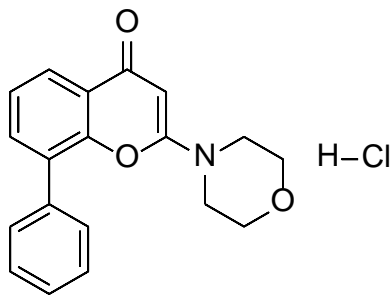


Product data sheet



MedKoo Cat#: 574773 Name: LY-294002 hydrochloride CAS: 934389-88-5 Chemical Formula: C ₁₉ H ₁₈ ClNO ₃ Exact Mass: 343.0975 Molecular Weight: 343.807	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

LY-294002 hydrochloride is a PI 3-, CK2-, mTOR-, PLK1-, PIM1- and PIM3-kinase inhibitor. LY-294002 hydrochloride inhibits proliferation and induces apoptosis in human colon cancer cells and suppresses proliferation of mESCs.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	8.60	25.0

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.91 mL	14.54 mL	29.09 mL
5 mM	0.58 mL	2.91 mL	5.82 mL
10 mM	0.29 mL	1.45 mL	2.91 mL
50 mM	0.06 mL	0.29 mL	0.58 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Wang YQ, Lin Y, Zhao JD, Yang YT. [Inhibitory Effect of LY294002 on Proliferation of Multiple Myeloma Cells and Its Mechanism]. *Zhongguo Shi Yan Xue Ye Xue Za Zhi*. 2017 Aug;25(4):1092-1096. Chinese. doi: 10.7534/j.issn.1009-2137.2017.04.023. PMID: 28823274.

2. Chen P, Wen X, Wang B, Hou D, Zou H, Yuan Q, Yang H, Xie J, Huang H. PI3K/Akt inhibitor LY294002 potentiates homoharringtonine antimyeloma activity in myeloma cells adhered to stromal cells and in SCID mouse xenograft. *Ann Hematol*. 2018 May;97(5):865-875. doi: 10.1007/s00277-018-3247-3. Epub 2018 Feb 15. PMID: 29450644.

In vivo study

1. Hongyan L, Chunyan W, Yue'e Y. LY294002, a PI3K inhibitor, attenuates Tourette syndrome in rats. *Metab Brain Dis*. 2017 Oct;32(5):1619-1625. doi: 10.1007/s11011-017-0051-z. Epub 2017 Jun 18. PMID: 28624893.

2. Chen P, Wen X, Wang B, Hou D, Zou H, Yuan Q, Yang H, Xie J, Huang H. PI3K/Akt inhibitor LY294002 potentiates homoharringtonine antimyeloma activity in myeloma cells adhered to stromal cells and in SCID mouse xenograft. *Ann Hematol*. 2018 May;97(5):865-875. doi: 10.1007/s00277-018-3247-3. Epub 2018 Feb 15. PMID: 29450644.

Product data sheet



7. Bioactivity

Biological target:

LY294002 hydrochloride is a potent and broad-spectrum PI3K inhibitor, with IC₅₀ values of 0.5, 0.57, and 0.97 μ M for P110 α , P110 δ and P110 β .

In vitro activity

The inhibitory effect of LY294002 on proliferation of multiple myeloma cell U266 was explored. U266 cell viability was reduced in time- and dose-dependent manner after treatment with 5, 10, 20 μ mol/L of LY294002 for 24, 48, 72 h. The 5, 10, 20 μ mol/L LY294002 led to cell nucleus dense and thick, and the cell cycle arrested in the G1 phase (P<0.01). The expressions of BCL-2, Cyclin D1, Cyclin E, PI3K and p-AKT were down-regulated (P<0.01), and the expression of BAX up-regulated (P<0.01). These results indicate that LY294002 can inhibit U266 cell proliferation via suppression of activation of PI3K/AKT signal pathway.

Reference: Zhongguo Shi Yan Xue Ye Xue Za Zhi. 2017 Aug;25(4):1092-1096. <https://pubmed.ncbi.nlm.nih.gov/28823274/>

In vivo activity

The effects of LY294002 on Tourette syndrome (TS) in rats were evaluated. TS model was induced in rats by DOI (the selective 5-HT_{2A/2C} agonist 1- (2, 5- dimethoxy -4 - iodophenyl) -2- aminopropane). Behavior was assessed by stereotypic score and autonomic activity. Inflammatory cytokines such as interleukin-6 (IL-6), interleukin-1 β (IL-1 β) and tumor necrosis factor- α (TNF- α) in serum and striatum were detected. The protein levels of PI3K/Akt/NF-B in striatum were detected by Western Blot. LY294002 treatment significantly reduced IL-6, IL-1 β and TNF- α in serum and striatum of TS rats, Also, highly expressed P-PI3K, P-Akt, P-NF- κ Bp65, P-I κ B α in TS rats were restored respectively by LY294002 treatment as indicted in western blot analysis and immunohistochemistry analysis. Thus, it was supposed that the protective effect of LY294002 against TS in rat might be associated with the regulation of PI3K/Akt/NF-B pathway.

Reference: Metab Brain Dis. 2017 Oct;32(5):1619-1625. <https://link.springer.com/article/10.1007%2Fs11011-017-0051-z>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.