



Contents

Catalog No.
15628019
15628050

Size
50 µg
250 µg



Kit contents



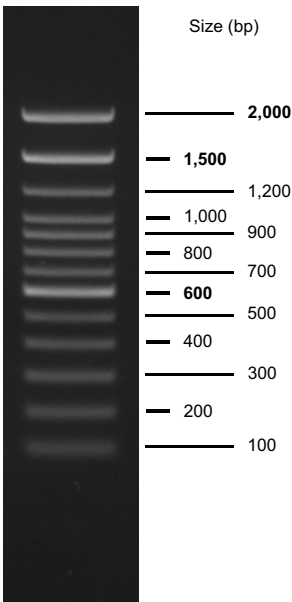
Storage

- Product is shipped at [ambient temperature](#).
- Store at -20°C



Product description

- The Invitrogen™ 100 bp DNA Ladder is designed for sizing and quantification of double stranded DNA on 1% to 2% agarose gels.
- The 100 bp DNA Ladder consists of 13 individual chromatography-purified DNA fragments ranging in size from 100 bp to 2,000 bp.
- Three reference bands at 2,000 bp, 1,500 bp, and 600 bp are included for easy orientation.
- The ladder is supplied with 10X BlueJuice™ Gel Loading Buffer for sample DNA.



Required materials



List of materials

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



Online resources



Important guidelines

- Do not heat the 100 bp 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

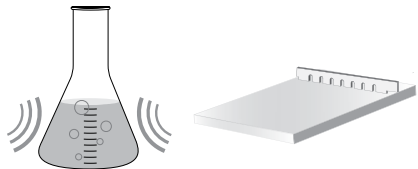
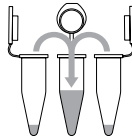
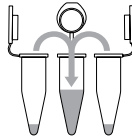


Troubleshooting



Limited product warranty and disclaimer details

Prepare DNA ladders and samples for electrophoresis

Step		Action												
1		Cast agarose gel a. Prepare agarose solution (w/v) for the gel percentage appropriate for separating your DNA fragments. b. Microwave agarose solution. c. Cast agarose gel.												
2		Prepare DNA ladder 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 border="1" data-bbox="976 462 1974 628"><thead><tr><th>Component</th><th>Volume</th></tr></thead><tbody><tr><td>DNA ladder [1]</td><td>1 µL (500 ng)</td></tr><tr><td>10X BlueJuice™ Gel Loading Buffer</td><td>1 µL</td></tr><tr><td>Water, nuclease free</td><td>8 µL</td></tr></tbody></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.	Component	Volume	DNA ladder [1]	1 µL (500 ng)	10X BlueJuice™ Gel Loading Buffer	1 µL	Water, nuclease free	8 µL				
Component	Volume													
DNA ladder [1]	1 µL (500 ng)													
10X BlueJuice™ Gel Loading Buffer	1 µL													
Water, nuclease free	8 µL													
3		Prepare samples a. Dilute your sample with 10X BlueJuice™ Gel Loading Buffer (Cat. no. 10816015): mix 1 volume of loading dye with 9 volumes of the DNA sample. b. Mix gently. c. Load DNA ladder on gel.												
4		Perform electrophoresis a. Add appropriate amount of UltraPure TAE or UltraPure TBE buffer to chamber. b. Set appropriate voltage and perform electrophoresis of samples. <table border="1" data-bbox="976 1105 1974 1271"><thead><tr><th>DNA size</th><th>Voltage</th><th>Buffer</th></tr></thead><tbody><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></tbody></table>	DNA size	Voltage	Buffer	<1 kb	5–10 V/cm	TBE	1–5 kb	4–10 V/cm	TAE or TBE	>5 kb	1–3 V/cm	TAE
DNA size	Voltage	Buffer												
<1 kb	5–10 V/cm	TBE												
1–5 kb	4–10 V/cm	TAE or TBE												
>5 kb	1–3 V/cm	TAE												
5		Stain agarose gel 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.												