Tel: 1-888-762-2568 Fax: 1-510-783-5386 Email: info@biochain.com

User's Manual and Instructions

100-bp DNA Ladder Plus

Catalog Number: Z6030001-1, Z6030001-2, Z6030001-3, and Z6030001-4

Description

BioChain's 100-bp DNA Ladder Plus is a mixture of double-stranded DNA fragments with confined, accurate sizes. Ten fragments ranging in size from 100 to 1,000 bp in 100-bp increments, supplemented with two bands of 75 and 125 bp, are topped with three additional bands at 1,500, 2000 and 3000 bp. It is a reference marker for estimating the sizes of your DNA fragments ranging from 75 to 3000 bp on agarose or accrylamide gels. It is provided either at a concentration of 0.1 μg/μl that needs 5 volumes to be mixed with 1 volume of an accompanied 6 X DNA Loading Buffer before use, or as a Ready-To-Load format at a concentration of 0.1 μg/μl.

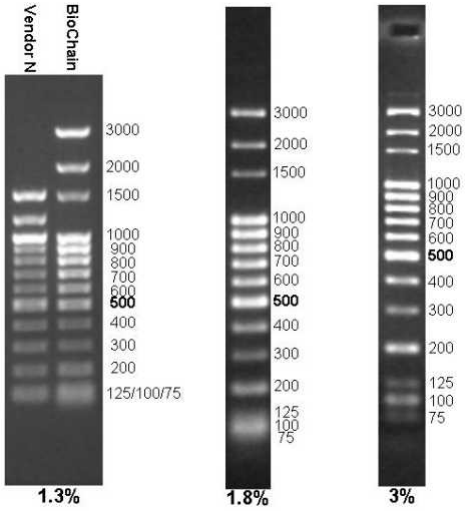

Fig. 1. Quality control of the 100-bp DNA Ladder Plus. 0.5 μg of the 100-bp DNA Ladder Plus was resolved in either a 1.3%, 1.8% or 3% agarose gel and stained with ethidium bromide. The size of each band is indicated on the right side of the gel. The ladder was also compared in parallel on the 1.3% agarose gel with a similar DNA ladder from "vendor N".

Features

- **Accuracy** – Each band resolved on a gel has the exact length as claimed.
- **Easy to remember lengths of the bands**
- **Easily distinguishable patterns with enhanced intensities of certain bands** – The amount of the three biggest fragments of 3000, 2000 and 1500 bp sequentially decreases, resulting in a gradient in intensity on the gel. The bands ranging from 100 to 1000 bp are enhanced in intensities compared to the three bands larger than 1000 bp, and the 100, 500, 600, 700, 800, 900 and 1000 bp fragments are further enhanced in intensity to ensure their visibility on a gel.

Quality Control

Each lot of the ladder has been quantified with a spectrophotometer and checked on a 3% agarose gel to ensure the accuracy and sharpness of the bands (Fig. 1).

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Components

Non-Ready-To-Use format:

Item	Amount	Part No.
100-bp DNA Ladder Plus (0.1 µg/µl)	50 µg (500 µl)	Z6030001-2
6 X DNA loading buffer	100 µl	
100-bp DNA Ladder Plus (0.1 µg/µl)	250 ug (2500 µl)	Z6030001-4
6 X DNA loading buffer	500 µl	

Ready-To-Use format:

Item	Amount	Part No.
100-bp DNA Ladder Plus (0.1 µg/µl)	50 µg (500 µl)	Z6030001-1
100-bp DNA Ladder Plus (0.1 µg/µl)	250 ug (2500 µl)	Z6030001-3

Storage buffer composition: 10 mM Tris-HCl pH 8.0, 1 mM EDTA

Storage and Stability

Store at -20°C for more than one week or at 4°C for less than one week. For best results, always keep the tube of the ladder on ice during loading. The ladder is stable for one year when handled properly.

Usage Recommendation

1) ***Non-Ready-To-Use format:*** Transfer the accompanied 100 µl of 6 X DNA loading buffer to the original tube containing 500 µl of 0.1 µg/µl ladder. For each use, load 6 µl of the diluted ladder/lane (0.5 µg/lane).
2) ***Ready-To-Use format:*** For each use, directly load 5 µl of the ladder/lane (0.5 µg/lane).

Trouble Shooting

Problem 1. Bands look smearing.

Possible cause: The ladder has been degraded.
Solution: Store the ladder at the recommended temperature.

Problem 2. No bands can be visualized after ethidium bromide staining while your sample DNA bands are visible.

Possible cause: The ladder has been completely degraded.
Solution: Store the ladder at the recommended temperature.

Problem 3. Bands are not well separated.

Possible cause: The concentration of the gel is too low.
Solution: Run your DNA sample and the ladder on a more concentrated gel and run the gel until the front blue dye is 1-2 cm away from the bottom of the gel.