For research use only

ISO9001

50bp DNA Ladder Marker, Ready-to-use

Product	Conc.	Cat. No.	Remarks
50bp DNA Ladder Marker, Ready-to-use	500 μl (34 μg)	EBM-1004	Ready-to-use

Description

The 50bp DNA ladder marker is a mixture of specially designed double-stranded DNA fragments for determining the exact size of PCR products and engineered DNA fragments. The 50bp DNA ladder marker consists of 15 DNA fragments ranging in size from 50 to 1,500 bp. For easy size reference on the gel electrophoresis, the 500 bp and 1,000 bp are two to three times more brighter than the other bands. The 50bp DNA ladder marker is supplied in a ready-to-use format. This ladder marker can be stained with ethidium bromide or any other known DNA staining methods.

Storage Buffer

- Marker DNA : 34 μg in 1 ml of 10 mM Tris-HCl, pH8.0, 1 mM EDTA, 5% Glycerol, 0.005% Bromophenol Blue, and 0.005% Xylene Cyanol

Recommended Storage Condition

- -20℃ for 2 year
- 4℃ for 6 months
- Room temperature (20-25℃) for 2 months

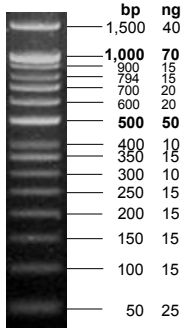
Usage Information

- Concentration : 340 ng/5 μl (34 μg/500 μl)
- Recommended loading : 2-5 μl (100-200 lanes, ready-to-use)
- Range : 50 – 1,500 bp
- Number of bands : 15

Cautions

- Always use the fresh tip to take out marker solution.
  (If you do not, trace amount of contaminated DNases from buffer tank may degrade marker DNA rapidly)
- Don't boil the product.
- Use appropriate % of gels for separation of 50 to 1,500 bp sizes
  (2 to 3% agarose gel is recommended)
- Confirm that the concentration of DNA staining dye is optimal before use.
  (Breakage or suboptimal concentration of ethidium bromide in gel is a main cause of low estimation of marker concentration or your DNA. 5 ng of DNA should be seen in normal condition)
- Loading volume and concentration should be optimized by gel size, well size, and running length.
- Low sized DNA bands can be gradually disappeared as running is progressing.
  (This is because some DNA is getting out from gel to buffer during horizontal electrophoresis, not because the DNA concentration is incorrect. This will be the same for your DNA)

50bp DNA Ladder Marker



5 μl/340 ng/lane ;
2% agarose in 0.5x TBE, stained with ethidium bromide

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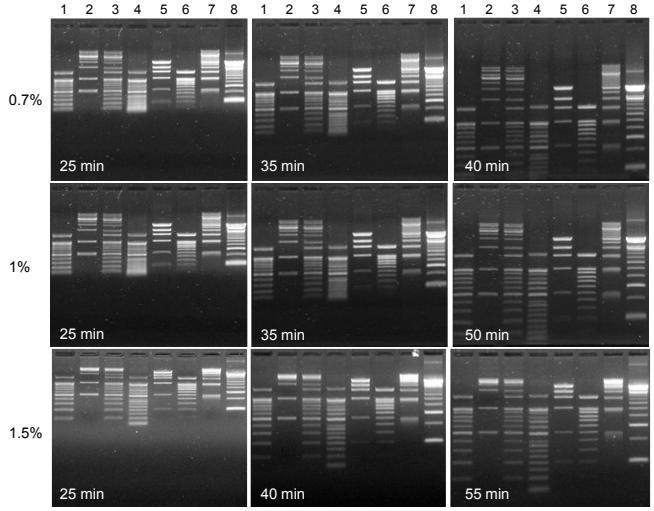
Migration Patterns in Different % of Agarose Gels



1. 100bp DNA Ladder Marker (EBM-1001)
2. 1Kbp DNA Ladder Marker (EBM-1002)
3. 1Kbp Plus 100bp DNA Ladder Marker (EBM-1003)
4. 50bp DNA Ladder Marker (EBM-1004)
5. 1Kbp DNA Mass Ladder Marker (EBM-1009)
6. 100bp DNA Mass Ladder Marker (EBM-1010)
7. 500bp Step Ladder Marker (EBM-1101)
8. 200bp Step Ladder Marker (EBM-1102)

0.7%, 1%, 1.5%
0.5x TBE Gel
100V constant
EtBr staining

Recommended Gel Percentages for Separation of Linear DNA

Agarose Gel, %	Range of Separation, bp	Polyacrylamide Gel, %	Range of Separation, bp
0.5	1,000 - 30,000	3.5	100 - 1,000
0.7	800 - 12,000	5	80 - 500
1	500 - 10,000	8	60 - 400
1.2	400 - 7,000	12	40 - 200
1.4	200 - 4,000	20	5 - 100
2	50 - 2,000		

DNA Size Migration with Sample Loading Dyes

Agarose Concentration, %	Xylene cyanol FF	Bromophenol blue	Orange G
0.7 - 1.7	~4000 bp	~300 bp	~50 bp
2.5 - 3.0	~800 bp	~100 bp	~30 bp

Composition of Gel Electrophoresis Buffers

Buffer	Working Concentration		Stock Concentration (per Liter)		
Tris-acetate (TAE)	1x	20 mM Tris-acetate 1 mM EDTA	20x	Tris base Glacial acetic acid 0.5 M EDTA (pH8.0)	96.9 g 22.84 ml 40 ml
Tris-borate (TBE)	0.5x	45 mM Tris-borate 1 mM EDTA	10x	Tris base Boric acid 0.5 M EDTA (pH8.0)	108 g 55 g 40 ml