

***Mycobacterium tuberculosis*, Strain H37Rv, Purified Phthiocerol Dimycocerosate (PDIM)**

**Catalog No. NR-20328**

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**Contributor:**

BEI Resources or NIH - TB Vaccine Testing and Research Materials Contract

**Manufacturer:**

Karen Dobos, Ph.D., Colorado State University, Fort Collins, Colorado, USA and NIH - TB Vaccine Testing and Research Materials Contract

**Product Description:**

NR-20328 is a preparation of phthiocerol dimycocerosate (PDIM) derived from irradiated *Mycobacterium tuberculosis* (*M. tuberculosis*), strain H37Rv. PDIM, a wax-like virulence lipid produced by all members of the *M. tuberculosis* complex, is located in the outer layer of the cell envelope near the surface of the bacilli, where it plays a role in cell wall permeability and is directly involved in the initial step of macrophage infection.<sup>1,2</sup> In a mouse model, the presence of PDIM was necessary for full virulence.<sup>3</sup>

**Material Provided:**

Each vial contains approximately 500 µg of dried purified PDIM from *Mycobacterium tuberculosis*, strain H37Rv.

Note: PDIM is soluble in chloroform:methanol (2:1). DMSO can also be used depending on the downstream application.

**Packaging/Storage:**

NR-20328 was packaged aseptically in glass vials. The product is provided frozen on blue ice and should be stored at -80°C or colder immediately upon arrival. Freeze-thaw cycles should be avoided.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Mycobacterium tuberculosis*, Strain H37Rv, Purified Phthiocerol Dimycocerosate (PDIM), NR-20328."

**Biosafety Level: 1**

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. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see [www.cdc.gov/biosafety/publications/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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**References:**

1. Astarie-Dequeker, C., et al. "Phthiocerol Dimycocerosates of *M. tuberculosis* Participate in Macrophage Invasion by Inducing Changes in the Organization of Plasma Membrane Lipids." PLoS Pathog. 5 (2009): e1000289. PubMed: 19197369.
2. Camacho, L. R., et al. "Analysis of the Phthiocerol Dimycocerosate Locus of *Mycobacterium tuberculosis*. Evidence that this Lipid is Involved in the Cell Wall Permeability Barrier." J. Biol. Chem. 276 (2001): 19845-19854. PubMed: 11279114.
3. Domenech, P. and M. B. Reed. "Rapid and Spontaneous Loss of Phthiocerol Dimycocerosate (PDIM) from *Mycobacterium tuberculosis* Grown *in vitro*: Implications for Virulence Studies." Microbiology 155 (2009): 3532-3543. PubMed: 19661177.
4. Daffe, M. and P. Draper. "The Envelope Layers of Mycobacteria with Reference to their Pathogenicity." Adv. Microb. Physiol. 39 (1998): 131-203. PubMed: 9328647.

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