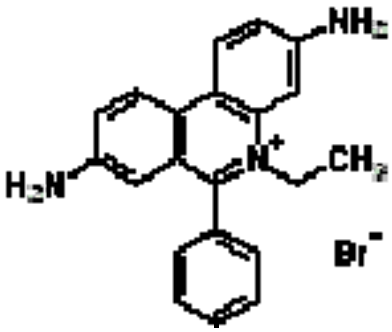
Ethidium Bromide: from Sigma Aldrich
http://www.sigmaaldrich.com/catalog/search/ProductDetail/ALDRICH/E8751

Synonym: 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide, EtBr, Homidium bromide




Molecular Formula: $C_{21}H_{20}BrN_3$
Molecular Weight: 394.31
CAS Number:1239-45-8
Beilstein Registry Number :3642536
EG/EC Number: 2149846
MDL number: MFCD00011724
Application

Ethidium bromide (EtBr) is the most commonly used nucleic acid stain for PAGE or agarose gel electrophoresis and is available in several forms including a 10 mg/ml solution, 10 or 100 mg tablets or as a powder. The tablets and the solution help to decrease exposure to a potentially toxic chemical. Ethidium bromide intercalates double-stranded DNA and RNA. The fluorescence of EtBr increases 21-fold upon binding to double-stranded RNA and 25-fold on binding double-stranded DNA so that destaining the background is not necessary with a low stain concentration (10 µg/ml). Ethidium bromide has been used in a number of fluorimetric assays for nucleic acids. It has been shown to bind to single-stranded DNA (although not as strongly) and triple-stranded DNA.

Biochem/physiol Actions
Ethidium Bromide is a nucleic acid intercalating agent and frameshift mutagen. It can also be used in conjunction with acridine orange to differentiate between viable, apoptotic and necrotic cells.

Reconstitution
For staining a gel after electrophoresis, dilute a sample of the stock solution to 0.5 µg/ml with water and incubate the gel for 15-30 min. Destaining is usually not needed but can be carried out in water for 15 min if decreased background is necessary. The DNA bands can then be detected on a UV light box (254 nm wavelength). Ethidium bromide can also be incorporated into the gel and running buffer at 0.5 µg/ml and visualized immediately after electrophoresis.