DNA Molecular Weight Marker II (0.12–23.1 kbp)

λDNA • Hind III digested

Cat. No. 10 236 250 001
50 µg & 1 A260 unit
50 µg (200 µl) for 50 gel lanes

Product overview

Formulation
Solution in 10 mM Tris-HCl, 1 mM EDTA, pH 8

Concentration
250 µg/ml

Size distribution
The bacteriophage lambda (λ) DNA is fragmented in a restriction digestion with Hind III endonuclease.

The digestion reaction results in 8 double-stranded DNA fragments:
23130, 9416, 6557, 4361, 2322, 2027, 564, and 125 as determined by computer analysis of the λDNA sequence.

Application
DNA Molecular Weight Marker II provides accurate sizing of fragments over a broad range of sizes.
The fragments have 5-protruding ends and can be labeled with radioactive nucleotides (e.g., [32P]-dTTP or [32P]-dGTP) by standard filling-in reactions. End-labeling reactions can be performed with a radioactive or nonradioactive dideoxynucleotide (e.g., DIG-11-ddUTP*) and Terminal Transferase*.

Properties
Upon electrophoretic separation, 7 bands are visible (see fig.) when resolved as described below. The smallest fragment resulting from the Hind III digestion (125 base pair) cannot be detected on the gel due to its small size. All fragments are present in equimolar amounts, therefore this smallest band will only be visible on overloaded gels when stained with ethidium bromide.

Typical analysis
The DNA fragment mixture shows the typical pattern with 7 bands in agarose gel electrophoresis, as shown in the figure.

Separation conditions
Apply 1 µg DNA per lane on a 1% Agarose MP gel.

Handling instructions
The 23130 and 4361 bp fragments contain the cos-ends of lambda. These bands are visible after heating the marker at 65°C for 10 minutes, and quickly chilling on ice (see note below). Under standard conditions using ethidium bromide, the 125 bp fragments is visible only on over-loaded agarose gels.

For higher resolution, we recommend to use 0.35 µg per gel well in a 0.6% (or lower) gel with 4 mm thickness. The fragment of 564 base pairs will then be easily visible.

Note: General comment about separation conditions of digested λDNA molecular weight markers concerning the cos-ends of lambda:

Fragments containing the 12 base cos-sites of lambda may anneal upon storage. This leads to a gel pattern where one band is of lower intensity than expected (or absent completely) and a larger fragment has an increased intensity. Denaturation of the cos-sites can be performed immediately before loading the gel, by heating at 65°C for 10 minutes and quick-chilling on ice.

Storage/stability
The unopened vial is stable at −15 to −25°C until the expiration date printed on the label

Note: This product is shipped in dry ice and should be stored at −15 to −25°C until use. Once thawed we recommend further storage at +2 to +8°C. Repeated freezing and thawing should be avoided.

Changes to previous version
Regulatory Disclaimer updated.

Printed Materials
LabFAQs “Find a Quick Solution”
Molecular Weight Markers for Nucleic Acids or available at http://www.roche-applied-science.com/
PRO_INF/applic/mwm.pdf
Restriction Enzyme Ordering Guide
Restriction Enzyme Poster

Contact and Support
To ask questions, solve problems, suggest enhancements or report new applications, please visit our Online Technical Support Site at:

www.roche-applied-science.com/support

To call, write, fax, or email us, visit the Roche Applied Science home page, www.roche-applied-science.com, and select your home country. Country-specific contact information will be displayed. Use the Product Search function to find Pack Inserts and Material Safety Data Sheets.

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