



# ***Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee et al.**

**33743™**

## **Description**

*Thermoanaerobacterium thermosulfurigenes* strain 4B is a thermophilic type strain isolated in 1979 from a microbial mat at Yellowstone National Park. This strain is known to produce ethanol from starch.

**Strain designation:** 4B [DSM 2229]

**Deposited As:** *Clostridium thermosulfurigenes* Schink and Zeikus

**Type strain:** Yes

**Patent depository:** This material was deposited with the ATCC Patent Depository to fulfill U.S. or international patent requirements. This material may not have been produced or characterized by ATCC. As an International Depository Authority (IDA) for patent deposits, ATCC is required to complete viability testing only at time of initial deposit of patent material. Patent deposits are made available on behalf of the Depositor when the pertinent U.S. or international patent is issued, but material may not be used to infringe the patent claims.

**Technical information:** ATCC Product Experience does not have technical information on patent deposits that are not produced or characterized by ATCC. Additional information can be found in the corresponding patent available from the patent holder or with the U.S. and/or international patent office.

---

## **Storage Conditions**

**Product format:** Freeze-dried

**Storage conditions:** 2°C to 8°C

---

## **Intended Use**

## ***Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee et al.**

33743

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

---

### **Growth Conditions**

# ***Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee et al.**

33743

## **Medium:**

ATCC Medium 1398: Modified low phosphate buffered basal medium

**Temperature:** 60°C

**Atmosphere:** Anaerobic

---

## **Handling Procedures**

1. Open vial according to enclosed instructions or visit [www.atcc.org](http://www.atcc.org) for instructions.
2. Under anaerobic conditions aseptically rehydrate the entire pellet with approximately 0.5 mL of #1398 broth. Aseptically transfer the entire contents to a 5-6 mL tube of #1398 broth. Additional test tubes can be inoculated by transferring 0.5 mL of the primary broth tube to these secondary broth tubes. Best practice dictates the use of pre-reduced media.
3. Use several drops of the primary broth tube to inoculate a #1398 plate and/or #1398 agar slant.
4. Incubate in an anaerobic atmosphere at 60°C for 48 hours. Incubate one agar plate aerobically at 37°C to check for contamination.

### **ANAEROBIC CONDITIONS:**

Anaerobic conditions for transfer may be obtained by the use of an anaerobic gas chamber or placement of test tubes under a gassing cannula system connected to anaerobic gas.

Anaerobic conditions for incubation may be obtained by any of the following:

- Loose screw caps on test tubes in an anaerobic chamber
  - Loose screw caps on test tubes in an activated anaerobic gas pack jar
  - Use of sterile butyl rubber stoppers on test tubes so that an anaerobic gas headspace is retained
- 

## **Material Citation**

If use of this material results in a scientific publication, please cite the material in the following manner: *Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee

# ***Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee et al.**

33743  
et al. (ATCC 33743)

---

## **References**

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

---

## **Warranty**

The product is provided 'AS IS' and the viability of ATCC® products is warranted for 30 days from the date of shipment, provided that the customer has stored and handled the product according to the information included on the product information sheet, website, and Certificate of Analysis. For living cultures, ATCC lists the media formulation and reagents that have been found to be effective for the product. While other unspecified media and reagents may also produce satisfactory results, a change in the ATCC and/or depositor-recommended protocols may affect the recovery, growth, and/or function of the product. If an alternative medium formulation or reagent is used, the ATCC warranty for viability is no longer valid. Except as expressly set forth herein, no other warranties of any kind are provided, express or implied, including, but not limited to, any implied warranties of merchantability, fitness for a particular purpose, manufacture according to cGMP standards, typicality, safety, accuracy, and/or noninfringement.

---

## **Disclaimers**

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. Any proposed commercial use is prohibited without a [license from ATCC](#).

While ATCC uses reasonable efforts to include accurate and up-to-date information

## ***Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee et al.**

33743

on this product sheet, ATCC makes no warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. ATCC does not warrant that such information has been confirmed to be accurate or complete and the customer bears the sole responsibility of confirming the accuracy and completeness of any such information.

This product is sent on the condition that the customer is responsible for and assumes all risk and responsibility in connection with the receipt, handling, storage, disposal, and use of the ATCC product including without limitation taking all appropriate safety and handling precautions to minimize health or environmental risk. As a condition of receiving the material, the customer agrees that any activity undertaken with the ATCC product and any progeny or modifications will be conducted in compliance with all applicable laws, regulations, and guidelines. This product is provided 'AS IS' with no representations or warranties whatsoever except as expressly set forth herein and in no event shall ATCC, its parents, subsidiaries, directors, officers, agents, employees, assigns, successors, and affiliates be liable for indirect, special, incidental, or consequential damages of any kind in connection with or arising out of the customer's use of the product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, ATCC is not liable for damages arising from the misidentification or misrepresentation of such materials.

Please see the material transfer agreement (MTA) for further details regarding the use of this product. The MTA is available at [www.atcc.org](http://www.atcc.org).

This material is cited in a US and/or international patent and may not be used to infringe the claims. Depending on the wishes of the Depositor, ATCC may be required to inform the Depositor of the party to which the material was furnished.

---

### **Copyright and Trademark Information**

© ATCC 2023. All rights reserved.

ATCC is a registered trademark of the American Type Culture Collection.

---

### **Revision**

***Thermoanaerobacterium thermosulfurigenes* (Schink and Zeikus) Lee et al.****33743**

This information on this document was last updated on 2025-04-03

---

**Contact Information**

ATCC

10801 University Boulevard

Manassas, VA 20110-2209

USA

US telephone: 800-638-6597

Worldwide telephone: +1-703-365-2700

Email: [tech@atcc.org](mailto:tech@atcc.org) or contact your local distributor