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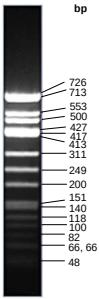
ϕX174 DNA/HinfI Marker

(Ref. 31.001)

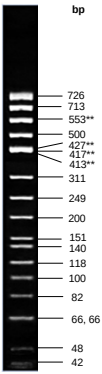
Concentration: 0.5 mg/ml (50 μg) **Store at -20ºC**

Description

The ϕX174 DNA is completely digested with HinfI to yield bands ranging from 24 bp to 726 bp, suitable for use as molecular weight standards for agarose and polyacrylamide gels. The marker is composed to 21 purified individual DNA fragments (in base pairs): 726, 713, 553, 500, 427, 417, 413, 311, 249, 200, 151, 140, 118, 100, 82, 66, 66, 48, 42, 40* and 24*.



ϕX174 DNA/HinfI Marker
0.5μg/lane
2.5% agarose gel
stained with ethidium bromide.



ϕX174 DNA/HinfI Marker
1μg/lane
5% polyacrylamide gel
stained with ethidium bromide.

*The shortest fragments (40 and 24 bp) are not visible in standard electrophoresis
**The 553, 427, 417 and 413 bp fragments migrate anomalously on polyacrilamyde gels

Storage buffer (TE buffer)

10 mM Tris-HCl (pH 7.6), 1 mM EDTA

Storage temperature

Store at -20ºC. For frequent use divide in aliquots to avoid multiple freeze/thaw cycles, or store at 4ºC in the presence of loading buffer.

Protocol

1- Prepare loading mixture (for the 5 mm gel lane[+]):

	Agarose Gels	Polyacrylamide Gels
• DNA Marker (0.5-1 µg)	1 µl	2 µl
• 5X Loading Dye	1 µl	0.5 µl
• Distilled water	3 µl	-
Final volume	5 µl	2.5 µl

2- Mix gently

3- Do not heat

4- Load onto the gel

5- Visualise DNA by staining with ethidium bromide or with SYBR® Green I

[+]The mixture should be scaled up or down, depending on the width of the gel. Use 0.1-0.2 µg of DNA marker/mm of lane.

The ϕX174 DNA/HinfI Marker was not designed for precise quantification of DNA mass, but can be used for semi-quantification (see Table 1). For quantification, adjust the concentration of the sample to equalize it approximately with the amount of DNA in the nearest band of the ladder.

Table 1. Percentage and mass of individual fragments (for 0.5 µg ϕX174 DNA/HinfI Marker)

Fragment	Size	%	mass (ng/0.5µg)
1	726	13.5	67.4
2	713	13.2	66.2
3	553	10.3	51.3
4	500	9.3	46.4
5	427	7.9	39.6
6	417	7.7	38.7
7	413	7.7	38.3
8	311	5.8	28.9
9	249	4.6	23.1
10	200	3.7	18.6
11	151	2.8	14.0
12	140	2.6	13.0
13	118	2.2	11.0
14	100	1.9	9.3
15	82	1.5	7.6
16	66,66	1.2, 1.2	6.1, 6.1
17	48	0.9	4.5

Notice to users

Research and *in vitro* use only.