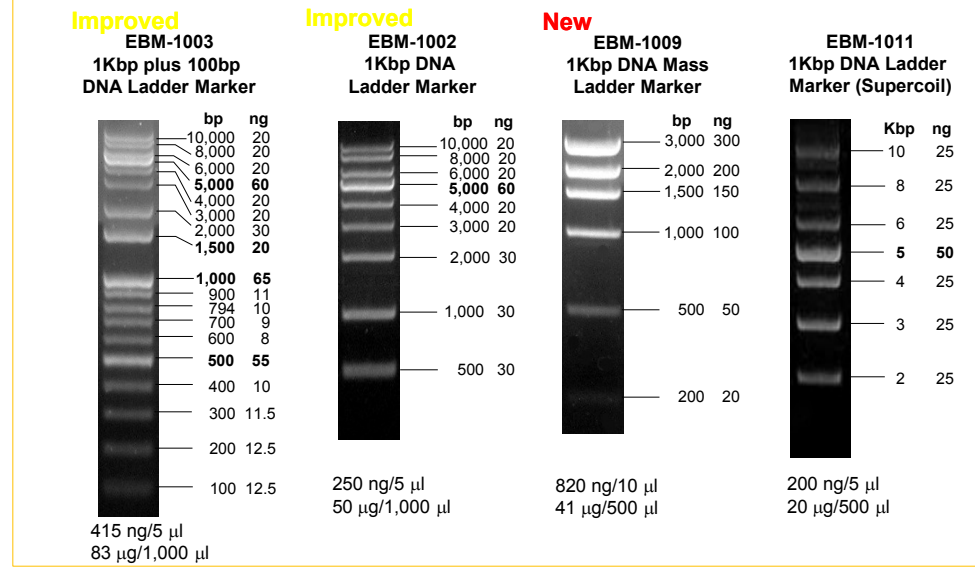
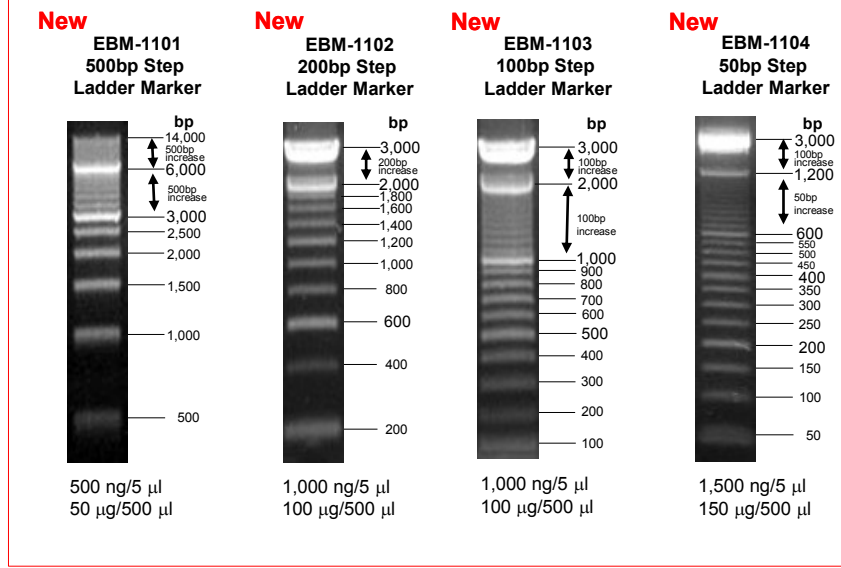


DNA Size Ladder Markers

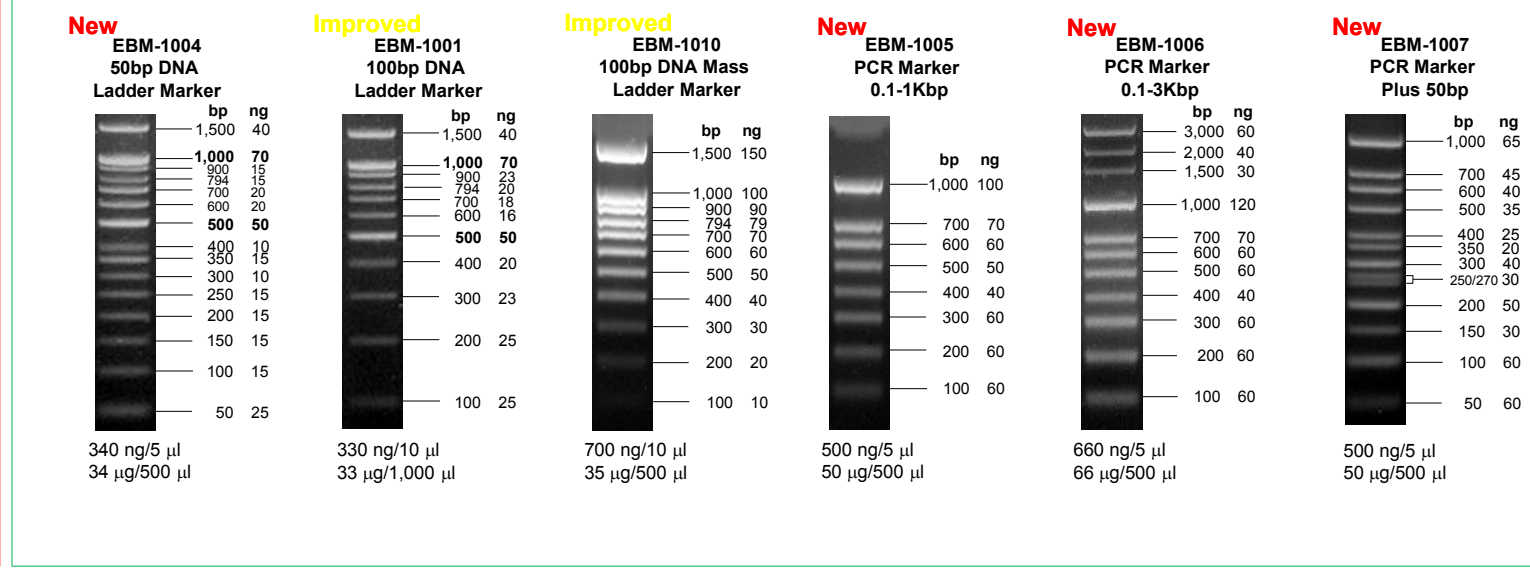
High Range



Step Range



Low Range



Agarose 전기영동에서 좋은 결과를 얻기 위해서는

1. 항상 적정량의 Marker를 로딩
2. Size에 맞는 gel %를 선택하여 사용
3. 새로운 팁의 사용 및 제품 분주 보관 습관
4. Gel과 comb에 묻어 있는 이물질 제거
5. 고품질의 agarose 사용 (고가격이 아님!)
6. Gel buffer와 Running buffer의 조성이 맞는지?
7. Buffer가 오래되어 변성되었는지?
8. DNA 염색에 최적인 농도의 EtBr이 사용되었는지?
9. EtBr이 열이나 빛에 의해 변성되었는지?
10. 샘플과 marker의 농도차이가 너무 많이 나지 않는지?
11. UV 파장대가 적절한지?

Product Information

Products	Size Component	Range	Bands	Type	Conc.	Vol.	Loading	Cat. #	Price	Remarks
PCR Marker 0.1-1kbp	1,000, 700, 600, 500, 400, 300, 200, 100 bp	100-1,000 bp	8	Ready-to-use	50 µg	500 µl	2-5 µl	EBM-1005	60,000	New
				Conc. in TE	50 µg	250 µl	-	EBM-1005C	60,000	New
PCR Marker 0.1-3kbp	3,000, 2,000, 1,500, 1,000, 700, 600, 500, 400, 300, 200, 100 bp	100-3,000 bp	11	Ready-to-use	66 µg	500 µl	2-5 µl	EBM-1006	70,000	New
				Conc. in TE	66 µg	250 µl	-	EBM-1006C	70,000	New
PCR Marker Plus 50bp	1,000, 700, 600, 500, 400, 350, 300, 250/270, 200, 150, 100, 50 bp	50-1,000 bp	13	Ready-to-use	50 µg	500 µl	2-5 µl	EBM-1007	90,000	New
				Conc. in TE	50 µg	250 µl	-	EBM-1007C	90,000	New
50bp DNA Ladder Marker	1,500, 1,000, 900, 800, 700, 600, 500, 400, 350, 300, 250, 200, 150, 100, 50 bp	50-1,500 bp	15	Ready-to-use	34 µg	500 µl	2-5 µl	EBM-1004	100,000	New
				Conc. in TE	34 µg	250 µl	-	EBM-1004C	100,000	New
100bp DNA Ladder Marker	1,500, 1,000, 900, 800, 700, 600, 500, 400, 300, 200, 100 bp	100-1,500 bp	11	Ready-to-use	33 µg	1,000 µl	5-10 µl	EBM-1001	40,000	Improved
				Ready-to-use	33 µg	500 µl	2.5-5 µl	EBM-1001D	40,000	New
				Conc. in TE	33 µg	250 µl	-	EBM-1001C	50,000	New
1kbp DNA Ladder Marker	10, 8, 6, 5, 4, 3, 2, 1, 0.5 kbp	0.5-10 kbp	9	Ready-to-use	50 µg	1,000 µl	5-10 µl	EBM-1002	40,000	Improved
				Conc. in TE	50 µg	250 µl	-	EBM-1002C	50,000	New
				Ready-to-use	83 µg	1,000 µl	5-10 µl	EBM-1003	70,000	Improved
1kbp Plus 100bp DNA Ladder Marker	10, 8, 6, 5, 4, 3, 2, 1.5, 1, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1 kbp	0.1-10 kbp	18	Ready-to-use	83 µg	500 µl	2.5-5 µl	EBM-1003D	70,000	New
				Conc. in TE	83 µg	500 µl	-	EBM-1003C	80,000	New
				Ready-to-use	83 µg	500 µl	-	EBM-1003C	80,000	New
500bp Step Ladder Marker	500 bp step increment	500-14,000 bp	28	Ready-to-use	50 µg	500 µl	2-5 µl	EBM-1101	80,000	New
200bp Step Ladder Marker	200 bp step increment	200-3,000 bp	15	Ready-to-use	100 µg	500 µl	2-5 µl	EBM-1102	100,000	New
100bp Step Ladder Marker	100 bp step increment	100-3,000 bp	30	Ready-to-use	100 µg	500 µl	2-5 µl	EBM-1103	120,000	New
50bp Step Ladder Marker	50 bp step increment	50-3,000 bp	60	Ready-to-use	150 µg	500 µl	2-5 µl	EBM-1104	140,000	New
100bp Mass Ladder Marker	1,500, 1,000, 900, 800, 700, 600, 500, 400, 300, 200, 100 bp	100-1,500 bp	11	Ready-to-use	35 µg	500 µl	5-10 µl	EBM-1010	70,000	Improved
1kbp Mass Ladder Marker	3, 2, 1.5, 1, 0.5, 0.2 kbp	0.2-3 kbp	6	Ready-to-use	41 µg	500 µl	5-10 µl	EBM-1009	70,000	New
1kbp DNA Ladder Marker (Supercoil)	10, 8, 6, 5, 4, 3, 2 kbp	2-10 kbp	7	Ready-to-use	20 µg	500 µl	5-10 µl	EBM-1011	70,000	Continued

- ❖ Ready-to-use products are provided in 1x gel loading buffer, containing glycerol and tracking dyes (Xylene Cyanol FF and Bromophenol Blue)
- ❖ Concentrated products are supplied in 1x TE buffer with 6x gel loading buffer in separate tubes. The optimal concentration to load should be determined by users.
- ❖ These products contain the optimal concentrations of DNA fragments for Ethidium Bromide staining.

Gel Electrophoresis Guide

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

Migration Rates of the Marker Dyes through Polyacrylamide Gels

Non-denaturing Gels			Denaturing Gels		
Polyacrylamide Gel, %	Xylene cyanol FF	Bromophenol blue	Polyacrylamide Gel, %	Xylene cyanol F	Bromophenol blue
3.5	100 bp	460 bp	5	35 bases	130 bases
5	65 bp	260 bp	6	29 bases	106 bases
8	45 bp	160 bp	8	26 bases	76 bases
12	20 bp	70 bp	10	12 bases	55 bases
15	15 bp	60 bp	20	8 bases	28 bases
20	12 bp	45 bp			

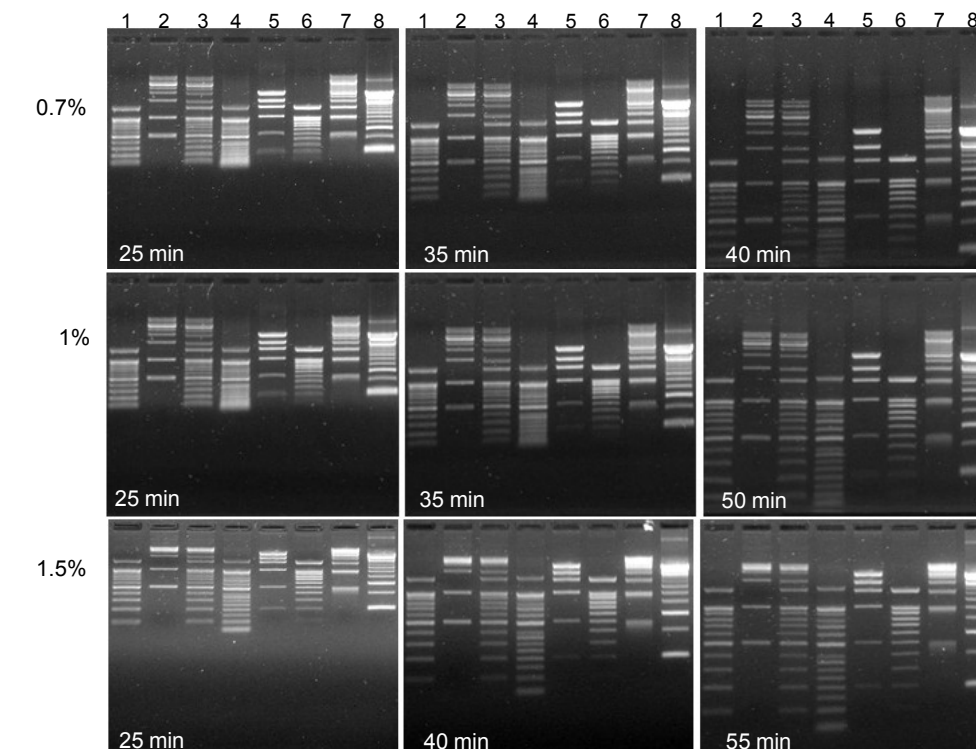
Composition of Gel Electrophoresis Buffers

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)
Tris-borate (TBE) ^A	0.5x	45 mM Tris-borate 1 mM EDTA
	10x	Tris base Boric acid 0.5 M EDTA (pH8.0)

Composition of Gel Loading Buffers

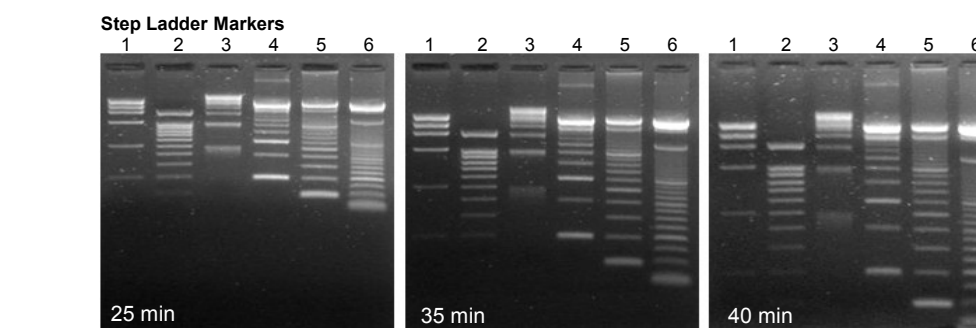
Buffer	6x Gel Loading Buffer	Storage Temp
I	0.25% Bromophenol blue 0.25% Xylene cyanol FF 40% (w/v) sucrose in water	Room temp.
II	0.25% Bromophenol blue 0.25% Xylene cyanol FF 15% (w/v) Ficoll 400 in water	Room temp.
III	0.25% Bromophenol blue 0.25% Xylene cyanol FF 30% (w/v) Glycerol in water	Room temp.

Running Patterns of DNA Markers



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 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 TAE Gel
100V constant
EtBr containing



1. 1kbp Mass Ladder Marker (EBM-1009)
2. PCR Marker 0.1-1kbp (EBM-1005)
3. 500bp Step Ladder Marker (EBM-1101)
4. 200bp Step Ladder Marker (EBM-1102)
5. 100bp Step Ladder Marker (EBM-1103)
6. 50bp Step Ladder Marker (EBM-1104)

1.5%, 0.5x TBE Gel
100V constant
EtBr containing

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