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## DATASHEET

CHIR 99021

### Product overview

<b>Name</b>	CHIR 99021
<b>Cat No</b>	HB1261
<b>Alternative names</b>	CHIR99021
<b>Biological action</b>	Inhibitor
<b>Purity</b>	>98%
<b>Description</b>	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



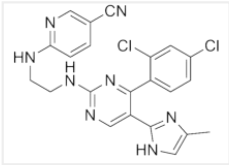
### Biological Data

<b>Biological description</b>	<p>Potent, selective and ATP-competitive GSK-3 inhibitor (<math>IC_{50}</math> values are 6.7 and 10 nM for GSK-3<math>\beta</math> and GSK-3<math>\alpha</math> respectively).</p> <p>Wnt signaling activator which is commonly used with <a href="#">PD 032501</a> as part of the 2i inhibitor combination.</p> <p>Exhibits no cross reactivity against CDKs and exhibits &gt;500-fold selectivity for GSK3 over other protein kinases and &gt;800-fold selectivity over &gt;20 other enzymes and receptors.</p> <p>Promotes self-renewal of embryonic stem cells and enables mouse embryonic fibroblast (MEF) reprogramming into iPSCs.</p> <p>Commonly used in organoid production and also involved in reprogramming of fibroblasts to mature neurons.</p> <p>Water soluble <a href="#">CHIR 99021 trihydrochloride</a> also available.</p>
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### Solubility & Handling

<b>Storage instructions</b>	-20°C
<b>Solubility overview</b>	Soluble in DMSO (20mM)
<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

## Chemical Data

<b>Chemical name</b>	6-[[[2-[[[4-(2,4-Dichlorophenyl)-5-(5-methyl-1 <i>H</i> -imidazol-2-yl)-2-pyrimidinyl]amino]ethyl]amino]-3-pyridinecarbonitrile
<b>Molecular Weight</b>	465.34
<b>Chemical structure</b>	
<b>Molecular Formula</b>	C <sub>22</sub> H <sub>18</sub> Cl <sub>2</sub> N <sub>8</sub>
<b>CAS Number</b>	252917-06-9
<b>PubChem identifier</b>	9956119
<b>SMILES</b>	CC1=CN=C(N1)C2=CN=C(N=C2C3=C(C=C(C=C3)Cl)Cl)NCCNC4=NC=C(C=C4)C#N
<b>InChi</b>	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)
<b>InChiKey</b>	AQGNHMOJWBZFFQ-UHFFFAOYSA-N
<b>MDL number</b>	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)

**PubMedID** [24367688](#)

### Generation of human-induced pluripotent stem cells in the absence of exogenous Sox2.

Li W *et al* (2009) Stem cells 27(12)

**PubMedID** [19839055](#)

### 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)

**PubMedID** [22540008](#)