**TAE**

Prepare a 50X stock solution in 1 L of dH2O:

242 g of Tris base (or Trizma base)

57.1 mL of acetic acid (glacial)

100 mL of 0.5 M EDTA (pH 8.0)

Fill up the volume to 1 L by dH2O.

The 1X working solution is 40 mM Tris-acetate/1 mM EDTA.

**TBE buffer**

Prepare a 5X stock solution in 1 L of dH2O:

54 g of Tris base (or Trizma base)

27.5 g of boric acid

20 mL of 0.5 M EDTA (pH 8.0)

Fill up the volume to 1 L by dH2O.

The 0.5X working solution is 45 mM Tris-borate/1 mM EDTA.

TBE is usually made and stored as a 5X or 10X stock solution. The pH of the concentrated stock buffer should be ~8.3. Dilute the concentrated stock buffer just before use and make the gel solution and the electrophoresis buffer from the same concentrated stock solution. Some investigators prefer to use more concentrated stock solutions of TBE (10X as opposed to 5X). However, 5X stock solution is more stable because the solutes do not precipitate during storage. Passing the 5X or 10X buffer stocks through a 0.22-μm filter can prevent or delay formation of precipitates.

**TE Buffer (1×)**

Tris-Cl (pH 7.5) 10 mM

Dissolve g of Trizma base in dH2O. Adjust

EDTA (pH 8.0)  1 mM

Fill up the volume to 100 mL by dH2O.

Sterilize the buffer by autoclaving for 20 min at 15 psi (1.05 kg/cm2) on liquid cycle. Store at room temperature.

**0.5 M (pH 8.0) EDTA**

EDTA (ethylenediamenetetraacetic acid)

NaOH

**To prepare EDTA at 0.5 M (pH 8.0):** Add 186.1 g of disodium EDTA•2H2O to 800 mL of dH2O. Stir vigorously on a magnetic stirrer. Adjust the pH to 8.0 with NaOH (~20 g of NaOH pellets). Dispense into aliquots and sterilize by autoclaving. The disodium salt of EDTA will not go into solution until the pH of the solution is adjusted to ~8.0 by the addition of NaOH.

**DNA gel-loading dye (10X)**

3.9 mL glycerol

500 μL 10% (w/v) SDS

200 μL 0.5 M EDTA

0.025 g bromophenol blue

0.025 g xylene cyanol

Bring to 10 mL total volume with dH2O. Pass through 0.44-micron filter. Store at -20°C.