# ML228

**Cat. No.:** HY-12754

**CAS No.:** 1357171-62-0

**Molecular Formula:** $C_{27}H_{21}N_5$

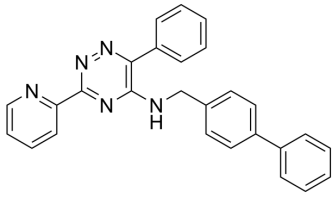
**Molecular Weight:** 415.49

**Target:** HIF/HIF Prolyl-Hydroxylase

**Pathway:** Metabolic Enzyme/Protease

**Storage:**

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



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 35 mg/mL (84.24 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.4068 mL | 12.0340 mL | 24.0680 mL |
| 5 mM | 0.4814 mL | 2.4068 mL | 4.8136 mL |
| 10 mM | 0.2407 mL | 1.2034 mL | 2.4068 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 (6.02 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

ML228 (CID-46742353) is a potent the Hypoxia Inducible Factor (HIF) pathway activator with $EC_{50}$ of 1 μM. ML228 potently activates HIF in vitro as well as its downstream target VEGF[1][2].

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

EC50: 1 μM (HIF)[1]

**In Vitro**

ML228 (CID-46742353) represents a novel chemotype available to the research community for the study of HIF activation

| | |
|---|---|
| | and its therapeutic potential. Not only is the compound substantially different in structure from known HIF activators, ML228 lacks the acidic functional group almost universally present in PHD inhibitors, which may be important for certain disease applications[1][2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | ML228 (injection; 1 μg/kg; 7 days) treatments following spinal cord injury (SCI) improves the local hypoxic ischemia environment, reduce SCI secondary injury and promote the recovery of neurological function[3].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

| | |
|---|---|
| Animal Model: | SD rat[3] |
| Dosage: | 1 μg/kg |
| Administration: | injection; 7 days |
| Result: | Alleviated SCI of the central nervous system and relieve associated symptoms. |

## CUSTOMER VALIDATION

- Mol Cancer. 2022 Jun 23;21(1):135.
- Oncol Rep. 2020 Jul;44(1):103-114.
- Biochem Biophys Res Commun. 2023 Apr 26;663:192-201.
- J Chem Neuroanat. 2021 Jun 21;101994.
- Exp Ther Med. 2017 Mar;13(3):861-866.

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## REFERENCES

[1]. Theriault JR, et al. Discovery of a Small Molecule Activator of the Hypoxia Inducible Factor Pathway. Probe Reports from the NIH Molecular Libraries Program.

[2]. Theriault JR, et al. Discovery of a new molecular probe ML228: an activator of the hypoxia inducible factor (HIF) pathway. Bioorg Med Chem Lett. 2012 Jan 1;22(1):76-81.

[3]. Chen H, et al. Effect of hypoxia-inducible factor-1/vascular endothelial growth factor signaling pathway on spinal cord injury in rats.Exp Ther Med. 2017 Mar;13(3):861-866.



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