



For research use only

ISO9001

# PCR Marker plus 50bp, Ready-to-use

Product	Conc.	Cat. No.	Remarks
PCR Marker plus 50bp, Ready-to-use	500 µl (50 µg)	EBM-1007	Ready-to-use

### 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 PCR marker plus 50bp 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 : 50 µg in 0.5 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°C for 2 year
- 4°C for 6 months
- Room temperature (20-25°C) for 2 months

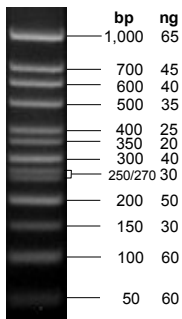
### Usage Information

- Concentration : 500 ng/5 µl (50 µg/500 µl)
- Recommended loading : 2-5 µl (100-200 lanes, ready-to-use)
- Range : 50 – 1,000 bp
- Number of bands : 13

### Cautions

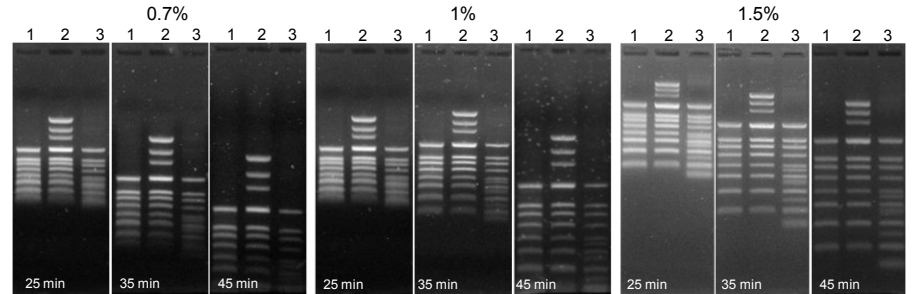
- Always use the fresh tip to take out marker solution.  
(If you do not, trace amount of contaminated DNases from buffer tank may degrade marker DNA rapidly)
- Don't boil the product.
- Use appropriate % of gels for separation of 50 to 1,000 bp sizes  
(2 to 3% agarose gel or acrylamide gel is recommended)
- 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



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

### 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	Tris base	96.9 g
		1 mM EDTA	Glacial acetic acid	22.84 ml
			0.5 M EDTA (pH8.0)	40 ml
Tris-borate (TBE)	0.5x	45 mM Tris-borate	Tris base	108 g
		1 mM EDTA	Boric acid	55 g
			0.5 M EDTA (pH8.0)	40 ml