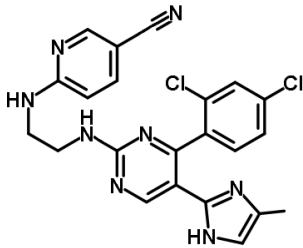




Product Specification Sheet

Product Name	Stemolecule™ CHIR99021
Description	The aminopyrimidine CHIR99021 is the most selective inhibitor of glycogen synthase kinase 3β (GSK-3β) reported to date ^{1,2} . Unlike other potent inhibitors of GSK-3 such as alsterpaullone, kenpaullone, SB214763, and SB415286, CHIR99201 does not exhibit cross-reactivity against cyclin-dependent kinases (CDKs) and shows a 350-fold selectivity toward GSK-3β compared to CDKs ³ . Ying et al. showed that along with the elimination of differentiation-inducing signaling from mitogen-activated protein kinases, using CHIR99021 to block the activity of GSK3β enabled the self-renewal of embryonic stem cells ⁴ .
Catalog Number	04-0004
Size	2 mg
Alternate Name	6-[[2-[[4-(2,4-dichlorophenyl)-5-(5-methyl-1H-imidazol-2-yl)-2-pyrimidinyl]amino]ethyl]amino]-3-pyridinecarbonitrile
Chemical Formula	C ₂₂ H ₁₈ Cl ₂ N ₈
Structure	
Molecular Weight	465.34
CAS Number	252917-06-9
Purity	Greater than 95% by HPLC analysis
Formulation	Off-white solid
Solubility	For a 10 mM concentrated stock solution of CHIR99021, reconstitute the compound by adding 429.8 μl of DMSO to the entire contents of the vial. If precipitate is observed, warm the solution to 37°C for 2 to 5 minutes. For cell culture, the media should be prewarmed prior to adding the reconstituted compound. Note: for most cells, the maximum tolerance to DMSO is less than 0.5%. This molecule is soluble in DMSO at 100 mM.
Storage and Stability	Store powder at 4°C protected from light. Following reconstitution, store aliquots at -20°C. Stock solutions are stable for 6 months when stored as directed.
Quality Control	The purity of CHIR99021 was determined by HPLC analysis. The accurate mass was determined by mass spectrometry. Cellular toxicity of CHIR99021 was tested on mouse embryonic stem cells.

For research use only. Not for use in diagnostic procedures.

©Stemgent 2011. Unless otherwise noted, Stemgent, Stemgent Logo and all other trademarks are the property of Stemgent, Inc.

Stemgent, 10575 Roselle St., San Diego, CA 92121 www.stemgent.com v2.0



Product Specification Sheet

References

1. Ring, D.B., Johnson, K.W., Henricksen, E.J., Nuss, J.M., Goff, D., Kinnick, T.R., Ma, S.T., Reeder, J.W., Samules, I., Slabiak, T., Wagman, A.S., Hammond, M.E., and Harrison, S.D. (2003) Selective glycogen synthase kinase 3 inhibitors potentiate insulin activation of glucose transport and utilization in vitro and in vivo. *Diabetes* 52: 588-595.
2. Hall, R.K., Yamasaki, T., Kucera, T., Waltner-Law, M., O'Brien, R., and Granner, D.K. (2000) Regulation of phosphoenolpyruvate carboxykinase and insulin-like growth factor-binding protein-1 gene expression by insulin. The role of winged helix/forkhead proteins. *J Biol Chem* 275: 30169-30175.
3. Finlay, D., Patel, S., Dickson, C.M., Shpiro, N., Marquez, R., Rhodes, C.J., and Sutherland, C. (2004) Glycogen synthase kinase-3 regulates IGFBP-I gene transcription through the Thymine-rich Insulin Response Element. *BMC Mol Biol* 5: 15.
4. Ying, Q.L., Wray, J., Nichols, J., Battle-Morera, L., Doble, B., Woodgett, J., Cohen, P., and Smith, A. (2008) The ground state of embryonic stem cell self-renewal. *Nature* 453: 519-523.

For research use only. Not for use in diagnostic procedures.

©Stemgent 2011. Unless otherwise noted, Stemgent, Stemgent Logo and all other trademarks are the property of Stemgent, Inc.

Stemgent, 10575 Roselle St., San Diego, CA 92121 www.stemgent.com v2.0