

**Candida auris, Strain AKU-2019-111**

**Catalog No. NR-52715**

**For research use only. Not for use in humans.**

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Classification: Mitosporic *Saccharomycetales*; *Candida*

Species: *Candida auris*

Strain/Isolate: AKU-2019-111

Original Source: *Candida auris* (*C. auris*), strain AKU-2019-111 was isolated in 2019 from the bloodstream of a human with nosocomial fungemia in Karachi, Pakistan.<sup>1</sup>

Comment: Strain AKU-2019-111 was deposited as resistant to fluconazole and susceptible to amphotericin and anidulafungin.<sup>1</sup>

*C. auris* is an emerging multidrug-resistant pathogenic yeast, which causes invasive infections and outbreaks in nosocomial settings, resulting in high mortality. Since it was first described in 2009, *C. auris* has been isolated in over 30 countries on 6 continents, with the earliest known isolate from 1996 discovered during a retrospective review of unidentified yeasts.<sup>2</sup> *C. auris* is unique among disease-causing yeasts in that it behaves more like transmissible multidrug-resistant bacteria in healthcare settings, capable of transmission between patients through shedding and requiring specific control measures.<sup>2,3</sup> Infections primarily affect patients with underlying medical conditions or who have had recent surgery. *C. auris* is capable of colonizing patients in both sterile and non-sterile sites such as skin, and is known to colonize and persist in the environment, including on healthcare surfaces and equipment, such as catheters, attributed to biofilm formation.<sup>4,5</sup> Misidentification by commercial biochemical tests, often as closely related *C. haemulonii*, delays treatment and implementation of control measures.<sup>4,5</sup>

*C. auris* has a strong phylogeographic structure comprising four distinct clades, South Asia, East Asia, South Africa and South America, separated by tens of thousands of SNPs, with smaller clusters identified in some clades.<sup>3</sup> This high level of relatedness and low genetic diversity within clades suggests clades emerged independently and near-simultaneously in four distinct locations rather than a single spread.<sup>2,3,4</sup>

**Material Provided:**

Each vial contains approximately 0.5 mL of yeast culture in 20% glycerol.

**Packaging/Storage:**

NR-52715 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:

Sabouraud Dextrose broth or Yeast Mold broth or equivalent Sabouraud Dextrose agar or Yeast Mold agar or equivalent

Incubation:

Temperature: 25°C to 30°C

Atmosphere: Aerobic

Propagation:

1. Keep vial frozen until ready for use; thaw rapidly in a waterbath 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: *Candida auris*, Strain AKU-2019-111, NR-52715."

**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](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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**References:**

1. Farooqi, J., Personal Communication.
2. Forsberg, K., et al. "*Candida auris*: The Recent Emergence of a Multidrug-Resistant Fungal Pathogen." *Med. Mycol.* 57 (2019): 1-12. PubMed: 30085270.
3. Lockhart, S. R., et al. "Simultaneous Emergence of Multidrug-Resistant *Candida auris* on 3 Continents Confirmed by Whole-Genome Sequencing and Epidemiological Analyses." *Clin. Infect. Dis.* 64 (2017): 134-140. PubMed: 27988485.
4. Tsay, S., et al. "Approach to the Investigation and Management of Patients with *Candida auris*, an Emerging Multidrug-Resistant Yeast." *Clin. Infect. Dis.* 66 (2018): 306-311. PubMed: 29020224.
5. Spivak, E. S. and K. E. Hanson. "*Candida auris*: An Emerging Fungal Pathogen." *J. Clin. Microbiol.* 56 (2018): e01588-17. PubMed: 29167291.

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