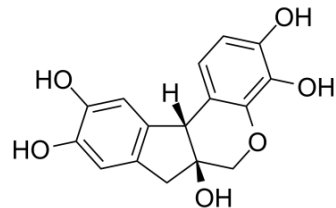


Hematoxylin

Cat. No.:	HY-N0116		
CAS No.:	517-28-2		
Molecular Formula:	C ₁₆ H ₁₄ O ₆		
Molecular Weight:	302.28		
Target:	Amyloid-β		
Pathway:	Neuronal Signaling		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (165.41 mM; Need ultrasonic)
 H₂O : 6.67 mg/mL (22.07 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		3.3082 mL	16.5410 mL	33.0819 mL
	5 mM		0.6616 mL	3.3082 mL	6.6164 mL
	10 mM		0.3308 mL	1.6541 mL	3.3082 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Hematoxylin (Natural Black 1), a naturally occurring flavonoid compound derived from the logwood tree, Haematoxylon campechianum. Hematoxylin is a nuclear stain in histology and is also a potent Aβ₄₂ fibrillogenesis inhibitor with an IC₅₀ of 1.6 μM.

IC₅₀ & Target

IC₅₀: 1.6 μM (Aβ₄₂ fibrillogenesis)^[2]

In Vitro

When exposed to air, Hematoxylin is oxidized to reddish brown hematein. When oxidized to its hematein form and combined with a mordant, usually a metal salt, Hematoxylin stains tissue sections a deep blue to black color depending on the staining method. By itself, Hematoxylin is also amphoteric in its hematein form; it is red at acid pH and blue at alkaline pH. Differentiation following Hematoxylin staining removes nonspecific staining^[1].

Hematoxylin treatment greatly alleviates A β 42-induced cytotoxicity in SH-SY5Y cells. Hematoxylin is a potential agent against A β fibrillogenesis and cytotoxicity^[2].

The Hematoxylin and Eosin (H&E) stained tissue section is the cornerstone of anatomical pathology diagnosis. The H&E procedure stains the nucleus and cytoplasm contrasting colors to readily differentiate cellular components^[3].

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

In Vivo

Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).

The method of H&E staining^[4]:

1. Place the glass slides that hold the paraffin sections in staining racks. Clear the paraffin from the samples in three changes of xylene for 2 min per change.
 2. Hydrate the samples as follows.
 - i. Transfer the slides through three changes of 100% ethanol for 2 min per change.
 - ii. Transfer to 95% ethanol for 2 min.
 - iii. Transfer to 70% ethanol for 2 min.
 - iv. Rinse the slides in running tap water at room temperature for at least 2 min.
 3. Stain the samples in Hematoxylin solution for 3 min.
 4. Place the slides under running tap water at room temperature for at least 5 min.
 5. Stain the samples in working eosin Y solution for 2 min.
 6. Dehydrate the samples as follows.
 - i. Dip the slides in 95% ethanol about 20 times.
 - ii. Transfer to 95% ethanol for 2 min.
 - iii. Transfer through two changes of 100% ethanol for 2 min per change.
 7. Clear the samples in three changes of xylene for 2 min per change.
 8. Place a drop of Permount over the tissue on each slide and add a coverslip. View the slides using a microscope.
- MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Anticancer Res. 2017 Aug;37(8):4475-4481.

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REFERENCES

- [1]. M Titford. The long history of hematoxylin. Biotech Histochem. Mar-Apr 2005;80(2):73-8.
- [2]. Yilong Tu, et al. Hematoxylin Inhibits Amyloid β -Protein Fibrillation and Alleviates Amyloid-Induced Cytotoxicity. J Phys Chem B. 2016 Nov 10;120(44):11360-11368.
- [3]. Ada T Feldman, et al. Tissue processing and hematoxylin and eosin staining. Methods Mol Biol. 2014;1180:31-43.
- [4]. Robert D Cardiff, et al. Manual hematoxylin and eosin staining of mouse tissue sections. Cold Spring Harb Protoc. 2014 Jun 2;2014(6):655-8.

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

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