



Geobacter bemidjiensis Nevin et al.

BAA-1014™

Description

Strain designation: Bem [DSM 16622, JCM 12645]

Deposited As: *Geobacter bemidjiensis* Nevin et al.

Type strain: Yes

Storage Conditions

Product format: Frozen

Storage conditions: -80°C or colder

Intended Use

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

BSL 1

ATCC determines the biosafety level of a material based on our risk assessment as guided by the current edition of *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, U.S. Department of Health and Human Services. It is your responsibility to understand the hazards associated with the material per your organization's policies and procedures as well as any other applicable regulations as enforced by your local or national agencies.

ATCC highly recommends that appropriate personal protective equipment is always used when handling vials. For cultures that require storage in liquid nitrogen, it is important to note that some vials may leak when submersed in liquid nitrogen and will slowly fill with liquid nitrogen. Upon thawing, the conversion of the liquid nitrogen back to its gas phase may result in the vial exploding or blowing off its cap with dangerous force creating flying debris. Unless necessary, ATCC recommends that these cultures be stored in the vapor phase of liquid nitrogen rather than submersed in liquid nitrogen.

Certificate of Analysis

For batch-specific test results, refer to the applicable certificate of analysis that can be found at www.atcc.org.

Growth Conditions

Medium:

ATCC Medium 1768: *Geobacter metallireducens* medium

Temperature: 30°C

Atmosphere: 80% N₂, 20% CO₂

Handling Procedures

1. Sterilize the top of the Balch tube by spraying it with 70% ethanol and then flaming.
2. If needed exchange the gas in the test tube for 80% N₂-20% CO₂.
3. When the Balch tube is ready to inoculate, thaw the frozen vial at room temperature under a gentle stream of oxygen-free gas.
4. For inoculation, use an anaerobic (see "d" below) 1.0 ml syringe tipped with 22-

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gauge needle, withdraw the cell suspension from the vial and transfer it to the broth. Plate 0.1 ml of the inoculated culture onto a non-selective medium and incubate aerobically at 30°C. Use 0.1 ml of the inoculated culture to inoculate a nonselective aerobic broth and an additional tube of #1768 broth. Incubate the non-selective aerobic broth tubes at 30°C. Incubate the anaerobic tube at 30°C.

5. Growth should be detected in the #1768 broth within 5 to 7 days. There should be no growth detected on the aerobic plate or in the aerobic 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. Alternatively, screw cap tubes with butyl rubber stoppers can be used. 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, the medium must be anoxic and a reducing agent must be added. Common reducing agents are sodium sulfide, cysteine, dithiothreitol, titanium citrate and Co-enzyme M (mercaptoethanesulfonic acid). For this culture, Co-enzyme M or Cysteine is the agent of choice.
- d. Syringes can be made anaerobic by one of two methods.
 1. Displace the dead space in the syringe with a sterile oxygen-free gas.
 2. Displace the dead space in the syringe with a reducing agent.

Notes

Cells are Gram-negative non-motile rods. Medium changes from golden brown to green when growth occurs.

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

Material Citation

If use of this material results in a scientific publication, please cite the material in the following manner: *Geobacter bemidjiensis* Nevin et al. (ATCC BAA-1014)

References

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

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Revision

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