

## ***Coccidioides immitis*, Strain 2006**

**Catalog No. NR-48934**

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### **Contributor:**

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### **Manufacturer:**

BEI Resources

### **Product Description:**

Classification: *Onygenales, Coccidioides*

Species: *Coccidioides immitis*

Strain/Isolate: 2006 (also referred to as RMSCC2006)<sup>1,2</sup>

Original Source: *Coccidioides immitis* (*C. immitis*), strain 2006 was isolated in the 1990s from a human with coccidioidomycosis in the San Joaquin Valley, California, USA.<sup>1,2</sup>

*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.<sup>3</sup> 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.<sup>3-5</sup> While transmission between hosts has not been established, infection through transplanted tissues has occurred.<sup>6</sup>

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.<sup>2,4,7</sup> 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.<sup>4</sup> 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.<sup>3,4,6,8</sup> 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*.<sup>4,9,10</sup>

### **Material Provided:**

Each vial of NR-48934 contains approximately 0.7 mL of fungal culture containing 20% glycerol.

### **Packaging/Storage:**

NR-48934 was packaged aseptically in cryovials and is provided frozen on dry ice. The product should be stored at -70°C or colder.

### **Growth Conditions:**

#### Media:

Emmons' Modified Sabouraud Dextrose broth or Yeast Mold (YM) broth or equivalent

Emmons' Modified Sabouraud Dextrose agar or equivalent

#### Incubation:

Temperature: 37°C

Atmosphere: Aerobic with 5% CO<sub>2</sub>

#### 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. Transfer the entire contents of the vial into Emmons' Modified Sabouraud Dextrose broth.
3. Incubate at 37°C for 6 to 12 days.

### **Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Coccidioides immitis*, Strain 2006, NR-48934."

### **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. 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:**

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6. Luna-Isaac, J. A., et al. "Genetic Analysis of the Endemic Fungal Pathogens *Coccidioides posadasii* and *Coccidioides immitis* in Mexico." Med. Mycol. 52 (2014): 156-166. PubMed: 24577001.
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