

# Mycobacterium ulcerans, Strain S4018

Catalog No. NR-51701

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

## Contributor:

Estelle Marion, Researcher, ATOMyC team, Nantes-Angers Oncology and Immunology Research Center (CRCINA), National Institute of Health and Medical Research (INSERM), University of Angers, Angers, France

## Manufacturer:

BEI Resources

## Product Description:

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium ulcerans*

Strain: S4018

Original Source: *Mycobacterium ulcerans* (*M. ulcerans*), strain S4018 was isolated in December 2006 from the cutaneous lesion of an active Buruli ulcer on a male child in Benin.<sup>1,2,3</sup>

Comment: The complete genome of *M. ulcerans*, strain S4018 has been sequenced (GenBank: [MDUB000000000](#)).<sup>3</sup>

*M. ulcerans* is an acid-fast, slow-growing, rod-shaped, aerobic pathogenic bacterium.<sup>4</sup> It is the causative agent of Buruli ulcer, a neglected tropical disease that causes cutaneous lesions and osteomyelitis.<sup>5,6,7</sup> Buruli ulcer most commonly affect children in Africa, but has been identified in countries world-wide, typically in wetlands or areas with recent environmental change.<sup>6</sup> *M. ulcerans* is genetically similar to the fast-growing species *M. marinum*, but includes a virulence plasmid that codes for the production of a macrocyclic polyketide toxin mycolactone, which has cytotoxic and immunosuppressive activity.<sup>5</sup>

## Material Provided:

Each vial contains approximately 0.7 mL of bacterial culture in Middlebrook 7H9 broth with ADC enrichment with 10% glycerol.

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

## Packaging/Storage:

NR-51701 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 ADC enrichment or equivalent  
Middlebrook 7H10 agar with OADC enrichment or  
Lowenstein-Jensen agar or equivalent

## Incubation:

Temperature: 30°C

Atmosphere: Aerobic (with or without 5% CO<sub>2</sub>)

## 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 tube, slant and/or plate at 30°C for 2 to 6 weeks.

## Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Mycobacterium ulcerans*, Strain S4018, NR-51701."

## 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/bmbi5/index.htm](http://www.cdc.gov/biosafety/publications/bmbi5/index.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:**

1. Marion, E., Personal Communication.
2. <https://www.ncbi.nlm.nih.gov/biosample/SAMN04579668>
3. Kambarev, S., et. al. "Draft Genome Sequence of *Mycobacterium ulcerans* S4018 Isolated from a Patient with an Active Buruli Ulcer in Benin, Africa." *Genome Announc.* 5 (2017): e00248-17. PubMed: 28450515.
4. Lévy-Frébault, V. V., et. al. and F. Portaels. "Proposed Minimal Standards for the Genus *Mycobacterium* and for Description of New Slowly Growing *Mycobacterium* Species." *Int. J. Syst. Bacteriol.* 42 (1992): 315-323. PubMed: 1581193.
5. Röltgen, K., T. P. Stinear and G. Pluschke. "The Genome, Evolution and Diversity of *Mycobacterium ulcerans*." *Infect. Genet. Evol.* 12 (2012): 522-529. PubMed: 22306192.
6. Merritt, R. W., et. al. "Ecology and Transmission of Buruli Ulcer Disease: A Systematic Review." *PloS Negl. Trop. Dis.* 4 (2010): e911. PubMed: 21179505.
7. Pommelet, V., et. al. "Findings in Patients from Benin with Osteomyelitis and Polymerase Chain Reaction-Confirmed *Mycobacterium ulcerans* Infection." *Clin. Infect. Dis.* 59 (2014): 1256-1264. PubMed: 25048846.

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