BioCat Universal Agarose

Cat. No. AGA500-BCAT

For research use only.
Store at room temperature.

BioCat Universal Agarose

1. Features

- Molecular Biology Grade
- Certified free of DNases and RNases
- No DNA binding
- High lot-to-lot consistency
- High separation properties and sharp band patterns
- Easy solubility without foaming
- Excellent optical transparency

2. Description

BioCat Universal Agarose is ideal for routine separation analysis.
It can be used for analytical and preparative nucleic acid electrophoresis and provides the sharpest resolution of fragments from 50 bp to 50,000 bp. Even at low concentrations the gel produced is very firm.
The molecular biology grade BioCat Universal Agarose is highly pure and has no detectable DNase or RNase activity.

3. Separation Range

DNA: approx. 0.05 kbp – 50 kbp
RNA: approx. 0.30 kb – 20 kb

4. Analytical Specifications

- Gelling temperature: ≤ 37 °C
- Melting temperature: ≤ 90 °C
- Electroendosmosis: ≤ 0.140
- Gel strength (1.5 %): ≥ 2300 g / cm^2
- Sulphate content: ≤ 0.10 %
- Water content: ≤ 10.0 %

5. Contents

Product	Cat#	Size
BioCat Universal Agarose	AGA500-BCAT	500 g

BioCat Universal Agarose is manufactured and quality-controlled in accordance with ISO 9001:2000.

Storage Conditions
Store BioCat Universal Agarose in a dry place at room temperature. BioCat Universal Agarose is stable for at least 2 years when stored porperly.

Shipping Conditions
BioCat Universal Agarose is shipped at ambient temperature.

Safety Precautions
Always wear eye protection when preparing agarose gel solutions and protect yourself and others against boiling liquids.

6. Preparation of Agarose

For preparing 100 ml of 1% agarose gel solution use 1 g agarose in 100 ml of the appropriate electrophoresis buffer.

Method 1 - Microwave Oven

1. Pour buffer (approx. 90 % of final volume) into an appropriate flask that can accommodate up to four times the final gel volume and add a magnetic stir bar.
2. Put the flask onto a magnetic stirrer and slowly add agarose powder while stirring constantly to avoid clotting.
3. Remove magnetic stir bar.
4. Add remaining buffer up to the desired final volume.
5. Weigh and record the weight of the flask prior to heating. Heat for 1 – 2 minutes in a microwave oven (600 Watt). Gently swirl the flask to mix the solution. Warning: there may be a delay in the liquid boiling!
6. Using the microwave oven, heat in short bursts of 5 –10 seconds or until the solution is boiling, with breaks of 10 –15 seconds between heating phases to disperse bubbles by gently swirling the flask. Beware of hot glass ware and liquid. Continue until the agarose is completely dissolved.
7. Again, weigh the flask and top up lost volume with warm, deionized water. Gently swirl the flask to ensure complete mixing.
8. Let the solution cool down at room temperature for 15 –20 minutes or until a gel temperature of 50 – 60 °C is reached.

Method 2 - Simmering Water Bath

1. See Method 1 above, steps 1-2 and 4.
2. Weigh and record the weight of the flask prior to heating. Heat agarose suspension up in a simmering water bath with constant stirring.
3. Leave the flask in the water bath for further 15 – 20 minutes, or until the agarose is completely dissolved.
4. Switch off the magnetic stirrer and leave the flask in the bath for further 15 minutes.
5. Again, weigh the flask and top up lost volume with warm, deionized water. Gently swirl the flask to ensure complete mixing.
6. Let the solution cool down at room temperature for 15 –20 minutes or until a gel temperature of 50 – 60 °C is reached.

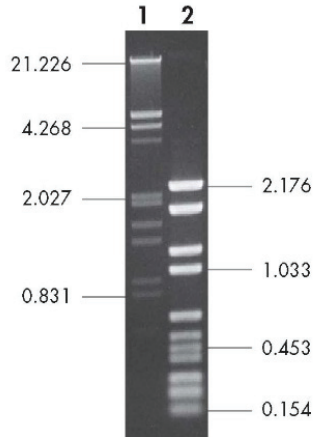
7. Resolution of Linear DNA on Agarose Gels

Linear DNA can be resolved by size using agarose gels of various concentrations. The greater the percentage of agarose, the smaller the linear DNA that can be resolved. For general recommendations, see table below.

Agarose Gel, %	Range of effective separation, bp
0.5	1,000 – 30,000
0.7	800 – 12,000
1.0	500 – 10,000
1.2	400 – 7,000
1.5	200 – 3,000
2.0	50 – 2,000

8. DNA Separation using BioCat Universal Agarose

1% 1x TAE BioCat Universal Agarose gel showing separation of Lambda DNA digested with EcoR I/Hind III (1) and a mixture of pBR328 DNA digested with Bgl I and Hinf I, respectively (2). Fragment sizes in kbp.



9. Trouble Shooting

Problem	Possible Cause	Recommendation
Strong foaming	Flask too small	Flask should have at least twice the volume of the gel
	Wrong container	Erlenmeyer flasks are better suited than beakers due to their conical shape
Agarose burns	Inappropriate heating method	Use a microwave oven or water bath for heating. Do not use stirrers with hot plate (if absolutely needed let cool down slowly with continuous stirring)

10. Related Products

HyperLadder Molecular Weight Markers	Size Range, bp	More Information
HyperLadder 25 bp HyperLadder 50 bp HyperLadder 100 bp HyperLadder 1 kb EasyLaddder I	25 - 500 50 – 2 ,000 100 – 1,000 200 – 10,000 50 – 2,000	www.biocat.com/bioline/hyperladder

11. Scientific Support

For more information about BioCat products and to download manuals in PDF format, please visit our website: http://www.biocat.com

For additional information or technical assistance, please call or email us at:
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