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Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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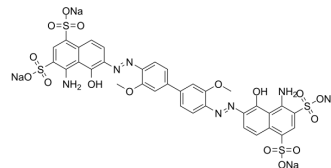
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Direct Blue 1

Cat. No.:	HY-D0939
CAS No.:	2610-05-1
Molecular Formula:	C ₃₄ H ₂₄ N ₆ Na ₄ O ₁₆ S ₄
Molecular Weight:	992.8
Target:	Amyloid-β; NF-κB
Pathway:	Neuronal Signaling; NF-κB
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 : 125 mg/mL (125.91 mM; Need ultrasonic)
H₂O : 2.08 mg/mL (2.10 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.0073 mL	5.0363 mL	10.0725 mL
	5 mM	0.2015 mL	1.0073 mL	2.0145 mL
	10 mM	0.1007 mL	0.5036 mL	1.0073 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 5 mg/mL (5.04 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 4.17 mg/mL (4.20 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 4.17 mg/mL (4.20 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Direct Blue 1 (Chicago Sky Blue 6B) is a complex dye for background autofluorescence in immunofluorescence histochemistry. Direct Blue 1 is a potent and competitive VGLUT inhibitor. Direct Blue 1 can inhibit the Aβ-binding small molecule PrP ligand. Direct Blue 1 has anti-inflammatory activity^{[1][2][3][4][5][6]}.

In Vitro

Direct Blue 1 (0.1, 1, 10 μM, 9 days) can bind α-synuclein and inhibit its aggregation, thus blocking the proliferation of α-synuclein between SH-SY5Y cells^[4].
Direct Blue 1 (5, 10, 20 μM, 48 h) inhibits RANKL-induced osteoclasts and bone resorption in vitro by inhibiting NF-κB

signaling and promoting proteasome-mediated MIF degradation^[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay^[5]

Cell Line:	BMMs
Concentration:	0.75, 1.5, 3.125, 6.25, 12.5, 25, 50, 100, 200 μ M
Incubation Time:	48, 96 h
Result:	Exhibited no cytotoxic effect at concentrations of 0-50 μ M.

Western Blot Analysis^[5]

Cell Line:	BMMs
Concentration:	5, 10, 20 μ M
Incubation Time:	0, 1, 3, 5 days
Result:	Attenuated the protein expression of both c-Fos and NFATc1. Decreased the protein expression of MIF.

In Vivo

Direct Blue 1 (2 or 8 mg/kg, subcutaneously, for 4 weeks) alleviates inflammatory bone destruction and osteoporosis induced by titanium particles in mice^[5].

Direct Blue 1 (7.5 μ g, intraventricular injection) alleviates methamphetamine-induced hyperactivity and behavioral sensitization in mice^[6].

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

Animal Model:	OVX-induced osteoporosis mice model ^[5]
Dosage:	2, 8 m/kg
Administration:	s.c.
Result:	Inhibited the elevated osteoclast formation and bone resorption.

Animal Model:	METH-induced hyperactivity in mice ^[6]
Dosage:	7.5 μ g
Administration:	i.c.v.
Result:	Reduced acute hyperactivity and attenuated expression of sensitization.

REFERENCES

- [1]. Min JO, et al. Chicago sky blue 6B inhibits α -synuclein aggregation and propagation. *Mol Brain*. 2022 Mar 28;15(1):27.
- [2]. Jin K, et al. Chicago sky blue 6B (CSB6B), an allosteric inhibitor of macrophage migration inhibitory factor (MIF), suppresses osteoclastogenesis and promotes osteogenesis through the inhibition of the NF- κ B signaling pathway. *Biochem Pharmacol*. 2021 Oct;192:114734.
- [3]. He Z, et al. Chicago sky blue 6B, a vesicular glutamate transporters inhibitor, attenuates methamphetamine-induced hyperactivity and behavioral sensitization in mice. *Behav Brain Res*. 2013 Feb 15;239:172-6.
- [4]. Lodha N, Poojary SA. A Novel Contrast Stain for the Rapid Diagnosis of Pityriasis Versicolor: A Comparison of Chicago Sky Blue 6B Stain, Potassium Hydroxide Mount

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[5]. Yu G, et al. The antinociceptive effects of intracerebroventricular administration of Chicago sky blue 6B, a vesicular glutamate transporter inhibitor. Behav Pharmacol. 2013;24(8):653-658.

[6]. Risse E, et al. Identification of a Compound That Disrupts Binding of Amyloid- β to the Prion Protein Using a Novel Fluorescence-based Assay. J Biol Chem. 2015;290(27):17020-17028.

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

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