

# Product Information

## DNA Ladders, Ready-to-Load

### Kit Contents

| Component                                      | 31084<br>1 kb DNA Ladder<br>Ready-to-Load | 31085<br>100 bp DNA Ladder<br>Ready-to-Load |
|------------------------------------------------|-------------------------------------------|---------------------------------------------|
| DNA Ladder (20 ng/μL in 1X DNA Loading Buffer) | 31084A<br>(1 kb DNA Ladder)<br>1.5 mL     | 31085A<br>(100 bp DNA Ladder)<br>1.5 mL     |
| 6X DNA Loading Buffer (Blue)                   | 99962<br>1.5 mL                           | 99962<br>1.5 mL                             |

**Unit size:** 150 applications (1.5 mL)

### Storage and Handling

Store at -20°C. Product is stable for at least 24 months from date of receipt when stored as recommended. Ready-to-Use DNA Ladders also may be stored at 4°C for up to six months.

### Product Description

These DNA Ladders are supplied ready-to-load in 1X DNA Loading Buffer at the optimal concentration for GelRed® or GelGreen® precast gels.

The 1 kb DNA Ladder is suitable for sizing linear double-stranded DNA fragments from 250 bp to 10 kb. The 1 kb and 3 kb bands have increased intensity to provide internal orientation (Figure 1). When 10 μL (200 ng) of 1 kb ladder is loaded, the reference bands will contain ~32 ng of DNA per band, while the other bands will contain ~12 ng of DNA per band.

The 100 bp DNA Ladder is suitable for sizing linear double-stranded DNA fragments from 100 bp to 1500 bp. The 500 bp band has increased intensity to provide internal orientation (Figure 1). When 10 μL (200 ng) of 100 bp ladder is loaded, the reference band will contain ~46 ng of DNA, while the other bands will contain ~15.4 ng of DNA per band.

The loading buffer provided contains density agents and two blue electrophoresis tracking dyes that run at approximately 1.5 kb and 200 bp in a 1% agarose gel.

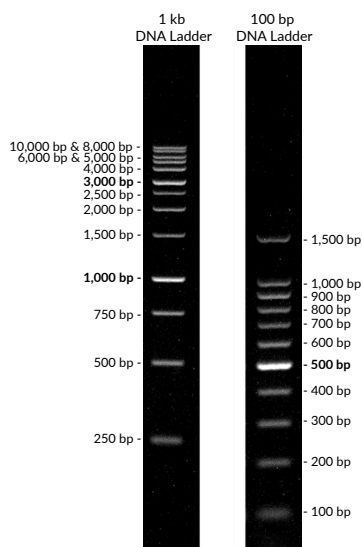


Figure 1. DNA Ladders separated on a 1% agarose/1X TBE GelRed® precast gel.

### Experimental Protocols

These ladders are supplied in a ready-to-load format at an optimal concentration for use on GelRed® or GelGreen® precast gels. Note that higher loading amounts may be needed for gel stains with lower sensitivity like ethidium bromide or SYBR® Safe.

There is no need to mix the ladder with 6X loading buffer prior to loading onto a gel. The vial of DNA Loading Buffer is provided for your convenience to add to your other DNA samples before electrophoresis (you may also use your own DNA loading buffer if preferred).

#### To use the Ready-to-Load ladder for agarose gel electrophoresis

1. Warm the ladder to room temperature and vortex briefly to mix.
2. Load 5-10 μL of ladder per 5 mm lane for 100-200 ng total DNA per lane.

#### To use the 6X DNA Loading Buffer to prepare other DNA samples (optional; you may use other loading buffer if preferred)

1. Warm the buffer vial to room temperature and vortex to mix.
2. Add 1 volume of 6X DNA loading buffer to 5 volumes of your DNA sample for a final concentration of 1X gel loading buffer. For example, add 2 μL of 6X DNA Loading Buffer to 10 μL of DNA sample. Volumes may be scaled proportionally as needed for larger or smaller DNA sample volumes.
3. Pipette up and down or vortex briefly to mix, and then load the entire volume (DNA + Loading Buffer) on the gel.

Biotium also offers 1 kb DNA Ladder in TE Buffer (Cat. No. 31080) and 100 bp DNA Ladder in TE buffer (Cat. No. 31081) (see Related Products).

### Related Products

| Cat. No. | Product                                               |
|----------|-------------------------------------------------------|
| E90005   | Gel-Bright™ Laser Diode Gel Illuminator               |
| 41011    | GelRed® Prestain Plus 6X DNA Loading Dye              |
| 41003    | GelRed® Nucleic Acid Gel Stain, 10,000X in Water      |
| 41041    | Precast GelRed® Agarose Gels, 1% Agarose/TAE          |
| 41029    | GelRed® Agarose LE                                    |
| 41005    | GelGreen® Nucleic Acid Gel Stain, 10,000X in Water    |
| 41030    | GelGreen® Agarose LE                                  |
| 41039    | Go-Go™ Fast DNA Gel Running Buffer, 50X               |
| 41006    | TBE Buffer, 5X                                        |
| 22031    | 1X TAE (1L) Buffer Powder Packets (box of 50 packets) |
| 99962-1  | 6X DNA Loading Buffer (Blue)                          |
| 99859-1  | 6X DNA Loading Buffer (Orange)                        |
| 41028    | Agarose LE, Ultra-Pure Molecular Biology Grade        |
| 41032    | EMBER500™ RNA Prestain Loading Dye                    |
| 41020    | DNAzure® Blue Nucleic Acid Gel Stain, 100X            |
| 41008    | PAGE GelRed® Nucleic Acid Gel Stain, 10,000X in Water |

Please visit our website at [www.biotium.com](http://www.biotium.com) for information on our life science research products, including safer and more sensitive GelRed® and GelGreen® Nucleic Acid Gel Stains, PCR master mixes, and nucleic acid extraction and quantitation kits.

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