



Product Sheet

Methanothermobacter thermautotrophicus

(ATCC® 700791™)

Please read this **FIRST**



Intended Use

This product is intended for research use only. It is not intended for any animal or human therapeutic or diagnostic use.

Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: *Methanothermobacter thermautotrophicus* (ATCC® 700791™)

Description

Designation: OSU 967 [RC]

Deposited Name: *Methanothermobacter thermautotrophicus* Zeikus and Wolfe

Propagation

Medium

ATCC® Medium 2133: OSU967

Growth Conditions

Temperature: 65.0°C

Atmosphere: Under a gas mixture of 80% H₂, 20% CO₂

Propagation Procedure

1. Sterilize the top of the Balch tube by spraying it with 70% ethanol and then flaming the top.
2. If needed, exchange the gas in the test tube for 80% H₂-20% CO₂.
3. If the medium is pink (see discussion about resazurin) add 2.0 ml of reducing agent (3% cysteine stock solution) per 100 ml of medium. Let the medium sit at room temperature for 10 to 20 minutes, until the resazurin becomes colorless, before inoculating.
4. Open the freeze-dried vial according to the enclosed instructions. Take a gassed 1.0 ml syringe tipped with 22 gauge needle and withdraw 0.5 ml of medium from the Balch tube and rehydrate the freeze dried pellet. Immediately place the re-hydrated vial under a stream of sterile gas, 80H₂-20%CO₂ to maintain anaerobicity.
5. Using the same syringe, withdraw the cell suspension from the vial and transfer it to the Balch tube. Plate 0.1 ml of the inoculated culture onto a non-selective medium and incubate aerobically at 30°C. Incubate the broth tube at 65°C.
6. Growth should be detected in the broth within 48 to 96 hours. No growth should be detected on the aerobic plate or broth.

ANAEROBIC CONDITIONS:

- A. Balch tubes (available from Bellco Glass, Vineland, NJ; are specially designed for anaerobic work and use an aluminum crimp cap to hold a rubber stopper in place. Needles can easily be inserted through the stopper, and the tubes can be pressurized to 2 atm. Alternatively, serum vials may be used, or screw cap tubes with butyl rubber stoppers, in the latter case the stopper may be removed and the tube placed under a cannula system that dispenses sterile, oxygen free gas for addition of reducing agents or inoculation.
- B. Resazurin is a commonly used redox indicator that is pink when the redox potential is above 50 mv, and colorless when the redox potential is below 110 mv. i.e. highly reducing. Most strict anaerobes require this low redox potential for optimum growth.
- C. To obtain a fully reduced medium, it is necessary that the medium be anoxic and that a reducing agent be added. Common reducing agents are sodium sulfide, cysteine, dithiothreitol, and titanium citrate.
- D. Syringes can be made anaerobic by one of two methods.
 1. Displace the dead space in the syringe with a sterile
 2. Displace the dead space in the syringe with a

References

References and other information relating to this product are available online at www.atcc.org.

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the current publication of the *Biosafety in Microbiological and Biomedical Laboratories* from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes for Health.

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Disclaimers

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Please see the enclosed Material Transfer Agreement (MTA) for further details regarding the use of this product. The MTA is also available on our Web site at www.atcc.org

Additional information on this culture is available on the ATCC web site at www.atcc.org.

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