Product Information Sheet for NR-41292

Cryptococcus neoformans, Isolate 2

Catalog No. NR-41292

For research use only. Not for use in humans.

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Manufacturer:
BEI Resources

Product Description:
Classification: *Filobasidiaceae, Cryptococcus*
Species: *Cryptococcus neoformans*
Strain/Isolate: 2
Original Source: *Cryptococcus neoformans (C. neoformans),* isolate 2 was isolated in February 2012 from human cerebrospinal fluid in China.[1]

C. neoformans and *C. gattii* are pathogenic basidiomycete yeasts characterized by a polysaccharide capsule, melanin formation and urease activity.[2] They are the etiologic agents of cryptococcosis, a potentially fatal fungal infection presenting as meningitis and pneumoniae. *C. neoformans* is considered an opportunistic pathogen predominantly affecting immunocompromised patients, particularly transplant recipients and those with HIV infection.[2,3] *C. gatti* occurs more commonly in healthy populations and is responsible for outbreaks in the United States and Canada.[3,4] *C. neoformans* and *C. gattii* are widely distributed in the environment and have been isolated from soil, decaying wood and avian excreta.[2,5]

The current taxonomy classifies *C. gattii* and *C. neoformans* as two species complexes with their own distinct genotypes, and four serotypes distinguished by the polysaccharide capsule.[3,5,6] The *C. neoformans* species complex consists of two main lineages, *C. neoformans*, containing molecular types VNI, VNII and VNB (serotype A) and *C. neoformans* (VNIV; serotype D), plus their genotype VNIII hybrids (serotype AD).[5] A unique genotype defines each of the five recognized species in the *C. gattii* species complex: *C. gattii* (VGI), *C. deuterogattii* (VGII), *C. bacillisporus* (VGIII), *C. tetragattii* (VGIV) and *C. decagattii* (VGVI).[6]

Material Provided:
Each vial contains approximately 0.5 mL of yeast culture in 10% glycerol. Each vial of lot 61680507 contains approximately 0.5 mL of yeast culture in 20% glycerol.

Packaging/Storage:
NR-41292 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:
Emmons Modified Sabouraud Dextrose broth or Yeast Mold broth or equivalent
Emmons Modified Sabouraud Dextrose agar or Yeast Mold agar or Malt Extract agar (Blakeslee's formula) or equivalent
Incubation:
Temperature: 25°C to 30°C
Atmosphere: Aerobic
Propagation:
1. Keep vial frozen until ready for use; thaw rapidly in a water bath at 25°C to 30°C. Typically, this takes less than 5 minutes.
2. Immediately after thawing, inoculate an agar plate with approximately 50 µL of thawed culture and/or transfer the entire thawed aliquot into a single tube of broth.
3. Incubate the plate and/or tube at 25°C to 30°C for 2 to 4 days.

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Cryptococcus neoformans*, Isolate 2, NR-41292."

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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

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References:

1. Zhang, Q. Q., Personal Communication.
2. Kwon-Chung, K. J., et al. "*Cryptococcus neoformans* and *Cryptococcus gattii*, the Etiologic Agents of Cryptococcosis." Cold Spring Harb. Perspect. Med. 4 (2014): a019760. PubMed: 24985132
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4. Yang, D.-H., et al. "Cryptococcus gattii Species Complex as an Opportunistic Pathogen: Underlying Medical Conditions Associated with the Infection." mBio 12 (2021): e0270821. PubMed: 34700378.
5. Hitchcock, M. and X. Jianping. "Analyses of the Global Multilocus Genotypes of the Human Pathogenic Yeast *Cryptococcus neoformans* Species Complex." Genes (Basel) 13 (2022): 2045. PubMed: 36360282.
6. Saidykhan, L., C. U. Onyishi and R. C. May. "The *Cryptococcus gattii* Species Complex: Unique Pathogenic Yeasts with Understudied Virulence Mechanisms." PLoS Negl. Trop. Dis. 16 (2022): e0010916. PubMed: 36520688.
7. Cogliati, M. "Global Molecular Epidemiology of *Cryptococcus neoformans* and *Cryptococcus gattii*: An Atlas of the Molecular Types." Scientifica (Cairo) 2013 (2013): 675213. PubMed: 24278784.
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9. Diaz, M. R. and J. W. Fell. "Use of a Suspension Array for Rapid Identification of the Varieties and Genotypes of *Cryptococcus neoformans* Species Complex." J. Clin. Microbiol. 43 (2005): 3662-3672. PubMed: 16081894.

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