Ultra Low Range DNA Ladder

invitrogen

PRODUCT INFORMATION SHEET Pub. No. MAN0017356 Rev. A.0

Print Options

Contents

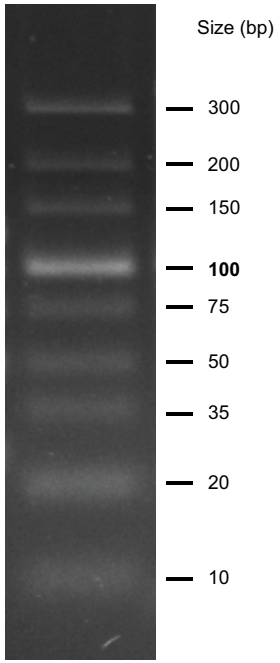
Catalog No.	Size	
10597012	50 µg	Kit contents

Storage

- Product is shipped at ambient temperature.
- Store at –20°C.

Product description

- The Invitrogen™ Ultra Low Range DNA Ladder is designed for sizing and quantification of double stranded DNA on 4% to 5% agarose gels.
- The Ultra Low Range DNA Ladder consists of 9 individual chromatography-purified DNA fragments ranging in size from 10 bp to 300 bp.
- A reference band at 100 bp is included for easy orientation.
- The ladder is supplied with 6X TrackIt™ Cyan/Yellow Loading Buffer for sample DNA.



Required materials

List of materials

Online resources

- Visit our product pages for additional information and protocols.
- Go online to view related DNA ladders and markers.
- For support, visit thermofisher.com/support.

Important guidelines

- Do not heat the Ultra Low Range DNA Ladder before loading.
- Load the same volume of DNA sample and DNA ladder.
- For quantification, adjust the concentration of the sample to equalize it approximately with the amount of DNA in the nearest band of the ladder.
- For DNA bands visualization with GelRed™ use gel staining after electrophoresis to avoid aberrant DNA migration.

Guidelines for agarose gel preparation

- Determine the required agarose concentration for your gel based on the size of DNA fragments to be separated.

Fragment size	Recommended agarose gel %	
	1X TAE	1X TBE
800–10,000	0.8	0.7
400–8,000	1.0	0.85
300–7,000	1.2	1.0

- Prepare agarose in a flask with 2-4 times the volume of the agarose solution.
- Exercise caution when handling microwaved agarose. The solution may become superheated and foam over when agitated.
- Refer to the product insert for UltraPure™ Agarose for detailed instructions on agarose preparation.

Guidelines for staining gels

Troubleshooting

Limited product warranty and disclaimer details

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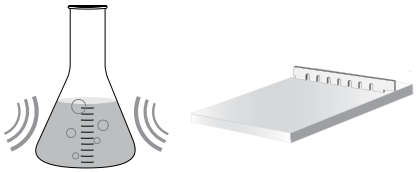
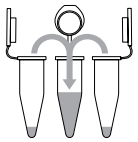
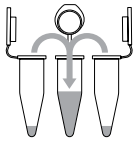
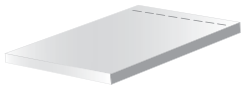
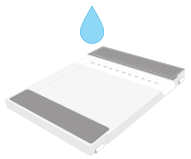
Prepare DNA ladders and samples for electrophoresis

<table>
<tr><th colspan="2">Step</th><th>Action</th></tr>
<tr><td>1</td><td>  </td><td>Cast agarose gel</td><td>a. Prepare agarose solution (w/v) for the gel percentage appropriate for separating your DNA fragments.
b. Microwave agarose solution.
c. Cast agarose gel.</td></tr>
<tr><td>2</td><td>  </td><td>Prepare DNA ladder</td><td>a. Thaw, mix and briefly centrifuge each component before use.
b. Add the following components to prepare enough ladder for a single 5 mm well.
<table>
<tr><th>Component</th><th>Volume</th></tr>
<tr><td>DNA ladder [1]</td><td>1 µL (500 ng)</td></tr>
<tr><td>6X TrackIt™ Cyan/Yellow Loading Buffer</td><td>1 µL</td></tr>
<tr><td>Water, nuclease free</td><td>4 µL</td></tr>
</table>
[1] Scale components up or down depending upon width of wells. Modify volume by 0.2 µL (0.1 µg of DNA) for each 1 mm of width.
c. Mix gently.
d. Load DNA ladder on gel.</td></tr>
<tr><td>3</td><td>  </td><td>Prepare samples</td><td>a. Dilute your sample with 6X TrackIt™ Cyan/Yellow Loading Buffer (Cat. no. 10482035): mix 1 volume of loading dye with 5 volumes of the DNA sample.
b. Mix gently.
c. Load DNA ladder on gel.</td></tr>
<tr><td>4</td><td>  </td><td>Perform electrophoresis</td><td>a. Add appropriate amount of UltraPure TAE or UltraPure TBE buffer to chamber.
b. Set appropriate voltage and perform electrophoresis of samples.
<table>
<tr><th>DNA size</th><th>Voltage</th><th>Buffer</th></tr>
<tr><td><1 kb</td><td>5–10 V/cm</td><td>TBE</td></tr>
<tr><td>1-5 kb</td><td>4–10 V/cm</td><td>TAE or TBE</td></tr>
<tr><td>>5 kb</td><td>1–3 V/cm</td><td>TAE</td></tr>
</table></td></tr>
<tr><td>5</td><td>  </td><td>Stain agarose gel</td><td>a. Incubate gel in staining buffer for 30 minutes.
b. Visualize DNA ladder and samples.
▪ Use UV transilluminator to detect DNA bands stained with ethidium bromide.
▪ Use blue light transilluminator to detect DNA bands stained with SYBR™ stains.</td></tr>
</table>

For support, visit thermofisher.com/support.