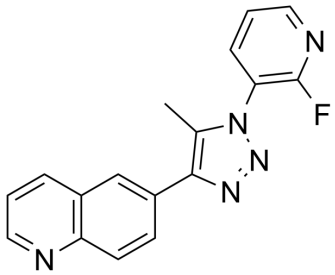
FPTQ

Cat. No.:	HY-100382
CAS No.:	864863-72-9
Molecular Formula:	$C_{17}H_{12}FN_5$
Molecular Weight:	305.31
Target:	mGluR
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (109.17 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2754 mL	16.3768 mL	32.7536 mL
	5 mM	0.6551 mL	3.2754 mL	6.5507 mL
	10 mM	0.3275 mL	1.6377 mL	3.2754 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: ≥ 2.5 mg/mL (8.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

FPTQ is potent $mGluR_1$ antagonist with IC_{50} values of 6 nM and 1.4 nM for human and mouse mGluR1 respectively[1]. FPTQ has anti-oxidant and anti-inflammatory effects in vitro and in vivo[2].

IC_{50} & Target

Human mGluR1	Mouse mGluR1
6 nM (IC_{50})	1.4 nM (IC_{50})

In Vitro

FPTQ (0.5-10 μM) does not shows any cytotoxicity was not observed at 0.5, 1, 5, and 10 μM in RAW264.7 macrophage cells[2].
FPTQ (1-20 μM; 24 hours) reduces LPS-induced NO production at > 1 μM FPTQ, and at 10 μM, FPTQ treatment causes a 31% anti-oxidant effect in RAW264.7 macrophage cells[2].
FPTQ (1-20 μM; 24 hours) dramaticly decreases LPS-induced expression levels of IL-1β and Il-6. At a concentration of 10 μM, FPTQ causes a 27% and 44% reduction in the mRNA expression of IL-1β and Il-6, respectively in RAW264.7 macrophage cells [2].

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

RT-PCR[1]

Cell Line:	RAW264.7 macrophage cells
Concentration:	1, 10, or 20 μM
Incubation Time:	24 hours
Result:	Decreased IL-1β and IL-6 mRNA expression

In Vivo

FPTQ (5-20 μM) decreases the number of neutrophils migrating to the amputation site in zebrafish larvae by tail amputation. In the tailfin wound method, the number of neutrophils collecting at the wound site also decreases in a dose-dependent manner in zebrafish[2].

In a LPS-induced inflammation zebrafish model, LPS solution is injected into the yolks of Tg(mpx:EGFP)^{i114} zebrafish larvae and exposed the zebrafish larvae immediately to FPTQ treatment.

FPTQ (20 μM; 4 hours) significantly decreases the fluorescent neutrophils after yolk injection and has an anti-inflammatory effect during the early phase of inflammation[2].

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

REFERENCES

[1]. Fujinaga M et al. Synthesis and evaluation of 6-[1-(2-[(18)F]fluoro-3-pyridyl)-5-methyl-1H-1,2,3-triazol-4-yl]quinoline for positron emission tomography imaging of the metabotropic glutamate receptor type 1 in brain. Bioorg Med Chem, 2011 Jan 1, 19(1):102

[2]. Geum Ran Kim, et al. Anti-inflammatory effect of a novel synthetic compound 1-((4-fluorophenyl)thio)isoquinoline in RAW264.7 macrophages and a zebrafish model. Fish Shellfish Immunol. 2019 Apr;87:395-400.

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