Taiclone®
Quality Guarantee

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CHIR-99021

Catalog No: tcsc0181

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg

Size: 200mg

Specifications

CAS No:	252917-06-9
Formula:	$C_{22}H_{18}Cl_2N_8$
Pathway:	Stem Cell/Wnt;PI3K/Akt/mTOR;Autophagy
Target:	GSK-3;GSK-3;Autophagy
Form:	Yellow Solid
Purity / Grade:	>99.86
Solubility:	DMSO 127.5 mg/mL (274.0 mM) warming Water : Insoluble.
Storage Instruction:	Powder : -20°C for 3 years In solvent : -80°C for 12 months
Alternative Names:	CT99021
Observed Molecular Weight:	465.34
References:	[1]. Ring DB, et al. Selective glycogen synthase kinase 3 inhibitors potentiate activation of glucose transport and utilization in vitro an in vivo. Diabetes. 2003 Mar;52(3):588-95. [2]. Bennett CN, et al. Regulation of Wnt signaling during adipogenesis. J Biol Chem. 2002 Aug 23;277(34):30998-1004. [3]. Naujok O, et al. Cytotoxicity and activation of the Wnt/beta-catenin pathway in mouse embryonic stem cells treated with four GSK3 inhibitors.BMC Res Notes. 2014 Apr 29;7:273.

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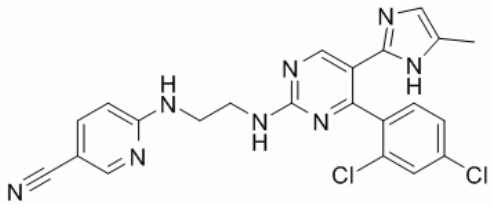
[4]. Wang X, et al. Pharmacologically blocking p53-dependent apoptosis protects intestinal stem cells and mice from radiation. Sci Rep. 2015 Apr 10;5:8566.
[5]. Ye S, et al. Pleiotropy of glycogen synthase kinase-3 inhibition by CHIR99021 promotes self-renewal of embryonic stem cells from refractory mouse strains. PLoS One. 2012;7(4):e35892.

Product Description

CHIR-99021 is a GSK-3α/β inhibitor with an IC50 of 10 and 6.7 nM,showing 500-fold selectivity over its closest homologs CDC2 and ERK2, as well as other protein kinases. IC50 & Target: IC50: 10 nM/6.7 nM (GSK-3α/β)[1] In Vitro: CHIR 99021inhibits human GSK-3β with Ki values of 9.8 nM[1]. CHIR 99021 is a small organic molecule that inhibits GSK3α and GSK3β by competing for their ATP-binding sites.In vitro kinase assays reveal that CHIR 99021 specifically inhibits GSK3β (IC50=~5 nM) and GSK3α (IC50=~10 nM), with little effect on other kinases[2]. In the presence of CHIR-99021 the viability of the ES-D3 cells is reduced by 24.7% at 2.5 μM, 56.3% at 5 μM, 61.9% at 7.5 μM and 69.2% at 10 μM CHIR-99021 with an IC50 of 4.9 μM[3]. In Vivo: In ZDF rats, a single oral dose of CHIR 99021 (16 mg/kg or 48 mg/kg) rapidly lowers plasma glucose, with a maximal reduction of nearly 150 mg/dl 3-4 h after administration[1]. CHIR99021 (2 mg/kg) given once, 4 h before irradiation, significantly improves survival after 14.5 Gy abdominal irradiation (ABI). CHIR99021 treatment significantly blocks crypt apoptosis and accumulation of p-H2AX+ cells, and improves crypt regeneration and villus height. CHIR99021 treatment increases Lgr5+ cell survival by blocking apoptosis, and effectively prevents



Protocol

Preparing Stock Solution	Volume / Mass / Concentration	1 mg	5 mg	10 mg
	1mM	2.1490 mL	10.7448 mL	21.4897 mL
	5mM	0.4298 mL	2.1490 mL	4.2979 mL
	10mM	0.2149 mL	1.0745 mL	2.1490 mL