

PRODUCT INFORMATION



CHIR99021

Item No. 13122

CAS Registry No.: 252917-06-9
Formal Name: 6-[[2-[[4-(2,4-dichlorophenyl)-5-(5-methyl-1H-imidazol-2-yl)-2-pyrimidinyl]amino]ethyl]amino]-3-pyridinecarbonitrile

Synonym: CT 99021

MF: C₂₂H₁₈Cl₂N₈

FW: 465.3

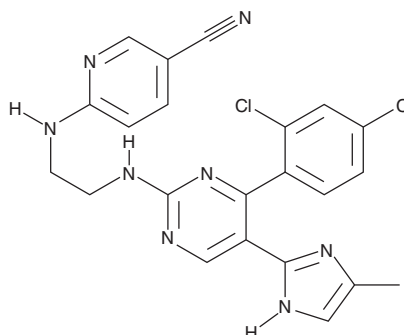
Purity: ≥95%

UV/Vis.: λ_{max}: 279 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

CHIR99021 is supplied as a crystalline solid. A stock solution may be made by dissolving the CHIR99021 in the solvent of choice, which should be purged with an inert gas. CHIR99021 is soluble in the organic solvent DMSO at a concentration of approximately 2.5 mg/ml.

Description

Glycogen synthase kinase 3 (GSK3) is a serine/threonine kinase that plays a key inhibitory role in both the insulin and Wnt signaling pathways.^{1,2} CHIR99021 is an aminopyrimidine derivative that inhibits GSK3 α and GSK3 β with IC₅₀ values of 10 and 6.7 nM, respectively.³ When tested against twenty different protein kinases, this inhibitor shows greater than 500-fold selectivity for GSK3.³ CHIR99021 activates glycogen synthesis in CHO-IR cells (EC₅₀ = 0.8 μ M) and in isolated type 1 diabetic rat skeletal muscle.³ A single oral dose (30 mg/kg) of CHIR99021 enhances *in vivo* glucose metabolism in a rodent model of type 2 diabetes.³ CHIR99021 has also been shown to induce the reprogramming of murine and human somatic cells into stem cells.^{4,5}

References

1. Sutherland, C., Leighton, I.A., and Cohen, P. *Biochem. J.* **296**(Pt 1), 15-19 (1993).
2. Papkoff, J. and Aikawa, M. *Biochem. Biophys. Res. Commun.* **247**(3), 851-858 (1998).
3. Ring, D.B., Johnson, K.W., Henriksen, E.J., et al. *Diabetes* **52**(3), 588-95 (2003).
4. Li, W., Zhou, H., Abujarour, R., et al. *Stem Cells* **27**(12), 2992-3000 (2009).
5. Ying, Q.L., Wray, J., Nichols, J., et al. *Nature* **453**(7194), 519-524 (2008).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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