

Agars & Other Gelling Agents

PhytoTechnology Laboratories® offers a variety of agars and other products that can be used as gelling agents. These products have been tested in plant tissue culture applications to ensure the highest quality.

Agar is a natural product, which is produced from a family of red seaweeds (*Rhodophyceae*) primarily from two genera, *Gelidium* and *Gracillaria*. Agars produced from *Gelidium* typically have higher gel strength than those from *Gracillaria*. *Geledium* is a small, slow growing plant. Efforts to cultivate it in tanks or ponds have been biologically successful; however, it has generally proved to be uneconomic.

Gracillaria was once considered unsuitable for agar production because the gel strength was too low. However, in the 1950's it was discovered that pre-treatment of the seaweed with alkali before extraction lowered the yield but gave an agar with higher gel strength.



Agar has long been used to solidify media for plant tissue culture. The type of agar or gelling agent used can influence the growth of the tissue in culture. Both purity and cost of the gelling agent are important factors in any research or production operation. PhytoTechnology Laboratories® has expanded its line of gelling agents to allow greater selection in choosing the plant cell culture tested gelling agent for your particular requirement.

Since agar is derived from a biological source, the properties of this product can vary from lot to lot. PhytoTechnology Laboratories® screens every lot of agar prior to accepting it for use in plant tissue culture. We evaluate each lot for clarity, gel strength, biological growth of plants along with other physiochemical properties of the product. We suggest for critical research or production criteria, you may want to screen each lot prior to purchase. PhytoTechnology Laboratories® will reserve material for your use for a period of up to six months.

Most agars should be used at a concentration of five to twelve (5-12) grams per liter. Agar should be added slowly to the media while stirring or agitating. The pH of the media should be adjusted after the inclusion of agar. This is critical for proper gelling since the pH of the agar can vary from lot to lot. The agar gel generally becomes softer the more acidic the pH of the medium. Many types of agar will not properly gel at a pH of less than approximately 5.2.

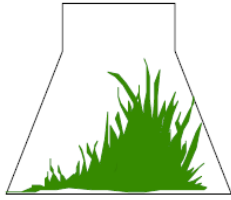
PhytoTechnology Laboratories®

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Web Site: www.phytotechlab.com

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Technical Information

Listed in the following table are some criteria, which may help you select the appropriate product for your application.

Agar and Other Gelling Agents Selection Guide

Product Number	Product Description	Use	Powder Color	Gel Color	Gel Strength	Recommended Concentration
A111	Agar, Micropropagation Grade	General Plant TC, Micropropagation	White to Off-White	Opaque to Off-White	Minimum 900 g/cm ²	5.0 to 8.0 g/L
A296	Agar, Bacteriological Grade	General Plant TC, Microbiology Research	Tan	Tan to Straw Colored	Minimum 700 g/cm ²	6.0 to 12.0 g/L
A175	Agar, Purified	High purity agar for embryogenic or other critical research	White	Opaque to Off-White	Minimum 700 g/cm ²	8.0 to 10.0 g/L
A133	AgarGellan—A proprietary blend of agar and Gellan Gum	General Plant TC/ Micropropagation	Off-White	Opaque to Off-White	TBD	3.5 to 5.0 g/L
A105	Agarose, Low Gelling Temp. (26-29° C)	Plant TC Research	White to Off-White	Opaque to Off-White	Minimum 250 g/cm ²	6 to 10 g/L
A110	Agarose, Low EEO (>35° C)	Plant TC Research	White to Off-White	Opaque to Off-White	Minimum 800 g/cm ²	6 to 10 g/L
A1315	Agarose, Low Gelling Temp. SeaPlaque®	Plant TC Research	White to Off-White	Colorless	TBD	6 to 10 g/L
A108	Alginic Acid	Embryo, Cell, and Protoplast Encapsulation	White to Off-White	Opaque to Off-White	TBD	1.75 -4.0% (w/v)
C257	Carrageenan – Gelcarin GP 812®	General Plant TC/ Micropropagation	Tan	Tan	TBD	8 to 10 g/L
C2000	Carrageenan, High Clarity	General Plant TC/ Micropropagation	Tan	Slight Yellow Tint	Minimum 800 g/cm ²	8 to 10 g/L
G434	Gellan Gum	General Plant TC /Micropropagation	White to Off-White	Colorless	Minimum 800 g/cm ²	1.5 to 2.5 g/L
G3251	Gelzan™ – Trademarked product of CP Kelco®	General Plant TC/ Micropropagation	White to Off-White	Colorless	Minimum 400 g/cm ²	1.5 to 2.5 g/L

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