Nova Agarose Ultra Pure

Reference: AB15000; AB15001

INTENDED USE AND PRESENTATION:

Agarose powder for routine analysis is widely used in molecular biology research.

AB15000, 100 g.

AB15001, 500 g.

For research use only.

SUMMARY, EXPLANATION AND LIMITATIONS:

Nova Agarose Ultra Pure is nuclease-free all purpose agarose powder. Ideal for routine analysis of nucleic acids by gel electrophoresis (100 – 23000 bp) or blotting (>1 Kb) and is also suitable for protein applications. Due to its low EEO, DNA will have a high electrophoretic mobility.

The product features are:

-Gel strength (1%) ≥1200 g/cm^2

-Gelling temperature (1,5%) 36°C± 1,5°C

-Melting temperature (1,5%) ≥90°C.

Suggested Agarose Concentrations

Size Range bp	Final Agarose Concentration	
	1X TAE Buffer	1X TBE Buffer
150 – 800	2,0 %	1,8 %
100 – 600	3,0 %	2,0 %
50 – 250	4,0 %	3,0 %
20 – 130	5,0 %	4,0 %
< 80	-	5,0 %

Dye Mobility Table

Migration of double-stranded DNA in relation to Bromophenol Blue (BPB) and Xylene Cyanol (XC) in Nova Agarose Ultra Pure.

Agarose	1X TAE Buffer		1X TBE Buffer	
	XC	BPB	XC	BPB
2,0 %	480	70	310	40
3,0 %	200	40	140	35
4,0 %	120	35	85	30
5,0 %	85	30	60	15

APPLICATIONS:

- Analytical electrophoresis of DNA and RNA
- Blotting of DNA and RNA

PRODUCT COMPOSITION:

This product is provided as nuclease-free agarose powder.

METHODS AND PROCEDURE:

Microwave Instructions for Agarose Preparation:

1. Choose a beaker that is 2-4 times the volume of the solution.

2. Add chilled electrophoresis buffer and a stir bar to the beaker.

3. Slowly sprinkle in the agarose powder while the solution is rapidly stirred.

4. Remove the stir bar.

5. Soak the agarose in the buffer for 15 minutes.

6. Weigh the beaker and solution before heating.

7. Cover the beaker with plastic wrap.

8. Pierce a small hole in the plastic wrap for ventilation. For agarose concentrations >4%, the following additional steps will further help prevent the agarose solution from foaming during melting/dissolution:

a. Heat the beaker in the microwave oven on “Medium” power for 1 minute.

b. Remove the solution from the microwave.

c. Allow the solution to sit for 15 minutes.

9. Heat the beaker in the microwave on “Medium” power for 2 minutes.

10. Remove the beaker from the microwave oven.

Caution: Any microwaved solution may become superheated and foam over when agitated.

11. Gently swirl the beaker to resuspend any settled powder and gel pieces.

12. Reheat the beaker on “High” power until the solution comes to a boil.

13. Hold at boiling point for 1 minute or until all of the particles are dissolved.

14. Remove the beaker from the microwave oven.

15. Gently swirl the beaker to thoroughly mix the agarose solution.

16. After dissolution, add sufficient hot distilled water to obtain the initial weight.

17. Mix thoroughly.

18. Cool the solution to 50-60°C prior to casting. Once the gel is cast, allow the molten agarose to cool and gel at room temperature. The gel must then be placed at 4°C for 20 minutes to obtain optimal resolution and gel handling characteristics.

Hot Plate Instructions for Agarose Preparation:

1. Choose a beaker that is 2-4 times the volume of the solution.

2. Add chilled electrophoresis buffer and a stir bar to the beaker.

3. Slowly sprinkle the agarose powder while the solution is rapidly stirred.

4. Weigh the beaker and solution before heating.

5. Cover the beaker with plastic wrap.

6. Pierce a small hole in the plastic wrap for ventilation.

7. Bring the solution to a boil while stirring.

8. Maintain gentle boiling until all the agarose is dissolved (approximately 10 minutes).

9. Add sufficient hot water to obtain the initial weight.

10. Mix thoroughly.

11. Cool the solution to 50-60°C prior to casting. Once the gel is cast, allow the molten agarose to cool and gel at room temperature**. The gel must then be placed at 4°C for 20 minutes to obtain optimal resolution and gel handling characteristics.**

REF Catalog number | LOT Batch code | RUO Research use only

Temperature limitation | Expiration date

Manufacturer | See instruction for use

Gennova Scientific, S.L.
C/ Johann Gutenberg, 4F. Pol. Ind.
El Cáñamo I • 41300 San José
de La Rinconada • Sevilla, SPAIN
Teléfono: +34 954 150767
Fax: +34 955 266494

info@gennovalab.com
www.gennova-europe.com

REQUIRED MATERIALS BUT NOT SUPPLIED:

All reagents, materials, and laboratory equipment for PCR and determination procedures are not provided with this reagent. This includes sterile reaction tubes, micropipettes and tips, template DNA, gen-specific PCR primer pair, dNTPs mixture, PCR grade H_2O, heat pretreatment equipment (thermoblock, microwave), centrifuge, cold store and thermal block cycler.

Buffered solutions for DNA extraction or purification, enzyme treatments, highly sensitive detection systems, and other auxiliary reagents are available from Gennova Scientific.

STORAGE AND STABILITY:

Store at -20°C until the expiration date printed on product label. Avoid prolonged exposure to light. Avoid multiple freeze-thaw cycles and exposure to frequent temperature changes. Do not use after the expiration date. If the product is stored under different conditions from those stipulated in these technical indications, the new conditions must be verified by the user. The validity period of the ready to use products when opened, is the same as the expiration date indicated on the label of intact product.

Gennova Scientific guarantees that the product will maintain all of the described characteristics from the production date until the expiration date, as long as the product is stored and used as recommended. No other guarantees are provided. Under no circumstances Gennova Scientific is obliged to cover damages caused by use of this reagent.

TROUBLESHOOTING:

If unusual banding is observed or any other deviations from the expected results, please read these instructions carefully, along with the instructions from the PCR and determination systems. If this does not solve the problem, please contact Gennova Scientific's technical support department (techsupport@gennovalab.com) or your local distributor.

PRECAUTIONS:

Use only by qualified personnel.

Use proper protective equipment in order to avoid contact with reagents and samples in the eyes, skin, and mucosal tissues. In case of contact with sensitive areas, immediately flush the affected area with water. Avoid microbial contamination of the reagent, as this may produce nonspecific amplification results.

Material safety data sheet (MSDS) is available upon request.

PERFORMANCE CHARACTERISTICS:

Gennova Scientific has performed studies to evaluate the functioning of this ladder for use with standard visualization and determination systems, concluding that the product is both specific and sensitive for determination performance.

BIBLIOGRAPHY:

Chien A., Edgar D.B., Trela J.M., "Deoxyribonucleic acid polymerase from the extreme thermophile *Thermus aquaticus*", Journal of Bacteriology, 127(3), 1550-57, 1976.

Lawyer F.C., Stoffel S., Saiki R.K., Myambo K., Drummond R., et al., "Isolation, characterization, and expression in *Escherichia coli* of the DNA polymerase gene from Thermus aquaticus", The Journal of Biological Chemistry, 264(11), 6427-37, 1989.

Tindall K.R., Kunkel T.A., "Fidelity of DNA synthesis by the *Thermus aquaticus* DNA polymerase", Biochemistry, 27(16), 6008-13, 1988.

Innis M.A., Myambo K.B., Gelfand D.H., Brow M.A., "DNA sequencing with *Thermus aquaticus* DNA polymerase and direct sequencing of polymerase chain reaction-amplified DNA", Proceedings of the National Academy of Sciences of the United States of America, 85(24), 9436-40, 1988.

Lo Y.M., Mehal W.Z., Fleming K.A., "Rapid production of vector-free biotinylated probes using the polymerase chain reaction", Nucleic Acids Research, 16(17), 8719, 1988.

Erlich H.A., (ed.) 1988, "PCR technology: principles and applications for DNA amplification", Stockton Press, New York.

REF Catalog number | LOT Batch code | RUO Research use only

Temperature limitation | Expiration date

Manufacturer | See instruction for use

Gennova Scientific, S.L.
C/ Johann Gutenberg, 4F. Pol. Ind.
El Cáñamo I • 41300 San José
de La Rinconada • Sevilla, SPAIN
Teléfono: +34 954 150767
Fax: +34 955 266494

info@gennovalab.com
www.gennova-europe.com