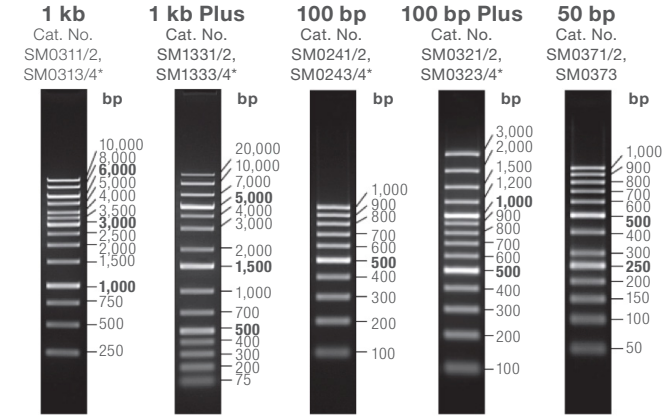
GeneRuler DNA Ladders

Thermo Scientific™ GeneRuler™ DNA Ladders are available in:

- Fragment sizes: 1 kb, 50 bp, 100 bp, ultra low, low, and high range
- Formats: Plus, ready-to-use, express, and mix



* Ready-to-use ladders contain Thermo Scientific™ TriTrack™ loading buffer with three convenient dyes to easily monitor DNA migration during electrophoresis.

Did you choose the right ladder?

Choose	When
Ready-to-use (RTU)	You need convenience—these are premixed with DNA loading buffer and tracking dyes
Plus	You need to visualize a wider range of DNA fragments
Ultra low and low range	You need approximate quantification and sizing of low molecular weight DNA fragments, or analysis of siRNA (ultra low)
High range	You need fast sizing of high molecular weight DNA fragments (1.5 hr in 0.4% agarose gel)
Express	You need fast separation (5–15 min at 23 V/cm) under a wide range of electrophoresis conditions, including different buffers, voltages, or gel percentages
Mix	You need a DNA ladder with high DNA band density for precise sizing of target DNA

thermo scientific

Loading protocols

<table>
<tr><th></th><th>Conventional</th><th>Ready-to-use</th></tr>
<tr><td>Step 1</td><td><table>
<tr><th>Combine</th><th>Agarose</th><th>Polyacrylamide</th></tr>
<tr><td>DNA ladder</td><td>1–2 µL</td><td>1–2 µL</td></tr>
<tr><td>6X DNA loading dye</td><td>1 µL</td><td>0.5 µL</td></tr>
<tr><td>Water</td><td>3–4 µL</td><td>0.5–1.5 µL</td></tr>
<tr><td></td><td>6 µL</td><td>3 µL</td></tr>
</table></td><td>Mix gently</td></tr>
<tr><td>Step 2</td><td>Mix gently</td><td rowspan="2">Load 1 µL per mm of gel lane width</td></tr>
<tr><td>Step 3</td><td>Load mixture in 5 mm gel lane*</td></tr>
</table>

* When using 2 µL of the DNA ladder, use 3 µL or 0.5 µL of water with agarose or polyacrylamide gels, respectively.

** For gels with other lane widths, scale mixture up or down; Use 0.2–0.4 µL (0.1–0.2 µg) of DNA ladder per 1 mm of lane.

Recommendations

- Do not heat the DNA ladder before loading.
- To obtain the correct final concentration of the dye mixture for loading of DNA samples, mix one volume of Thermo Scientific™ DNA Loading Dye, 6X (Cat. No. R0611 or R0631, supplied with the ladder) with 5 volumes of the DNA sample.
- Load the same volumes of the DNA sample and the ladder onto the gel.
- For quantification, adjust the concentration of your DNA sample so that your band of interest is approximately matched in mass (ng) to the nearest band of the ladder.
- For DNA band visualization with Invitrogen™ SYBR™ Green I Dye and other intercalating dyes, do not add the dye to the sample; stain the gel after electrophoresis, or include the dye in the agarose gel, to avoid aberrant DNA migration.

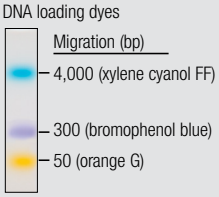
Important note: For DNA band visualization with GelRed™ dye (Biotium, Inc.), stain the gel after electrophoresis to avoid aberrant DNA migration

TriTrack DNA Loading Dye

TriTrack DNA Loading Dye, 6X (Cat. No. R1161) contains three dyes (bromophenol blue, xylene cyanol FF, and orange G) for visual tracking of DNA migration during electrophoresis.

- Add 1 volume of the TriTrack dye to 5 volumes of DNA sample.
- Mix well, spin down, and load.

In a 1% agarose gel, xylene cyanol FF comigrates with ~4,000 bp DNA, bromophenol blue comigrates with ~300 bp DNA, and orange G comigrates with ~50 bp DNA.



Find out more at **thermofisher.com/generuler**

ThermoFisher SCIENTIFIC

COL22981 0918