# Pyrrophenone

**Cat. No.:** HY-111376

**CAS No.:** 341973-06-6

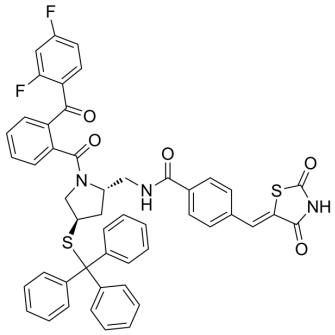
**Molecular Formula:** $C_{49}H_{37}F_2N_3O_5S_2$

**Molecular Weight:** 849.96

**Target:** Phospholipase

**Pathway:** Metabolic Enzyme/Protease

**Storage:** 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (117.65 mM; Need ultrasonic)

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.1765 mL | 5.8826 mL | 11.7653 mL |
| | 5 mM | 0.2353 mL | 1.1765 mL | 2.3531 mL |
| | 10 mM | 0.1177 mL | 0.5883 mL | 1.1765 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

Pyrrophenone is a potent and specific cytosolic phospholipase $A_2\alpha$ ($cPLA_2\alpha$) inhibitor with an $IC_{50}$ value of 4.2 nM[1].

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

cPLA2α
4.2 nM ($IC_{50}$)

**In Vitro**

Pyrrophenone shows potent inhibition of arachidonic acid release, prostaglandin $E_2$, thromboxane $B_2$, and leukotriene $B_4$ formation in human whole blood[1].

Pyrrophenone inhibits the production of arachidonic acid (AA) ($IC_{50}$=24±1.7 nM), $PGE_2$ ($IC_{50}$=25±19 nM),, and $LTC_4$ ($IC_{50}$ =14±6.7 nM),from THP-1 cells stimulated with A23187[1].

Pyrrophenone inhibits the production of AA ($IC_{50}$=0.19±0.068 μM), $PGE_2$ ($IC_{50}$=0.20±0.047 μM), $TXB_2$ ($IC_{50}$=0.16±0.093 μM),and $LTB_4$ ($IC_{50}$=0.32±0.24 μM) from human whole blood stimulated with A23187[1].

Pyrrophenone (0.1-0.5 μM, 48 h) inhibits the growth of PC-PTC3 and $PCCl_3$ cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[2]

| | |
|---|---|
| Cell Line: | PC-PTC3 and $PCCl_3$ cells |

| | |
|---|---|
| Concentration: | 0.1, 0.3, and 0.5 μM |
| Incubation Time: | 48 hours |
| Result: | Significantly inhibited basal PC-PTC3 cell proliferation at concentrations as low as 0.1 μM. Basal cell proliferation of normal $PCCl_3$ cells was also inhibited by 0.5 μM, although to a lesser extent. |

**In Vivo**

Pyrrophenone (administered i.p. at 20 mg/kg 30 min before LPS injection.) suppresses bronchoalveolar lavage (BAL) levels of leukotriene B4 ($LTB_4$) and platelet activating factor (PAF)[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | Specific pathogen-free female BALB/c mice[3] |
| Dosage: | 20 mg/kg |
| Administration: | Administered i.p. 30 min before LPS injection |
| Result: | Suppressed the recruitment of neutrophils and eosinophils, but not macrophages. |

## CUSTOMER VALIDATION

- Int J Mol Sci. 2023, 24(2), 1375.
- Eur J Pharmacol. 2020 Nov 15;887:173559.

See more customer validations on www.MedChemExpress.com

## REFERENCES


[1]. K Seno, et al. Pyrrolidine inhibitors of human cytosolic phospholipase A2. Part 2: synthesis of potent and crystallized 4-triphenylmethylthio derivative 'pyrrophenone'. Bioorg Med Chem Lett. 2001 Feb 26;11(4):587-90.

[2]. Stefania Mariggiò, et al. Cytosolic phospholipase A2 alpha regulates cell growth in RET/PTC-transformed thyroid cells. Cancer Res. 2007 Dec 15;67(24):11769-78.

[3]. C-H Lee, et al. Mechanism of glutamine inhibition of cytosolic phospholipase a2 (cPLA2 ): Evidence of physical interaction between glutamine-Induced mitogen-activated protein kinase phosphatase-1 and cPLA2. Clin Exp Immunol. 2015 Jun;180(3):571-80.





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