For research use only

ISO9001

PCR Marker plus 50bp, Concentrated

Product	Conc.	Cat. No.	Remarks
PCR Marker plus 50bp, Concentrated	250 μl (50 μg)	EBM-1007C	Concentrated type in TE buffer

Description

The PCR marker plus 50bp is a mixture of 13 double-stranded DNA fragments for determining the size of PCR products ranging from 50 to 1,000 bp.

The 50 μg of marker DNA is contained in 250 μl TE buffer. Before start, optimal concentration and loading volume should be empirically determined by users to get the best result. This product is supplied with 1 ml of 6x gel loading buffer to dilute marker DNA. This marker can be stained with ethidium bromide or any other known DNA staining methods.

Storage Buffer

- Marker DNA : 50 μg in 250 μl TE buffer
- 6x Gel loading buffer : 60 mM Tris-HCl, pH8.0, 6 mM EDTA, 30% Glycerol, 0.03% Bromophenol Blue, and 0.03% Xylene Cyanol

Recommended Storage Condition

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

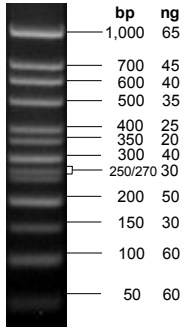
Usage Information

- Recommended loading : 100-500 ng/well according to the gel size, well size, and running length.
- Range : 50 – 1,000 bp
- Number of bands : 13

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 1,000 bp sizes
  (2 to 3% agarose gel or acrylamide 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)

PCR Marker plus 50bp



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

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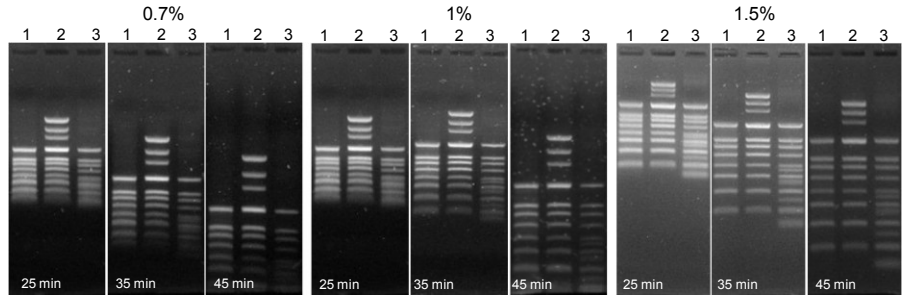
Migration Patterns in Different % of Agarose Gels



1. PCR Marker 0.1-1Kbp (EBM-1005)
2. PCR Marker 0.1-3Kbp (EBM-1006)
3. PCR Marker plus 50bp (EBM-1007)

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