# T-5224

**Cat. No.:** HY-12270

**CAS No.:** 530141-72-1

**Molecular Formula:** $C_{29}H_{27}NO_8$

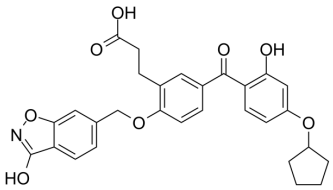
**Molecular Weight:** 518

**Target:** MMP; AP-1

**Pathway:** Metabolic Enzyme/Protease; Immunology/Inflammation

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 2 years |
| | -20°C | 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (193.05 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.9305 mL | 9.6525 mL | 19.3050 mL |
| | 5 mM | 0.3861 mL | 1.9305 mL | 3.8610 mL |
| | 10 mM | 0.1931 mL | 0.9653 mL | 1.9305 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 5 mg/mL (9.65 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 5 mg/mL (9.65 mM); Clear solution; Need ultrasonic

## BIOLOGICAL ACTIVITY

**Description**

T-5224 is a transcription factor c-Fos/activator protein (AP)-1 inhibitor with anti-inflammatory effects, which specifically inhibits the DNA binding activity of c-Fos/c-Jun without affecting other transcription factors. T-5224 inhibits the IL-1β-induced up-regulation of Mmp-3, Mmp-13 and Adamts-5 transcription[1][2].

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

c-Fos/activator protein (AP)-1[1]

**In Vitro**

T-5224 inhibits in-vitro production of the mediators MMP-1, MMP-3, IL-6 and TNF-α by IL-1β-stimulated human synovial SW982 cells with the mean $IC_{50}$ of about 10 μM[2].
T-5224 (0-80 μM) significantly inhibits the invasion, migration, and MMP activity of HSC-3-M3 cells in a dose-dependent manner[3].

| | |
|---|---|
| | MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | Administration of T-5224 (300 mg/kg, p.o.) after intraperitoneal injection of LPS impartes appreciable protection against acute elevations in serum levels of TNFα, HMGB1, ALT/AST as well as in liver tissue levels of MIP-1α and MCP-1, and reduces the lethality (27%)[4].<br>G2 is observed in rat and monkey liver microsomes as a major metabolite of T-5224, suggesting that G2 is not a human-specific metabolite[5].<br>T-5224 (300 mg/kg, p.o.) inhibits the production of TNF-alpha and other downstream effectors in C57BL/6 mice[6].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

| | |
|---|---|
| **Cell Assay** [4] | HSC-3-M3 cells are starved for 24 h with DMEM containing 0.5% FBS. The top chamber of the cell invasion device is coated with 50 μL of 0.1 × basement membrane extract solution and incubataed overnight. HSC-3-M3 cells ($5.0 \times 10^4$ cells/well) are added to the top chamber with DMEM containing 0.5% FBS mixed with 0-80 μM T-5224; DMEM with 10% FBS is added to the bottom chamber and incubated for 48 h. The bottom plate is read using a multilabel plate reader. The data are compared with the standard curve to determine the fraction of invaded cells.<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration** [2] | Mice in LPS group are administered orally with polyvinylpyrrolidone solution in the same volume of T-5224 solution immediately after LPS injection, while in the T-5224 group, mice are administered orally with T-5224 (300 mg/kg, p.o.) in the same manner. In the control group, mice receives polyvinylpyrrolidone solution orally soon after intraperitoneal saline injection. Blood samples are collected for each measurement at the optimal time.<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2022 Jul 11;7(1):222.
- Adv Mater. 2023 Sep 8;e2302503.
- Sci Immunol. 2021 Jan 29;6(55):eabd3489.
- Cell Stem Cell. 2017 May 4;20(5):621-634.e6.
- Cell Stem Cell. 2016 Sep 1;19(3):326-40.

See more customer validations on www.MedChemExpress.com

## REFERENCES


[1]. Makino H, et al. A selective inhibition of c-Fos/activator protein-1 as a potential therapeutic target for intervertebraldisc degeneration and associated pain. Sci Rep. 2017 Dec 5;7(1):16983.

[2]. Aikawa Y, et al. Treatment of arthritis with a selective inhibitor of c-Fos/activator protein-1. Nat Biotechnol. 2008 Jul;26(7):817-23.

[3]. Kamide D, et al. Selective activator protein-1 inhibitor T-5224 prevents lymph node metastasis in an oral cancer model. Cancer Sci.?2016 May;107(5):666-73.

[4]. Izuta S, et al. T-5224, a selective inhibitor of c-Fos/activator protein-1, attenuates lipopolysaccharide-induced liver injury in mice. Biotechnol Lett. 2012 Dec;34(12):2175-82.

[5]. Uchihashi S, et al. Metabolism of the c-Fos/activator protein-1 inhibitor T-5224 by multiple human UDP-glucuronosyltransferase isoforms. Drug Metab Dispos. 2011 May;39(5):803-13.

[6]. Miyazaki H, et al. The effects of a selective inhibitor of c-Fos/activator protein-1 on endotoxin-induced acute kidney injury in mice. BMC Nephrol. 2012 Nov 23;13:153.



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