, Michigan, USA.²

Comments: *P. difficile*, strain CD21 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.^{2,3} PCR analysis has shown the presence of *P. difficile* toxins in strain CD21.² The complete genome of *P. difficile*, strain CD21 is available (GenBank: [AVGO00000000](#)).

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).⁴ 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.⁵

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-43544 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 CD21, NR-43544."

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/bmbl5/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 at the University of Maryland.
<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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