



Product Sheet

# *Prototheca wickerhamii* (ATCC® 16529™)

Please read this **FIRST**

Storage Temp.  
**Frozen Cultures:**  
-70°C for 1 week;  
liquid N<sub>2</sub> vapor  
for long term  
storage



**Freeze-dried Cultures:**  
2-8°C

**Live Cultures:**  
See Protocols  
section for  
handling  
information



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: *Prototheca wickerhamii* (ATCC® 16529™)

American Type Culture Collection  
PO Box 1549  
Manassas, VA 20108 USA  
[www.atcc.org](http://www.atcc.org)

800.638.6597 or 703.365.2700  
Fax: 703.365.2750  
Email: [Tech@atcc.org](mailto:Tech@atcc.org)

Or contact your local distributor



## Description

**Strain Designation:** NRRL YB-4330 [UTEX 1553]  
**Deposited Name:** *Prototheca wickerhamii* Tubaki and Soneda  
**Depositor:** WB Cooke  
**Isolation:** Household plumbing, Peoria, IL, (?)



## Propagation

### Growth Conditions

**Temperature:** 20°C to 25°C  
**Culture System:** Axenic

### Medium

ATCC® Medium 28: Emmons' modification of Sabouraud's agar

### Instructions for Complete Medium

ATCC Medium 28



## Protocols

### Storage and Culture Initiation

Frozen ampoules packed in dry ice should either be thawed immediately or stored in liquid nitrogen. If liquid nitrogen storage facilities are not available, frozen ampoules may be stored at or below -70°C for approximately one week. **Do not under any circumstance store frozen ampoules at refrigerator freezer temperatures (generally -20°C).** Storage of frozen material at this temperature will result in the death of the culture.

1. To thaw a frozen ampule, place it in a 35°C water bath until thawed (2 to 3 min). Immerse the ampule enough to cover only the frozen material. Do not agitate the ampule.
2. Immediately after thawing, aseptically transfer the entire contents to a single 16 x 125 mm screw-capped test tube containing a slant of ATCC Medium 28 or distribute over the surface of an agar plate of ATCC medium 28.
3. If a test tube culture has been established, incubate upright at 20°C to 25°C with the cap screwed on loosely. If a plate culture has been established, wrap the plate with parafilm and incubate inverted at 20°C to 25°C.

### Culture Maintenance

1. Transfer cells with an inoculating loop to a tube or plate of fresh agar medium from a growing culture at or near peak density.
2. Incubate as described in step 3 under the section for establishing a culture.



## Cryopreservation

### Harvest and Preservation

1. Harvest cells from a culture which is at or near peak density by adding 3.0 mL to 5.0 mL fresh ATCC medium 28 broth to the slant or plate and washing cells into suspension. It may be helpful to rub the surface of the agar with a spread bar or inoculating loop to detach adhering cells.
2. Adjust the concentration of cells to 2 x 10<sup>7</sup> mL with fresh broth medium, then dilute to half this concentration by adding an equal amount of a 20% (v/v) sterile solution of either DMSO or glycerol in fresh ATCC medium 28 broth.
3. Dispense in 0.5 mL aliquots into 1.0 mL to 2.0 mL sterile plastic screw-capped cryovials (special plastic vials for cryopreservation). The time from mixing of the cell preparation and the cryoprotective solution to the start of the cooling cycle should be no less than 15 min and no greater than 30 min.
4. Place vials in a controlled rate freezing unit. From room temperature cool at -1°C/min to -40°C. If freezing unit can compensate for the heat of fusion, maintain rate at -1°C/min through heat of fusion. At -40°C plunge ampoules into liquid nitrogen. Alternatively, place the vials in a Nalgene 1°C freezing apparatus. Place the apparatus at -80°C for 1.5 to 2 hours and then plunge ampoules into liquid nitrogen. (The cooling rate in this apparatus is approximately -1°C/min.)
5. The frozen preparations should be stored in either the vapor or liquid phase of a nitrogen refrigerator. Frozen preparations stored below -130°C are stable indefinitely. Those stored at temperatures above -130°C are progressively less stable as the storage temperature is elevated. Vials can be stored



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- between -80°C and -70°C for no longer than one week.
- To establish a culture from the frozen state place an ampule in a water bath set at 35°C until thawed (2 to 3 min). Immerse the ampule enough to cover only the frozen material. Do not agitate the ampule.
- Immediately after thawing, do not leave in the water bath, aseptically remove the contents of the ampule and add to a fresh slant of ATCC medium 28 or the surface of an agar plate of ATCC medium 28.
- Maintain as described above.



### 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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### Disclaimers

This product is intended for laboratory research purposes only. It is not intended for use in humans.

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

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