IPAG

Cat. No.: HY-100985

CAS No.: 193527-91-2

Molecular Formula: $C_{17}H_{22}IN_3$

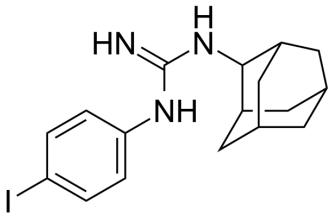
Molecular Weight: 395.28

Target: Sigma Receptor

Pathway: Neuronal Signaling

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 8.33 mg/mL (21.07 mM; ultrasonic and adjust pH to 3 with 1M HCl and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5299 mL	12.6493 mL	25.2985 mL
	5 mM	0.5060 mL	2.5299 mL	5.0597 mL
	10 mM	0.2530 mL	1.2649 mL	2.5299 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.83 mg/mL (2.10 mM); Suspended solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.83 mg/mL (2.10 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.83 mg/mL (2.10 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

IPAG is a potent sigma-1 receptor antagonist with a pK_i of 4.3[1]. IPAG induces apoptosis[2].

In Vitro

Sigma1 inhibition by IPAG causes the autolysosomal degradation of PD-L1 in PC3 (hormone-insensitive prostate cancer) and MDA-MB-231 (triple-negative breast cancer) cell lines and reduces the levels of functional PD-L1 on the surface of the cells[2].
IPAG treatment produces a mean of 100±8 μg per 10^6 cells. IPAG can inhibit cell proliferation. Treatment with IPAG decreases cell mass[3].
IPAG treatment suppresses phosphorylation of translational regulator proteins p70S6K, S6, and 4E-BP1[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[3]

Cell Line:	T47D cells
Concentration:	10 μM
Incubation Time:	24 hours
Result:	The mean forward scatter height (FSC-H) of DMSO (control) measured 412±5, whereas the mean FSC-H of IPAG treated cells was 390±4.

Western Blot Analysis[3]

Cell Line:	T47D cells
Concentration:	10 μM
Incubation Time:	
Result:	Decreased levels of phospho-threonine 389-p70S6Kinase (P-S6K), phospho-serine 235/236-ribosomal S6 (P-S6), and phospho-serine 65-4E-BP1 (P-4E-BP1).

REFERENCES

[1]. James M Brimson, et al. Simple ammonium salts acting on sigma-1 receptors yield potential treatments for cancer and depression. Sci Rep. 2020 Jun 8;10(1):9251.

[2]. Halley M Oyer, et al.Small-Molecule Modulators of Sigma1 and Sigma2/TMEM97 in the Context of Cancer: Foundational Concepts and Emerging Themes. Front Pharmacol. 2019 Oct 21;10:1141.

[3]. Felix J Kim, et al. Inhibition of tumor cell growth by Sigma1 ligand mediated translational repression. Biochem Biophys Res Commun. 2012 Sep 21;426(2):177-82.

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