BpV(HOpic)

Cat. No.: HY-128693

CAS No.: 722494-26-0

Molecular Formula: $C_6H_4K_2NO_8V$

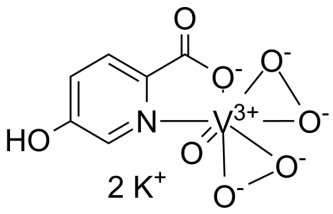
Molecular Weight: 347.24

Target: PTEN

Pathway: PI3K/Akt/mTOR

Storage: -20°C, sealed storage, away from moisture

* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (143.99 mM; ultrasonic and warming and heat to 60°C)

DMSO : 2.89 mg/mL (8.32 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8799 mL	14.3993 mL	28.7985 mL
5 mM	0.5760 mL	2.8799 mL	5.7597 mL
10 mM	0.2880 mL	1.4399 mL	2.8799 mL

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

BIOLOGICAL ACTIVITY

Description

BpV(HOpic) is a potent and selective inhibitor of PTEN with an IC_{50} of 14 nM. Nanocarrier-BpV(HOpic) has neuroprotective activity[1][2].

IC_{50} & Target

IC50: 14 nM (PTEN)[1]

In Vitro

BpV(HOpic) (1 μM) treatment increases cell proliferation and decreases apoptotic rate in MG63 cells received Cisplatin treatment[3].

Bpv(HOpic) (1 μM) enhances migration of C2C12 myoblasts and is associated with activation of PI3K/AKT and MAPK/ERK signalling pathways[4].

BpV(HOpic) (1 μM; 48 hours) promotes the initiation of swine follicle growth and development, similar as in rodent species and humans[5].

Nanocarrier-BpV(HOpic) enhances axonal outgrowth of neurons[2].

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

In Vivo

BpV(HOpic) (0.05 mg/kg; i.p.) at reperfusion ameliorates liver ischemia/reperfusion (I/R) injury in vivo[6].

BpV(HOpic) (200 μg/kg; i.p.) exacerbates renal dysfunction and promotes tubular damage in mice with ischemia/reperfusion

injury (IRI)[7].

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

Animal Model:	Male Wistar rats are subjected to partial hepatic ischemia[6]
Dosage:	0.05 mg/kg
Administration:	I.p. injections at the start of reperfusion
Result:	Ameliorated reoxygenation injury and reproduced the hepatoprotective effects obtained by adenosine A2A receptor stimulation.

Animal Model:	Male C57BL/6 mice (8-12 weeks old; 20-30 g) are subjected to renal ischemia[7]
Dosage:	200 μg/kg
Administration:	I.p. injections 1 h before ischemia and then administers every 6 h after ischemia for 24 hr
Result:	Raised the level of serum creatinine and blood serum urea nitrogen.

CUSTOMER VALIDATION

- Cancer Cell Int. 2021 Dec 19;21(1):689.
- Biochem Biophys Res Commun. 17 August 2022.

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REFERENCES

[1]. Schmid AC, et, al. Bisperoxovanadium compounds are potent PTEN inhibitors. FEBS Lett. 2004 May 21; 566(1-3): 35-8.

[2]. Zhang B, et, al. Silencing of miR-19a-3p enhances osteosarcoma cells chemosensitivity by elevating the expression of tumor suppressor PTEN. Oncol Lett. 2019 Jan; 17(1): 414-421.

[3]. Dimchev GA, et, al. Phospho-tyrosine phosphatase inhibitor Bpv(Hopic) enhances C2C12 myoblast migration in vitro. Requirement of PI3K/AKT and MAPK/ERK pathways. J Muscle Res Cell Motil. 2013 May; 34(2): 125-36.

[4]. Raffel N, et, al. The effect of bpV(HOpic) on in vitro activation of primordial follicles in cultured swine ovarian cortical strips. Reprod Domest Anim. 2019 Aug; 54(8): 1057-1063.

[5]. Ponte CD, et, al. Pharmacological postconditioning protects against hepatic ischemia/reperfusion injury. Liver Transpl. 2011 Apr; 17(4): 474-82.

[6]. Zhou J,et, al. Pharmacological Inhibition of PTEN Aggravates Acute Kidney Injury. Sci Rep. 2017 Aug 25; 7(1): 9503.

[7]. Kim MS, et, al. Nanotherapeutics of PTEN Inhibitor with Mesoporous Silica Nanocarrier Effective for Axonal Outgrowth of Adult Neurons. ACS Appl Mater Interfaces. 2016 Jul 27; 8(29): 18741-53.

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