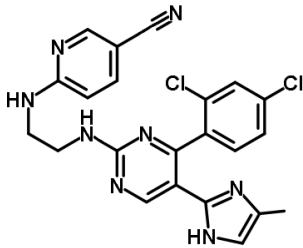


## Product Specification Sheet

<b>Product Name</b>	Stemolecule™ CHIR99021
<b>Description</b>	The aminopyrimidine CHIR99021 is the most selective inhibitor of glycogen synthase kinase 3β (GSK-3β) reported to date <sup>1,2</sup> . 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 <sup>3</sup> . 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 <sup>4</sup> .
<b>Catalog Number</b>	04-0004-10
<b>Size</b>	10 mg
<b>Alternate Name</b>	6-[[2-[[4-(2,4-dichlorophenyl)-5-(5-methyl-1H-imidazol-2-yl)-2-pyrimidinyl]amino]ethyl]amino]-3-pyridinecarbonitrile
<b>Chemical Formula</b>	C <sub>22</sub> H <sub>18</sub> Cl <sub>2</sub> N <sub>8</sub>
<b>Structure</b>	
<b>Molecular Weight</b>	465.34
<b>CAS Number</b>	252917-06-9
<b>Purity</b>	Greater than 95% by HPLC analysis
<b>Formulation</b>	Off-white solid
<b>Solubility</b>	For a 10 mM concentrated stock solution of CHIR99021, reconstitute the compound by adding 2.15 ml 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.
<b>Storage and Stability</b>	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.
<b>Quality Control</b>	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.

AMSBIO | [www.amsbio.com](http://www.amsbio.com) | [info@amsbio.com](mailto:info@amsbio.com)

UK & Rest of the World   
184 Park Drive, Milton Park  
Abingdon OX14 4SE.  
T: +44 (0) 1235 828 200  
F: +44 (0) 1235 820 482

North America   
1035 Cambridge Street,  
Cambridge, MA 02141.  
T: +1 (617) 945-5033 or  
T: +1 (800) 987-0985  
F: +1 (617) 945-8218

Europe   
Berenkoog 41,  
1822 BH Alkmaar,  
Netherlands  
T: +31 (0)72 8080244  
F: +31 (0)72 8080142

Switzerland   
Via Lisano 3,  
(CP.683)  
CH-6900  
T: +41 (0) 91 604 55 22  
F: +41 (0) 91 605 17 85

Germany   
Bockenheimer Landstr. 17/19  
60325 Frankfurt/Main  
T: +49 (0) 69 779099  
F: +49 (0) 69 13376880

## 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., Batlle-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.

AMSBIO | [www.amsbio.com](http://www.amsbio.com) | [info@amsbio.com](mailto:info@amsbio.com)

UK & Rest of the World   
184 Park Drive, Milton Park  
Abingdon OX14 4SE.  
T: +44 (0) 1235 828 200  
F: +44 (0) 1235 820 482

North America   
1035 Cambridge Street,  
Cambridge, MA 02141.  
T: +1 (617) 945-5033 or  
T: +1 (800) 987-0985  
F: +1 (617) 945-8218

Europe   
Berenkoog 41,  
1822 BH Alkmaar,  
Netherlands  
T: +31 (0)72 8080244  
F: +31 (0)72 8080142

Switzerland   
Via Lisano 3,  
(CP.683)  
CH-6900  
T: +41 (0) 91 604 55 22  
F: +41 (0) 91 605 17 85

Germany   
Bockenheimer Landstr. 17/19  
60325 Frankfurt/Main  
T: +49 (0) 69 779099  
F: +49 (0) 69 13376880