Biotium
Glowing Products for Science™

Product Information

Ready-to-Use 1 kb DNA Ladder
Ready-to-Use 100 bp DNA Ladder

Components

Cat. No.	Product	Unit Size	Components
31022	Ready-to-Use 1 kb DNA Ladder	1.5 mL (150 gel lanes)	31022A 1 kb DNA ladder, 20 ng/uL in 1X Loading Buffer
			99962 6X Loading Buffer (1.5 mL)
31032	Ready-to-Use 100 bp DNA Ladder	1.5 mL (150 gel lanes)	31032A 100 bp DNA ladder, 20 ng/uL in 1X Loading Buffer
			99962 6X Loading Buffer (1.5 mL)

Storage
Store at 4°C for 6 months or at -20°C for 24 months.

Product Description
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 contain more DNA to provide internal orientation.

The 100 bp DNA Ladder is suitable for sizing linear double-stranded DNA fragments from 100 bp to 1500 bp. The 500 bp and 1,500 bp bands contain more DNA to provide internal orientation.

The ladders are generated from PCR and restriction enzyme digestion of double stranded DNA. The DNA is purified by phenol extraction and diluted in 1X loading buffer. Approximate amounts of DNA per band per 5 uL (100 ng) ladder are listed in Figure 1 for reference, and are not intended for quantification of unknown DNA samples.

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.

Protocol

The Ready-to-Use DNA Ladders are supplied in a ready-to-load format. There is no need to mix with 6X loading buffer prior to loading onto a gel. For agarose gel electrophoresis, load 100-200 ng of DNA ladder (5-10 uL) per 5 mm lane.

The 6X loading buffer (99962) is included for your convenience to add to your other DNA samples before electrophoresis, mix 1 volume of 6X gel loading buffer with 5 volumes of DNA sample for a final concentration of 1X gel loading buffer.

Biotium also offers 1 kb DNA Ladder in TE Buffer (catalog no. 31039) and 100 bp DNA Ladder in TE buffer (catalog no. 31040). Please note that the DNA Ladders in TE buffer contain a different assortment of band sizes than the Ready-to-Use DNA Ladders (product details can be found at www.biotium.com).

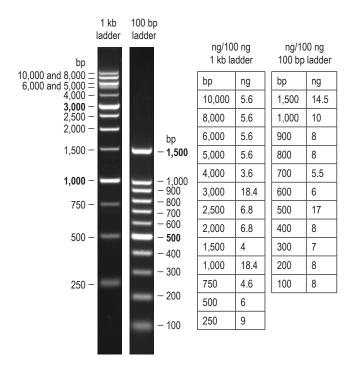| ng/100 ng 1 kb ladder		ng/100 ng 100 bp ladder	
bp	ng	bp	ng
10,000	5.6	1,500	14.5
8,000	5.6	1,000	10
6,000	5.6	900	8
5,000	5.6	800	8
4,000	3.6	700	5.5
3,000	18.4	600	6
2,500	6.8	500	17
2,000	6.8	400	8
1,500	4	300	7
1,000	18.4	200	8
750	4.6	100	8
500	6		
250	9		

Figure 1. 100 ng of 1 kb DNA Ladder or 100 bp DNA Ladder were run on a 1% agarose/TBE gel containing 1X GelRed Nucleic Acid Gel Stain in 1X TBE at 5 V/cm for 90 minutes. Gels were imaged using a UVP GelDoc-It imaging system with ethidium bromide filter. Fragment sizes in base pairs (bp) are shown next to each band. Approximate mass per band is shown for 5 uL (100 ng) DNA ladder in the tables at right.

Related Products

Catalog number	Product Description
31039	1 kb DNA Ladder in TE Buffer
31040	100 bp DNA Ladder in TE Buffer
41001	GelRed™ Nucleic Acid Gel Stain, 3X in water
41003	GelRed™ Nucleic Acid Gel Stain, 10,000X in water
41005	GelGreen™ Nucleic Acid Gel Stain, 10,000X in water
41009	6X GelRed Prestain Buffer with Blue Tracking Dyes
41010	6X GelRed Prestain Buffer with Orange Tracking Dye
41007	PAGE GelGreen Nucleic Acid Gel Stain, 10,000X in water
41008	PAGE GelRed Nucleic Acid Gel Stain, 10,000X in water
41013	PAGE GelGreen Nucleic Acid Gel Stain, 1X in water
41014	PAGE GelRed Nucleic Acid Gel Stain, 1X in water
41006	TBE, 5X
22007	Activated Charcoal Decontamination Bags
31000	EvaGreen® dye, 20X in water
31003	Fast EvaGreen® qPCR Master Mix (200 rxn)
31020	Fast Plus EvaGreen® qPCR Master Mix (200 rxn)
31006	AccuBlue™ High Sensitivity dsDNA Quantitation Kit
31007	AccuBlue™ Broad Range dsDNA Quantitation Kit
31028	AccuClear™ Ultra High Sensitivity dsDNA Quantitation Kit

Please visit our website at www.biotium.com for information on our life science research products, including environmentally friendly EvaGreen® qPCR master mixes, DNA quantitation kits, fluorescent CF™dye antibody conjugates and reactive dyes, apoptosis reagents, fluorescent probes, and kits for cell biology research.

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