MB058_UG_EN_V2401

NZYDNA Ladder IV, 20-500 bp

Catalogue number	Presentation
MB05801	1 x 250 µL (50 lanes)
MB05802	3 x 250 µL (150 lanes)

Description

NZYDNA Ladder IV is a ready-to-use molecular weight marker, specially designed for easy size determination of small DNA fragments in agarose gels. Containing a dye for direct gel loading, it simplifies handling procedures and saves valuable time. The NZYDNA Ladder IV exhibits a distinct pattern featuring 25 regularly spaced bands, ranging from 20 to 500 base pairs in 20 bp increments.

Shipping & Storage Conditions

This product can be shipped at a range of temperatures from dry ice to room temperature. After delivery, product should be stored at -85°C to -15°C. The product is stable enough to be stored at 2 to 8°C for short-term storage for up to 6 months. Minimize the number of freeze-thaw cycles by aliquoting smaller volumes after first thawing. NZYDNA Ladder IV will remain stable till the expiry date if stored as specified.

Components

	MB05801 (50 lanes)		MB04102 (150 lanes)	
COMPONENT	**TUBES**	**VOLUME**	**TUBES**	**VOLUME**
NZYDNA Ladder IV (50 lanes)	1	250 µL	3	250 µL

Specifications

Size range: 20 bp to 500 bp

Concentration: -

Number of bands: 25

Size of bands: 20 bp, 40 bp, 60 bp, 80 bp, 100 bp, 200 bp, 500 bp

Tracking dye: Bromophenol blue, Xylene cyanol FF

Technical Notes

Agarose: A gel concentration of around 2.5% to 4% agarose is recommended. This range allows for optimal resolution of DNA fragments within this size range during electrophoresis. For best results using our ladder range we recommend using NZYtech agaroses.

Loading Volume: The recommended loading volume is 5 µl/well.

Quality control assays

Nuclease assays

To test for DNase contamination, 1 µg of pNZY28-derivated plasmid DNA are incubated with 15 µL of NZYDNA Ladder IV for 14-16 h at 37 °C. Following incubation, the nucleic acid is visualized on a GreenSafe-stained agarose gel. There must be no visible nicking or cutting of the nucleic acid.

Electrophoretic Pattern (Marker)

5 µL of NZYDNA Ladder IV is loaded onto a 4% (w/v) agarose gel with TAE buffer and separated by electrophoresis to check the intensity and the pattern of bands. It is expected to observe 25 regularly spaced bands, as presented in Figure 1.

Data

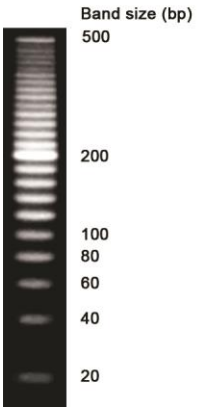

Figure 1. Precisely 5 µL of NZYDNA Ladder IV were electrophoresed in a 4% (w/v) electrophoresis grade agarose (NZYtech, Cat. No.MB027) gel. The gel was buffered with TAE (v/v) and stained with GreenSafe Premium (NZYtech, Cat. No MB13201).

Troubleshooting

Troubleshooting is often a systematic, meticulous process where varying one parameter at a time and evaluating impacts can unveil the root cause of issues. These adjusted suggestions, incorporating a blend of specificity and exploratory approaches, aim to enhance the clarity and actionability of your troubleshooting guide. Should any other technical or procedural aspects require attention, your feedback and additional information will always be welcomed.

INDISTINTIVE LADDER AFTER ELECTROPHORETIC ANALYSIS
• **Ladder is not sinking upon loading**
Vortex briefly before loading to ensure proper mixing.
• **No intercalant dye added**
Ensure incorporation of a DNA intercalating dye solution, such as GreenSafe Premium (NZYtech, MB13201) in the correct amount, or post-stain the gel to visualize DNA after electrophoretic migration.
• **Incorrect agarose concentration**
Ensure that the agarose gel is prepared with a concentration within or close to the recommended range corresponding to the size range of the ladder.
UNEXPECTED BANDS OR SMEARED BANDS AFTER ELECTROPHORETIC ANALYSIS
• **Ladder is degraded**
Inadequate manipulation or storage can promote degradation. Make aliquots to minimize freeze-thaw cycles. Refer to the "Shipping & Storage". Minimize exposure to nucleases, by using sterile tips and storing the ladder at -85°C to -15°C in small-volume aliquots.
• **Ladder is contaminated with other DNA source**
Preserve the vial integrity. Always use sterile tips, preferably with filters, to prevent contamination.