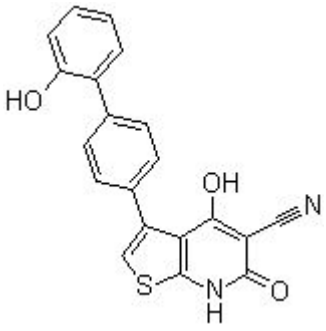
Product Introduction

A-769662

A-769662 is a potent, reversible **AMPK** activator with **EC50**of 0.8 μM, little effect on GPPase/FBPase activity.

Technical Data:

Molecular Weight (MW):	360.39	
Formula:	$C_{20}H_{12}N_2O_3S$	
Solubility (25°C) * <1 mg/ml means slightly soluble or insoluble:	DMSO 72 mg/mL	
	Water <1 mg/mL	
	Ethanol <1 mg/mL	
Purity:	>98%	
Storage:	3 years -20℃Powder	
	6 months-80℃in DMSO	
CAS No.:	844499-71-4	

Biological Activity

A-769662 stimulates partially purified rat liver AMPK with EC50 with 0.8 μM. A-769662 activates AMPK purified from multiple tissues and species in a dose-responsive manner with modest variations in observed EC50s. EC50s determined for A-769662 using partially purified AMPK extracts from rat heart, rat muscle, or human embryonic kidney cells (HEKs) are 2.2 mM, 1.9 mM, or 1.1 mM, respectively. A 4 hours treatment of primary rat hepatocytes with A-769662 dose-dependently increases ACC phosphorylation,

which correlated inhibition of fatty acid synthesis with IC50 of 3.2 μM. A-769662 also inhibits fatty acid sythesis in mouse hepatocytes with IC50 with 3.6 μM [1] A-769662 activates AMPK both allosterically and by inhibiting dephosphorylation of AMPK on Thr-172, similar to the effects of AMP. [2] A-769662 inhibits proteasomal function by an AMPK-independent mechanism. A-769662 affects the in vitro activity of purified 26S proteasomes but not the in vitro activity of purified 20S proteasomes. A-769662 has toxic effects on MEF cells. [3] A recent research shows A-769662 inhibited cell proliferation and DNA synthesis. [4]

Short-term treatment of normal Sprague Dawley rats with A-769662 decreases liver malonyl CoA levels and the respiratory exchange ratio, VCO2/VO2, indicating an increased rate of whole-body fatty acid oxidation. Treatment of ob/ob mice with 30 mg/kg b.i.d. A-769662 decreases hepatic expression of PEPCK, G6Pase, and FAS, lowers plasma glucose by 40%, reduced body weight gain and significantly decreases both plasma and liver triglyceride levels. [1]

References

[1] Cool B, et al, Cell Metab, 2006, 3(6), 403-416.

[2] Sanders MJ, J Biol Chem, 2007, 282(45), 32539-32548.

[3] Moreno D, et al, FEBS Lett, 2008, 583(17), 2650-2654.

[4] Pevton KJ, et al, J Pharmacol Exp Ther, 2012, Jun 13.