Stains-All

Cat. No.: HY-D0987

CAS No.: 7423-31-6

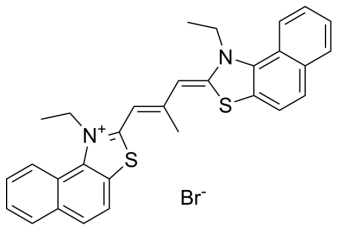
Molecular Formula: $C_{30}H_{27}BrN_2S_2$

Molecular Weight: 559.58

Target: Calmodulin

Pathway: Membrane Transporter/Ion Channel

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 8.33 mg/mL (14.89 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7871 mL	8.9353 mL	17.8705 mL
	5 mM	0.3574 mL	1.7871 mL	3.5741 mL
	10 mM	0.1787 mL	0.8935 mL	1.7871 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Stains-All, a cationic carbocyanine dye, is a convenient probe to study the structural features of the individual calcium-binding sites of calmodulin (CaM) and related calcium-binding proteins (CaBP)[1][2].

In Vitro

Almost all of the proteins found in skeletal muscle extracts, including the Ca^{2+}+Mg^{2+}-ATPase and the 53,000-Da glycoprotein of the sarcoplasmic reticulum, are stained red or pink with Stains-all. Calsequestrin, the 1 60,000-Da glycoprotein, and 170,000-Da protein are stained blue with Stains-all. The ratio of Stains-all staining (measured at 615 nm) to that of Coomassie blue staining (measured at 575 nm) is 1.3 for calsequestrin, 2.0 for calmodulin, 1.4 for troponin C, and 2.2 for S-100. Therefore, in addition to differentially staining these Ca^{2+}-binding proteins blue, Stains-all is a more sensitive stain for these Ca^{2+}-binding proteins than is Coomassie blue[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [1]

Slab gels are fixed overnight with 25% isopropyl alcohol and washed exhaustively in 25% isopropyl alcohol to remove SDS.

The gels are then stained in the dark for at least 48 h with 0.0025% Stains-all, 25% isopropyl alcohol, 7.5% formamide, and 30 mM Tris base, pH 8.8. The interaction of Stains-all with various Ca^{2+}-binding proteins is also studied in aqueous solution. The standard solution contains 10 mM Tris base, pH 8.8, 0.001% Stains-all, and 0.1% formamide. Ca^{2+}-binding proteins (0.5 to 12 μg) are added to 1.0 mL of solution and then incubated at room temperature in the dark for 30 min. The absorbance at 600 nm is then measured against a control solution, containing no protein, using a spectrophotometer[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Gruber HE, et al. Application of stains-all for demarcation of cement lines in methacrylate embedded bone. Biotech Histochem. 1991;66(4):181-184.

[2]. Sharma Y, et al. Studies on the interaction of the dye, stains-all, with individual calcium-binding domains of calmodulin. FEBS Lett. 1993;326(1-3):59-64.

[3]. Campbell KP, et al. Staining of the Ca2+-binding proteins, calsequestrin, calmodulin, troponin C, and S-100, with the cationic carbocyanine dye "Stains-all". J Biol Chem. 1983;258(18):11267-11273.

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