# TPI-1

**Cat. No.:** HY-100463

**CAS No.:** 79756-69-7

**Molecular Formula:** $C_{12}H_6Cl_2O_2$

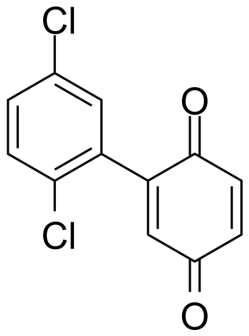
**Molecular Weight:** 253

**Target:** Phosphatase

**Pathway:** Metabolic Enzyme/Protease

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 50 mg/mL (197.63 mM; Need ultrasonic)

$H_2O$ : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.9526 mL | 19.7628 mL | 39.5257 mL |
| 5 mM | 0.7905 mL | 3.9526 mL | 7.9051 mL |
| 10 mM | 0.3953 mL | 1.9763 mL | 3.9526 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.88 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.88 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.88 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

TPI-1, also known as Tyrosine Phosphatase Inhibitor 1, is a SHP-1 inhibitor; inhibits recombinant SHP-1 with an $IC_{50}$ of 40 nM.

**$IC_{50}$ & Target**

IC50: 40 nM (recombinant SHP-1)[1]

**In Vitro**

SHP-1 has been implicated as a potential cancer therapeutic target. TPI-1 is effective starting at 10 ng/mL in increasing SHP-

| | |
|---|---|
| | 1 phospho-substrates pLck-pY394. TPI-1 selectively increases SHP-1 phospho-substrates (pLck-pY394, pZap70 and pSlp76) in Jurkat T cells but has little effects on pERK1/2 or pLck-pY505. TPI-1 induces mouse splenic-IFNγ$^+$ cells and induces IFNγ$^+$ cells in human peripheral blood[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | TPI-1 inhibits the growth of B16 melanoma tumors in mice at a tolerated oral dose in a T cell-dependent manner but has little effects on B16 cell growth in culture. TPI-1 thus also increases pLck-pY394 and IFNγ$^+$ cells in mice. TPI-1 also inhibits B16 tumor growth and prolongs tumor mice survival as a tolerated s.c. agent[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

| | |
|---|---|
| **Animal Administration [1]** | Mice: For in vivo induction of pLck-pY394 and IFNγ+ cells in mice, C57BL/6J mice are treated with PBS or TPI-1 (1 or 3 mg/kg, s.c.) for 4 days. Spleens are harvested one hour post-treatment on day 4 and processed into splenocytes, which are used for assessing pLck-pY394 levels by SDS-PAGE/Western blotting and for quantification of IFNγ+ cells by ELISPOT assays. Mice are also treated with TPI-1 (10 mg/kg, daily, s.c.) to evaluate the toxicity of the compounds in vivo[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- J Allergy Clin Immunol. 2021 Jun 15;S0091-6749(21)00936-2.
- Cancer Res. (2022) 82 (10): 1991-2002.
- J Neuroinflammation. 2020 Mar 9;17(1):81.
- Front Immunol. 2022 Jun 10:13:865503.
- Front Immunol. 21 January 2021.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Kundu S, et al. Novel SHP-1 inhibitors tyrosine phosphatase inhibitor-1 and analogs with preclinical anti-tumor activities as tolerated oral agents. J Immunol. 2010 Jun 1;184(11):6529-36.



Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA