Geobacter hydrogenophilus Coates et al.

51591™

Description

Strain designation: H-4
Deposited As: *Geobacter hydrogenophilus* Coates et al.
Type strain: No

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 1957: Geobacter medium
Temperature: 30°C
Atmosphere: 80% N_2, 20% CO_2

Handling Procedures

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% N_2-20% CO_2.
3. Add 0.1 mL of reducing agent (3% cysteine, stock solution) per each 10 mL of medium. Let the medium sit at room temperature for 30 minutes.
4. Once media is reduced, allow the vial to thaw at room temperature. Using a

needle withdraw the vial contents and aliquot into a broth of #1957.
5. Inoculate a second #1957 broth with 0.5 mL, and plate 0.1 mL on a #260 plates to check for aerobic and anaerobic contamination.
6. Incubate all media at 30°C.
7. In 1-2 weeks, growth should be evident by turbidity in the broth. No growth should occur on the #260 plate incubated aerobically.

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. 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.
c. 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

The addition of 0.2 mL of 1 M of sodium fumarate for every 10 mL of media prior to inoculation helps to produce better turbidity within the culture.

Cells appear as motile rods arranged singly and in pairs.

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

Material Citation

If use of this material results in a scientific publication, please cite the material in the following manner: *Geobacter hydrogenophilus* Coates et al. (ATCC 51591)

References

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

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