# JAK1-IN-12

**Cat. No.:** HY-149296

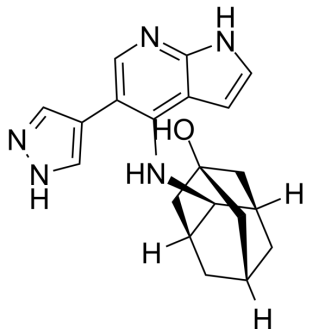
**Molecular Formula:** $C_{20}H_{23}N_5O$

**Molecular Weight:** 349.43

**Target:** JAK

**Pathway:** Epigenetics; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; Stem Cell/Wnt

**Storage:** Please store the product under the recommended conditions in the Certificate of Analysis.



## BIOLOGICAL ACTIVITY

**Description**

JAK1-IN-12 is a selective inhibitor of JAK1, with $IC_{50}$ of 0.0246 μM. And $IC_{50}$s of 0.423 μM, 0.410 μM and 1.12 μM for JAK2, JAK3 and TYK2. JAK1-IN-12 promotes hair growth in mice. JAK1-IN-12 can be used for research of immune and inflammatory diseases[1].

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

| JAK1 | JAK2 | JAK3 | Tyk2 |
|---|---|---|---|
| 0.0246 μM ($IC_{50}$) | 0.423 μM ($IC_{50}$) | 0.410 μM ($IC_{50}$) | 1.12 μM ($IC_{50}$) |

**In Vitro**

HDAC-IN-57 (Compound 12b) inhibits JAK1 and JAK2 activity in Ba/F3-TEL-JAK1 cell lines, with $IC_{50}$ of 0.110 μM and 6.105 μM [1].

HDAC-IN-57 (Compound 12b) (1 μM) showed strong interaction with JAK1, JAK3, PKD2, HPK1, AurB in vitro panel assay[1].

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

**In Vivo**

JAK1-IN-12 (Compound 12b) (2%, in 10% DMSO solution, daily to half of the shaved area for 1 month) promotes hair growth in the shaved area of the dorsal back of 8-week-old C57/B6 mice[1].

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

| | |
|---|---|
| Animal Model: | C57/B6 mice[1] |
| Dosage: | 2% in 10% DMSO solution |
| Administration: | External use; applied daily for 1 month |
| Result: | Promoted skin darkening within 9 days and new hair growth within 13 days in shaved area of the dorsal back of C57/B6 mice |

## REFERENCES

[1]. Lang JJ, et al. Discovery of C-5 Pyrazole-Substituted Pyrrolopyridine Derivatives as Potent and Selective Inhibitors for Janus Kinase 1. J Med Chem. 2023 May 25;66(10):6725-6742.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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