

Agarose and Polyacrylamide Gels

Dye Migration: Polyacrylamide Denaturing Gels.

Dyes will migrate to the same point as double-stranded DNA of the indicated size in a denaturing polyacrylamide gel.

Gel %	Bromophenol Blue	Xylene Cyanol
5.0	35bp	140bp
6.0	26bp	106bp
8.0	19bp	75bp
10.0	12bp	55bp
20.0	8bp	28bp

Adapted from Sambrook, J., Fritsch, E.F. and Maniatis, T. (1989) In: *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

Dye Migration: Polyacrylamide Nondenaturing Gels.

Dyes will migrate to the same point as double-stranded DNA of the indicated size in a nondenaturing polyacrylamide gel.

Gel %	Bromophenol Blue	Xylene Cyanol
3.5	100bp	460bp
5.0	65bp	260bp
8.0	45bp	160bp
12.0	20bp	70bp
15.0	15bp	60bp
20.0	12bp	45bp

Adapted from Sambrook, J., Fritsch, E.F. and Maniatis, T. (1989) In: *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

Dye Migration in 0.5–1.4% Agarose Gels.

Dyes will migrate to the same point as double-stranded DNA of the indicated size in an agarose gel. Sizes are approximate.

Gel	Size
GoTaq® blue dye	4kb
Xylene cyanol FF	4kb
Bromophenol Blue	300bp
Orange G	50bp
GoTaq® yellow dye	10bp

Some information adapted from Sambrook, J., Fritsch, E.F. and Maniatis, T. (1989) In: *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

Gel Percentages: Resolution of Linear DNA on Agarose Gels.

Recommended % Agarose	Optimum Resolution for Linear DNA (Size of fragments in base pairs)
0.5	1,000–30,000
0.7	800–12,000
1.0	500–10,000
1.2	400–7,000
1.5	200–3,000
2.0	50–2,000

Gel Percentages: Resolution of Proteins on Polyacrylamide Gels.

Recommended % Acrylamide	Protein Size Range
8	40–200kDa
10	21–100kDa
12	10–40kDa

Dalton (Da) is an alternate name for the atomic mass unit, and kilodalton (kDa) is 1,000 daltons. Thus a peptide with a mass of 64kDa has a molecular weight of 64,000 grams per mole.