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DATASHEET

CHIR 99021

Product overview

Name	CHIR 99021
Cat No	HB1261
Alternative names	Laduviglusib, CT99021, CHIR99021
Biological action	Inhibitor
Purity	>98%
Description	Potent, selective GSK3 inhibitor and Wnt signaling activator. Commonly used in organoid production and involved in reprogramming MEFs to IPSCs and fibroblasts to mature neurons.

Images

Biological Data

Biological description

Potent, selective and ATP-competitive GSK-3 inhibitor (IC_{50} values are 6.7 and 10 nM for GSK-3β and GSK-3α respectively).

Wnt signaling activator which is commonly used with PD 032501 as part of the 2i inhibitor combination.

Exhibits no cross reactivity against CDKs and exhibits >500-fold selectivity for GSK3 over other protein kinases and >800-fold selectivity over >20 other enzymes and receptors.

Promotes self-renewal of embryonic stem cells and enables mouse embryonic fibroblast (MEF) reprogramming into iPSCs.

Commonly used in organoid production and also involved in reprogramming of fibroblasts to mature neurons.

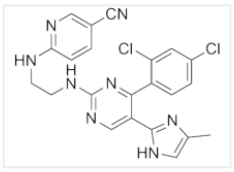
Water soluble CHIR 99021 trihydrochloride also available.

Solubility & Handling

Solubility overview	Soluble in DMSO (20mM)
Storage instructions	-20°C
Storage of solutions	Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Shipping Conditions	Stable for ambient temperature shipping. Follow storage instructions on receipt.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	6-[[2-[[4-(2,4-Dichlorophenyl)-5-(5 -methyl-1*H*-imidazol-2-yl)-2-pyrimidinyl]amino]ethyl]amino]-3-pyridinecarbonitrile
Molecular Weight	465.34
Chemical structure	
Molecular Formula	$C_{22}H_{18}Cl_2N_8$
CAS Number	252917-06-9
PubChem identifier	9956119
SMILES	CC1=CN=C(N1)C2=CN=C(N=C2C3=C(C=C(C=C3)Cl)Cl)NCCNC4=NC=C(C=C4)C#N
InChi	InChI=1S/C22H18Cl2N8/c1-13-10-29-21(31-13)17-12-30-22(32-20(17)16-4-3-15(23)8-18(16)24)27-7-6-26-19-5-2-14(9-25)11-28-19/h2-5,8,10-12H,6-7H2,1H3,(H,26,28)(H,29,31)(H,27,30,32)
InChiKey	AQGNHMOJWBZFQQ-UHFFFAOYSA-N
MDL number	MFCD11846251

References

The roles of Notch3 on the cell proliferation and apoptosis induced by CHIR99021 in NSCLC cell lines: a functional link between Wnt and Notch signaling pathways.

Li C *et al* (2013) PLoS One 8(12)
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Generation of human-induced pluripotent stem cells in the absence of exogenous Sox2.

Li W *et al* (2009) Stem cells 27(12)
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Pleiotropy of glycogen synthase kinase-3 inhibition by CHIR99021 promotes self-renewal of embryonic stem cells from refractory mouse strains.

Ye S *et al* (2012) PLoS One 7(4)
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