

***Coccidioides posadasii*, Strain RMSCC 1038**

Catalog No. NR-55613

For research use only. Not for use in humans.

Contributor:

John Galgiani, M.D., Valley Fever Center for Excellence, University of Arizona, Tucson, Arizona, USA

Manufacturer:

BEI Resources

Product Description:

Classification: *Mitosporic Onygenales, Coccidioides*

Species: *Coccidioides posadasii*

Strain/Isolate: RMSCC 1038 (also referred to as Cp1038)

Original Source: *Coccidioides posadasii* (*C. posadasii*), strain RMSCC 1038 was isolated in 1984 from the lung tissue of a human with pulmonary cavity, cough and hemoptysis in Tucson, Arizona, USA.^{1,2}

Comments: *C. posadasii*, strain RMSCC 1038 is reported to be slower to infect C57BL/6 (B6) mice resulting in prolonged survival of the mice. Additionally, (B6D2)F1/J mice are reported to resist infection with RMSCC 1038, with fungal burdens becoming stable by four weeks. The slower progression in C57BL/6 (B6) mice and the acquired fungal burden stability in (B6D2)F1/J mice after infection with RMSCC 1038 greatly increases the range of possible immunological studies. This strain can be used to model human coccidioidal infections following immunological control.^{1,2,3} The complete genome sequence of *C. posadasii*, strain RMSCC 1038 is available (GenBank: [ABIT00000000.1](https://www.ncbi.nlm.nih.gov/nuccore/ABIT00000000.1)).

C. posadasii and *C. immitis* are dimorphic fungal pathogens and causative agents of coccidioidomycosis, also known as San Joaquin Valley fever, in both immunocompetent and immunocompromised humans, as well as in mammals, primarily in arid regions of North and South America.⁴ Transmission occurs through inhalation of the infectious airborne arthroconidia from soil, which undergo an asexual life cycle and enlarge to form parasitic spherules that eventually rupture to release endospores, leading to a potentially fatal, disseminated disease.^{4,5,6} While transmission between hosts has not been established, infection through transplanted tissues has occurred.⁷

The original classification as a single species with two distinct geographic populations, California and non-California *C. immitis*, has evolved, with the non-California isolates established as a new species, *C. posadasii*, in 2002.^{5,8,9} Genotypic analysis indicates multiple distinct subpopulations of each genus with limited gene flow: *C. immitis* is divided into two subpopulations, Central and Southern California, and *C. posadasii* into three subpopulations, Arizona, Mexico and Texas/South America.⁵ The current geographic distribution of

C. immitis isolates includes Central and Southern California, Arizona, Utah, Washington, Colombia and the Baja California region of Mexico, while *C. posadasii* has been isolated from Arizona, Texas, Utah, Mexico and Central and South America.^{4,5,7,10} Analysis of hybrid genotypes suggests the two species may co-exist in nature and undergo sexual reproduction, with predominant gene flow from *C. posadasii* to *C. immitis*.^{5,11}

Material Provided:

Each vial contains approximately 1 mL of yeast culture in 20% glycerol.

Packaging/Storage:

NR-55613 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: 37°C

Atmosphere: Aerobic

Propagation:

1. Keep vial frozen until ready for use; thaw rapidly in a waterbath at 37°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 37°C for 3 to 5 days.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Coccidioides posadasii*, Strain RMSCC 1038, NR-55613."

Biosafety Level: 3

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 \(BMBL\)](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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