

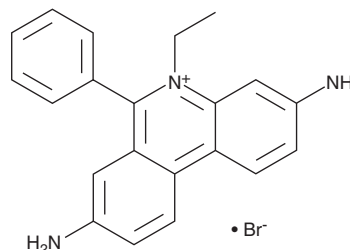
# PRODUCT INFORMATION



## Ethidium (bromide)

Item No. 39132

**CAS Registry No.:** 1239-45-8  
**Formal Name:** 3,8-diamino-5-ethyl-6-phenylphenanthridinium, monobromide  
**Synonyms:** Dromilac, Homidium Bromide  
**MF:** C<sub>21</sub>H<sub>20</sub>N<sub>3</sub> • Br  
**FW:** 394.3  
**Purity:** ≥95%  
**Ex./Em. Max:** 492/517 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Ethidium (bromide) is supplied as a solid. A stock solution may be made by dissolving the ethidium (bromide) in the solvent of choice, which should be purged with an inert gas. Ethidium (bromide) is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml.

### Description

Ethidium is a phenanthridine fluorescent dye and DNA intercalator.<sup>1,2</sup> It displays an emission at 595 nm upon excitation at 525 nm.<sup>1</sup> Ethidium inhibits the DNA-unwinding and ATPase activities of *P. falciparum* DNA helicase (IC<sub>50</sub>s = 1.5 and 2.5 μM, respectively) and is active against *P. falciparum* *in vitro*.<sup>3</sup> It completely inhibits *E. coli* RNA polymerase when used at a concentration of 100 μmol/ml and is active against *Mycoplasma* when used at concentrations ranging from 0.5 to 8 μg/ml.<sup>4,5</sup> Ethidium (8 mg/kg) increases lifespan in 6C3HED-OG and L5178Y murine lymphoma models.<sup>6</sup> It has commonly been used to stain DNA in agarose gel electrophoresis and in displacement assays to determine compound binding to DNA.<sup>7,8</sup>

### References

1. Qiao, C., Bi, S., Sun, Y., *et al.* Study of interactions of anthraquinones with DNA using ethidium bromide as a fluorescence probe. *Spectrochim. Acta A Mol. Biomol. Spectrosc.* **70(1)**, 136-143 (2008).
2. Meyer-Almes, F.J. and Porschke, D. Mechanism of intercalation into the DNA double helix by ethidium. *Biochemistry* **32(16)**, 4246-4253 (1993).
3. Pradhan, A. and Tuteja, R. Plasmodium falciparum DNA helicase 60. dsRNA- and antibody-mediated inhibition of malaria parasite growth and downregulation of its enzyme activities by DNA-interacting compounds. *FEBS J.* **273(15)**, 3545-3556 (2006).
4. Ward, D.C., Reich, E., and Goldberg, I.H. Base specificity in the interaction of polynucleotides with antibiotic drugs. *Science* **149(3689)**, 1259-1263 (1965).
5. Newnham, A.G. and Chu, H.P. An *in vitro* comparison of the effect of some antibacterial, antifungal and antiprotozoal agents on various strains of *Mycoplasma* (pleuropneumonia-like organisms: P.P.L.O.). *J. Hyg. (Lond)* **63(1)**, 1-23 (1965).
6. Nishiwaki, H., Miura, M., Imai, K., *et al.* Experimental studies on the antitumor effect of ethidium bromide and related substances. *Cancer Res.* **34(10)**, 2699-2703 (1974).
7. Wahl, G.M., Stern, M., and Stark, G.R. Efficient transfer of large DNA fragments from agarose gels to diazobenzyloxymethyl-paper and rapid hybridization by using dextran sulfate. *Proc. Natl. Acad. Sci. USA* **76(8)**, 3683-3687 (1979).
8. Burres, N.S., Frigo, A., Rasmussen, R.R., *et al.* A colorimetric microassay for the detection of agents that interact with DNA. *J. Nat. Prod.* **55(11)**, 1582-1587 (1992).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM