Proflavine hemisulfate

Cat. No.: HY-B0883

CAS No.: 1811-28-5

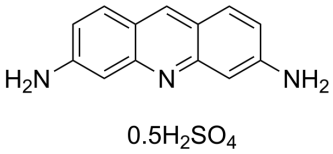
Molecular Formula: $C_{13}H_{11}N_3.1/2H_2SO_4$

Molecular Weight: 258.28

Target: Bacterial; Autophagy; Potassium Channel

Pathway: Anti-infection; Autophagy; 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 : 16.67 mg/mL (64.54 mM; ultrasonic and warming and heat to 60°C)
H_2O : ≥ 5 mg/mL (19.36 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.8718 mL	19.3588 mL	38.7177 mL
5 mM	0.7744 mL	3.8718 mL	7.7435 mL
10 mM	0.3872 mL	1.9359 mL	3.8718 mL

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

BIOLOGICAL ACTIVITY

Description

Proflavine hemisulfate, an acridine dye, is a known DNA intercalating agent. Anti-microbial agent[1]. Proflavine hemisulfate behaves as a pore blocker for $K_{ir}3.2$. Proflavine hemisulfate is a potential lead compound for $K_{ir}3.2$-associated neurological diseases[2].

In Vitro

Proflavine (0.1-10 μM; 24 hours) inhibits the growth of $K_{ir}3.2$-transformant cells and $K_{ir}3.2$ activity in a concentration-dependent manner[1].
Proflavine (300 μM) progressively reduces the current amplitude of $K_{ir}3.2$ mutant to 27.7±4.3% of the control[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	$K_{ir}3.2^*$-transformant BYT123 cells
Concentration:	0.1, 1, and 10 μM

Incubation Time:	24 hours
Result:	Dose-dependent inhibition of the growth of $K_{ir}3.2^{*}$-transformant cells. Attenuated the growth of $K_{ir}3.2^{*}$-transformant cells without affecting the growth of control cells.

In Vivo

The concentrations of Proflavine (20 mg/kg) in whole blood after intravenous injection decreased rapidly at the beginning and remained stable from around 30 min after dosing[3].

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Animal Model:	Adult male Sprague Dawley rats (weighing approximately 200 g)[3]
Dosage:	20 mg/kg (Pharmacokinetic Analysis)
Administration:	Intravenous injection; 2, 4, 5, 10, 15, 20, 25, and 30 min after dosing
Result:	Concentration decreased rapidly from whole blood in the first 5 min after dosing, followed by a slower decrease.

CUSTOMER VALIDATION

- EMBO Rep. 2022 Apr 11;e53932.

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REFERENCES

[1]. Hitoshi Kawada, et al. Isolation of proflavine as a blocker of G protein-gated inward rectifier potassium channels by a cell growth-based screening system. Neuropharmacology. 2016 Oct;109:18-28.

[2]. Mansour K.Gatasheh, et al. Proflavine an acridine DNA intercalating agent and strong antimicrobial possessing potential properties of carcinogen. Karbala International Journal of Modern Science. 2017 Dec, 3(4): 272-278.

[3]. Jiaxin Chen, et al. Determination of proflavine in rat whole blood without sample pretreatment by laser desorption postionization mass spectrometry. Anal Bioanal Chem. 2017 Apr;409(11):2813-2819.

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