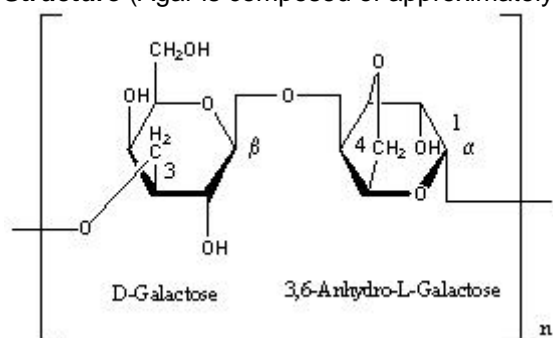


TECHNICAL INFORMATION

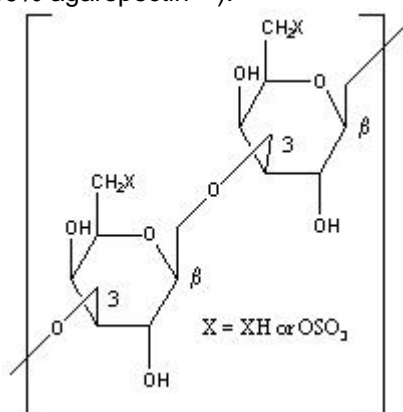
Catalog Number: 100262, 100266, 150178, 194021, 194022, 194615

Agar

Structure (Agar is composed of approximately 70% agarose and 30% agaropectin^{2,3}):



Agarose



Agaropectin

CAS #: 9002-18-0

Synonyms: Agar-agar; Gelose; Japan agar; Bengal isinglass; Ceylon isinglass; Chinese isinglass; Japan isinglass; Gum agar; Bengal gelatin; Ceylon; Digenea simplex mucilage; GAM medium; Lazor caran; Oxoid III; Oxoid L 11

Physical Description: White to light yellowish-tan powder

Solubility: Agar is strongly hydrophilic and can slowly absorb about 20 times its weight of cold water, swelling in the process.¹ Hot water is usually necessary to solubilize agar. Insoluble in alcohols.

Gelling Temperature: Approximately 33-35°C

pH: The pH of a 1.5% aqueous solution is approximately 7.0 to 7.6

Description: A polysaccharide complex extracted by bleaching and hot water treatment of agarocytes from the red alga *Rhodophyceae*, and usually consisting of the genera *Gelidium*, *Acanthopeltis*, *Ceramium*, *Pterocladia* and *Gracilaria*. The algae is typically found in the Pacific and Indian Oceans and in the Sea of Japan. It is primarily composed of two different units: Agarose and Agaropectin.^{2,3}

Agarose is a neutral gelling component which is composed of a linear polymer of alternating D-galactose and 3,6-anhydrogalactose units. Agaropectin is a non-gelling component which consists of b-1,3-glycosidically linked D-galactose units, some of which are sulfated at the 6th position.

According to the Merck Index³, agar is typically used in:

"Substitute for gelatin, isinglass, etc. in making emulsions including photographic, gels in cosmetics, and as thickening agent in foods esp. confectionaries and dairy products; in meat canning; in production of medicinal encapsulations and ointments; as dental impression mold base; as corrosion inhibitor; sizing for silks and paper; in the dyeing and printing of fabrics and textiles; in adhesives. In nutrient media for bacterial cultures."

Use approximately 15 grams/L for plates and about 7 grams/L for top agar. When possible heat the agar in solution until boiling to thoroughly dissolve the agar and then autoclave. Alternately, agar medias can be directly autoclaved and then carefully mixed after autoclaving to ensure consistent distribution of the agar in solution. Heat labile components should be added only after autoclaving when the media has been cooled to approximately 50°C. The media should then be dispensed immediately.

Availability:

Catalog Number	Description	Size
100262	Agar, USP Grade	100 g 250 g 500 g 1 kg

100266	Agar, Shredded	100 g 250 g 500 g
150178	Agar, Bacteriological Grade. Specially purified for use in preparing solid culture media for microbiological and bacteriological applications. Produces clear gels and media. Approximately 100 mesh.	100 g 250 g 500 g
194022	Agar, Molecular Biology Reagent	250 g 1 kg
194615	Agar, Cell Culture Reagent	100 g 250 g 500 g 1 kg 5 kg
194021	Agar, Bacteriological Grade, Molecular Biology Reagent. Naturally occurring impurities have been reduced to a minimum.	250 g 1 kg

Agar Substitute:

Catalog Number	Description	Size
150180	Gel-Gro™ (Gellan Gum). A naturally derived gelling polymer. It is a highly purified heteropolysaccharide that forms clear gels in aqueous systems. Useful as a gelling agent in microbiological and plant tissue culture work.	100 g 250 g 500 g 1 kg

References:

- Lewis, R.J., Sr., *Hawley's Condensed Chemical Dictionary*, **12th Ed.**, p. 27, Van Nostrand Reinhold Co.: New York (1993).
- Scott, T. and Eagleson, M., *Concise Encyclopedia: Biochemistry*, **2nd Ed.**, p. 18, Walter de Gruyter: New York (1988).
- *Merck Index*, **12th Ed.**, No. 182.
- *Difco Manual*, **11th Ed.**, pp. 21-23, Difco Laboratories: Sparks, MD (1998).