



Product Sheet

# *Geobacter hydrogenophilus* (ATCC® 51591™)

Please read this **FIRST**



Storage Temp.  
**Frozen: -80°C or colder**  
**Freeze-Dried: 2°C to 8°C**  
**Live Culture: See Propagation Section**

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Biosafety Level  
**1**

## 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: *Geobacter hydrogenophilus* (ATCC® 51591™)

## Description

**Designation:** H-4

**Deposited Name:** *Geobacter hydrogenophilus* Coates et al.

## Propagation

### Medium

ATCC® Medium 1957: *Geobacter* medium

### Growth Conditions

**Temperature:** 30°C

**Atmosphere:** Anaerobic gas mixture, 80% N<sub>2</sub>-20% CO<sub>2</sub>

### 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% N<sub>2</sub>-20% CO<sub>2</sub>.
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](http://www.atcc.org).

## References

References and other information relating to this product are available online at [www.atcc.org](http://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.

## ATCC Warranty

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Fax: 703.365.2750  
Email: [Tech@atcc.org](mailto:Tech@atcc.org)


Or contact your local distributor



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ATCC® product is a living cell or microorganism, ATCC lists the media formulation that has been found to be effective for this product. While other, unspecified media may also produce satisfactory results, a change in media or the absence of an additive from the ATCC recommended media may affect recovery, growth and/or function of this product. If an alternative medium formulation is used, the ATCC warranty for viability is no longer valid.

### 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](http://www.atcc.org)

Additional information on this culture is available on the ATCC web site at [www.atcc.org](http://www.atcc.org).

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