

Product Name: CHIR 99021

Catalog No.: 4423

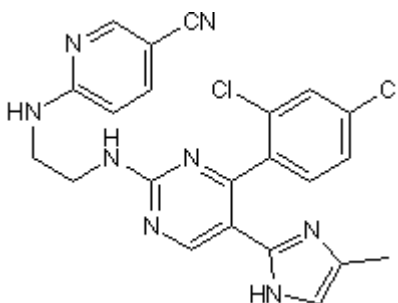
Batch No.: 3

CAS Number: 252917-06-9

IUPAC Name: 6-[[2-[[4-(2,4-Dichlorophenyl)-5-(5-methyl-1*H*-imidazol-2-yl)-2-pyrimidinyl]amino]ethyl]amino]-3-pyridinecarbonitrile

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₂H₁₈Cl₂N₈
Batch Molecular Weight: 465.34
Physical Appearance: Pale beige solid
Solubility: DMSO to 20 mM
Storage: Store at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.13 (Dichloromethane:Methanol [96:4])
HPLC: Shows >98.1% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Microanalysis:

	Carbon Hydrogen Nitrogen		
Theoretical	56.78	3.9	24.08
Found	56.63	3.93	24.09

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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 USA & CANADA Tel: (800) 343-7475 EUROPE Tel: +44 (0)1235 529449 CHINA Tel: +86 (21) 52380373
 www.RnDSystems.com

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Description:

Potent and highly selective inhibitor of glycogen synthase kinase 3 (GSK-3) (IC₅₀ values are 6.7 and 10 nM for GSK-3β and GSK-3α respectively). Exhibits >500-fold selectivity for GSK-3 over closely related kinases; also displays >800-fold selectivity against 45 additional enzymes and receptors. In combination with tranylcypromine, enables reprogramming of mouse embryonic fibroblasts, transduced by Oct4 and Klf4 only, into iPSCs. Enhances mouse and human ESC self-renewal when used in combination with PD 0325901 (Cat. No. 4192).

Physical and Chemical Properties:

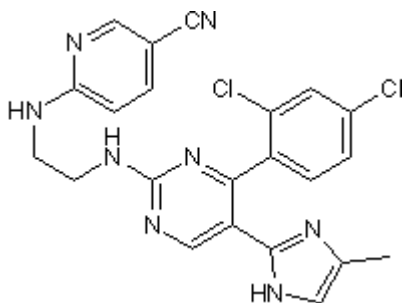
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Batch Molecular Weight: 465.34

Physical Appearance: Pale beige solid

Minimum Purity: >98%

Batch Molecular Structure:



References:

Ring *et al* (2003) Selective glycogen synthase kinase 3 inhibitors potentiate insulin activation of glucose transport and utilization in vitro and in vivo. *Diabetes* **52** 588. PMID: 12606497.

Li *et al* (2009) Generation of human-induced pluripotent stem cells in the absence of exogenous Sox2. *Stem Cells* **27** 2992. PMID: 19839055.

Pan *et al* (2011) AKT kinase activity is required for lithium to modulate mood-related behaviors in mice. *Neuropsychopharmacology* **36** 1397. PMID: 21389981.

Ye *et al* (2012) Pleiotropy of glycogen synthase kinase-3 inhibition by CHIR99021 promotes self-renewal of embryonic stem cells from refractory mouse strains. *PLoS One* **7** e35892. PMID: 22540008.

Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 20 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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