



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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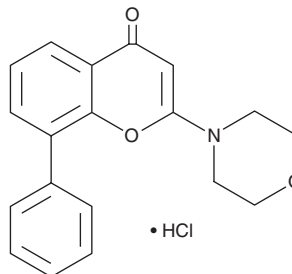
# PRODUCT INFORMATION



## LY294002 (hydrochloride)

Item No. 39171

**CAS Registry No.:** 934389-88-5  
**Formal Name:** 2-(4-morpholinyl)-8-phenyl-4H-1-benzopyran-4-one, monohydrochloride  
**MF:** C<sub>19</sub>H<sub>17</sub>NO<sub>3</sub> • HCl  
**FW:** 343.8  
**Purity:** ≥98%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

LY294002 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the LY294002 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. LY294002 (hydrochloride) is soluble in DMSO. LY294002 (hydrochloride) is slightly soluble in acetonitrile.

LY294002 (hydrochloride) is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

LY294002 is a multi-kinase inhibitor.<sup>1</sup> It inhibits casein kinase 2 (CK2; IC<sub>50</sub> = 0.098 μM), the PI3K subunits p110α, p110β, p110δ, and p110γ (IC<sub>50</sub>s = 0.497, 0.554, 0.331, and 3.8 μM, respectively), and DNA protein kinase (DNA-PK; IC<sub>50</sub> = 6 μM), among other kinases, as well as inhibits CK1, GSK3α, and GSK3β by greater than 40% at 10 μM.<sup>1-3</sup> LY294002 (12.5, 25, and 50 μM) reduces viability of SGC-7901 human gastric cancer cells.<sup>4</sup> It also induces apoptosis and autophagy in SGC-7901 cells when used at a concentration of 50 μM. LY294002 (2 ng/ml/kg) reduces tumor volume in DLD-1 and LoVo mouse xenograft models.<sup>5</sup> It also reduces aging-induced increases in the number of aging human vascular smooth muscle cells (VSMCs) positive for senescence-associated β-galactosidase (SA-β-gal) when used at a concentration of 20 μM in the 5<sup>th</sup> to 15<sup>th</sup> generations.<sup>6</sup>

### References

1. Gharbi, S.I., Zvelebil, M.J., Shuttleworth, S.J., et al. Exploring the specificity of the PI3K family inhibitor LY294002. *Biochem. J.* **404**(1), 15-21 (2007).
2. Izzard, R.A., Jackson, S.P., and Smith, G.C. Competitive and noncompetitive inhibition of the DNA-dependent protein kinase. *Cancer Res.* **59**(11), 2581-2586 (1999).
3. Bain, J., Plater, L., Elliot, M., et al. The selectivity of protein kinase inhibitors: A further update. *Biochem. J.* **408**(3), 297-315 (2007).
4. Xing, C., Zhu, B., Liu, H., et al. Class I phosphatidylinositol 3-kinase inhibitor LY294002 activates autophagy and induces apoptosis through p53 pathway in gastric cancer cell line SGC7901. *Acta Biochim. Biophys. Sin. (Shanghai)* **40**(3), 194-201 (2008).
5. Semba, S., Itoh, N., Ito, M., et al. The *in vitro* and *in vivo* effects of 2-(4-morpholinyl)-8-phenyl-chromone (LY294002), a specific inhibitor of phosphatidylinositol 3'-kinase, in human colon cancer cells. *Clin. Cancer Res.* **8**(6), 1957-1963 (2002).
6. Tan, P., Wang, Y.-J., Li, S., et al. The PI3K/Akt/mTOR pathway regulates the replicative senescence of human VSMCs. *Mol. Cell Biochem.* **422**(1-2), 1-10 (2016).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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