

***Mycobacterium tuberculosis*, Strain H37Rv**

**Catalog No. NR-123**

(Derived from ATCC® 25618™)

**For research use only. Not for human use.**

**Contributor:**

ATCC®

**Manufacturer:**

Biodefense and Emerging Infections Research Resources Repository

**Product Description:**

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium tuberculosis*

Type Strain: H37Rv

Original Source: The H37Rv strain was derived from the virulent parent strain H37. *Mycobacterium tuberculosis* (*M. tuberculosis*) subsp. *tuberculosis*, strain H37 was isolated in 1905 from the sputum of a patient with chronic pulmonary tuberculosis.<sup>1</sup>

Comment: *M. tuberculosis*, strain H37Rv was deposited at ATCC® by the Trudeau Mycobacterial Culture Collection, Trudeau Institute, Saranac Lake, New York. The complete genome of *M. tuberculosis*, strain H37Rv has been sequenced (GenBank: AL123456).<sup>2,3</sup>

*M. tuberculosis* subsp. *tuberculosis* is an acid-fast, Gram-positive, non-motile, rod-shaped aerobic bacterium. It is the causative agent of tuberculosis (TB) and is responsible for more morbidity in humans than any other bacterial disease. *M. tuberculosis* subsp. *tuberculosis* is a slow-growing pathogen with a thick, lipid-rich cell wall, lending bacilli the unusual propensity to shut down its metabolism in the face of adverse conditions and enter a latent phase in which it displays phenotypic resistance to antibiotic therapy. Therefore, persons infected with *M. tuberculosis* can develop active disease within months of infection or can remain latently infected and develop disease later in life. The primary focus of infection is the lungs, with TB being spread by infectious aerosols produced by coughing. The spread of multidrug-resistant and extensively drug-resistant TB is a major medical and public health concern for the world.<sup>4,9</sup>

**Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Middlebrook 7H9 Broth with Middlebrook ADC Enrichment supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

**Packaging/Storage:**

NR-123 was packaged aseptically in screw-capped plastic 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:

Middlebrook 7H9 Broth with Middlebrook ADC Enrichment

Middlebrook 7H10 Agar with Middlebrook OADC Enrichment

Incubation:

Temperature: 37°C

Atmosphere: Aerobic

Propagation:

1. Keep vial frozen until ready for use; then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tubes and plate at 37°C for 4 weeks.

**Citation:**

Acknowledgment for publications should read “The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Mycobacterium tuberculosis*, Strain H37Rv, NR-123.”

**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, 2007; see [www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

This publication recommends that practices with this agent include the use of respiratory protection and the implementation of specific procedures and use of specialized equipment to prevent and contain aerosols.

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#### References:

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2. Cole, S. T., et al. "Deciphering the Biology of *Mycobacterium tuberculosis* from the Complete Genome Sequence." Nature 393 (1998): 537-544. PubMed: 9634230.
3. Camus, J.-C., et al. "Re-annotation of the Genome Sequence of *Mycobacterium tuberculosis* H37Rv." Microbiology (Reading, Engl.) 148 (2002): 2967-2973. PubMed: 12368430.
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5. Chan, E. D. and M. D. Iseman. "Multidrug-resistant and Extensively Drug-resistant Tuberculosis: A Review." Curr. Opin. Infect. Dis. 21 (2008): 587-595. PubMed: 18978526.
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