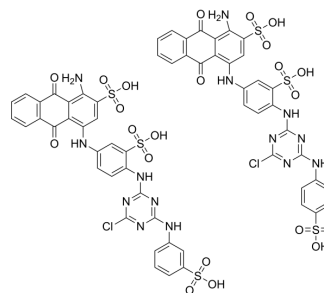


## Procion Blue HB

<b>Cat. No.:</b>	HY-D0965
<b>CAS No.:</b>	12236-82-7
<b>Molecular Formula:</b>	C <sub>29</sub> H <sub>20</sub> ClN <sub>7</sub> O <sub>11</sub> S <sub>3</sub>
<b>Molecular Weight:</b>	774
<b>Target:</b>	Fluorescent Dye
<b>Pathway:</b>	Others
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 110 mg/mL (142.12 mM)  
 H<sub>2</sub>O : 10 mg/mL (12.92 mM; Need ultrasonic)  
 Ethanol : < 1 mg/mL (insoluble)  
 \* "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		1.2920 mL	6.4599 mL	12.9199 mL
	5 mM		0.2584 mL	1.2920 mL	2.5840 mL
	10 mM		0.1292 mL	0.6460 mL	1.2920 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Procion Blue HB (Reactive Blue 2) is a purinergic antagonist.

#### In Vitro

Reactive Blue 2 is used as an ATP receptor antagonist and induces Ca<sup>2+</sup> oscillations in HeLa cells. Reactive Blue 2 enhances a Ca<sup>2+</sup> response to histamine that is linked to the PLC cascade. Reactive Blue 2 may activate the PLC cascade in an extracellular Ca<sup>2+</sup>-dependent manner and induce Ca<sup>2+</sup> oscillations<sup>[1]</sup>. The application of Reactive Blue 2 increases K<sup>+</sup> secretion in a dose-dependent manner, and this increase is characterized as a peak followed by a partial relaxation to a steady-state. Reactive Blue 2 has antagonistic activities at P2Y<sub>4</sub>, and the antagonist potency at P2Y<sub>4</sub> paralleled the potency of K<sup>+</sup> secretion<sup>[2]</sup>. The anthraquinone dye reactive blue 2 is found to be a potent inhibitor of a protein kinase isolated and purified from thylakoids. The mode of inhibition is noncompetitive, with a K<sub>i</sub> of 8 μM for the membrane-bound kinase, and 6 microM for the purified kinase. The inhibitor does not modify the substrate preference of the endogenous kinase and could be removed from the membrane by washing<sup>[3]</sup>. Reactive blue 2 selectively inhibits responses mediated via the P2ypurinoceptor, at least within a limited concentration range. In preparations where the tone has been raised with noradrenaline, ATP and 2-methylthio ATP, but not α,β-methylene ATP, produce relaxations of the vessel. These relaxations are inhibited in the presence of reactive blue 2<sup>[4]</sup>. Reactive blue 2, at concentrations of 0.3-10 μM blocks the ATP-induced

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oscillation in a concentration-dependent manner<sup>[5]</sup>.

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

## REFERENCES

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[1]. Okuda A, et al. Reactive blue 2 induces calcium oscillations in HeLa cells. *Jpn J Physiol.* 2001 Jun;51(3):389-93.

[2]. Lee JH, et al. Reactive blue 2, an antagonist of rat P2Y4, increases K<sup>+</sup> secretion in rat cochlea stria marginal cells. *Hear Res.* 2006 Sep;219(1-2):66-73.

[3]. Coughlan SJ, et al. Reactive blue 2 is a potent inhibitor of a thylakoid protein kinase. *Eur J Biochem.* 1991 Apr 23;197(2):467-71.

[4]. Burnstock G, et al. P2-purinoceptors of two subtypes in the rabbit mesenteric artery: reactive blue 2 selectively inhibits responses mediated via the P2y-but not the P2x-purinoceptor. *Br J Pharmacol.* 1987 Feb;90(2):383-91.

[5]. Uneyama H, et al. Suramin and reactive blue 2 are antagonists for a newly identified purinoceptor on rat megakaryocyte. *Br J Pharmacol.* 1994 Jan;111(1):245-9.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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