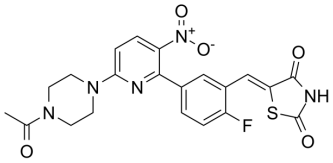
GW604714X

Cat. No.:	HY-138559
CAS No.:	853953-65-8
Molecular Formula:	$C_{21}H_{18}FN_5O_5S$
Molecular Weight:	471.46
Target:	Mitochondrial Metabolism
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMF : 5.26 mg/mL (11.16 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1211 mL	10.6054 mL	21.2107 mL
	5 mM	0.4242 mL	2.1211 mL	4.2421 mL
	10 mM	0.2121 mL	1.0605 mL	2.1211 mL

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

BIOLOGICAL ACTIVITY

Description

GW604714X is a potent inhibitor of mitochondrial respiration supported by pyruvate but not other substrates. GW604714X is a highly specific mitochondrial pyruvate carrier (MPC) inhibitor with a K_i <0.1 nM. GW604714X also inhibits L-lactate transport by the plasma membrane monocarboxylate transporter (MCT1), but at concentrations more than 4 orders of magnitude greater than the MPC[1].

In Vitro

GW604714X inhibits the mitochondrial pyruvate carrier (MPC) with K_i value <0.1 μM in direct measurement of pyruvate transport into rat liver and yeast mitochondria[1].

Inhibitor titrations of pyruvate-dependent respiration by heart mitochondria gave values for the concentration of inhibitor binding sites and their K_i (nM) of 56.0 nM and 0.057 nM for the GW604714X[1].

GW604714X inhibits the transport of 0.5 mM [^{14}C]-l-lactate into rat red blood cells, mediated by the monocarboxylate transporter MCT1. GW604714X at 10 μM reduces the initial rate of uptake to 30% of control values[1].

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

REFERENCES

[1]. John C W Hildyard, et al. Identification and characterisation of a new class of highly specific and potent inhibitors of the mitochondrial pyruvate carrier. Biochim Biophys Acta. Apr-May 2005;1707(2-3):221-30.

[2]. Allen K. Bourdon, et al. Alzheimer's and Parkinson's Disease Novel Therapeutic Target: The Mitochondrial Pyruvate Carrier - Ligand Docking to Screen Natural Compounds Related to Classic Inhibitors. DOI:10.4018/IJKDB.2017070104

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

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