# ZT55

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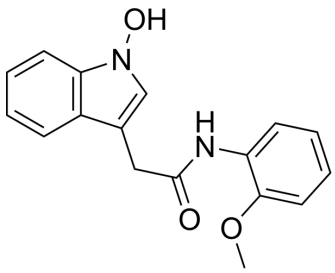
| **Cat. No.:** | HY-124727 |
| **CAS No.:** | 2138488-38-5 |
| **Molecular Formula:** | $C_{17}H_{16}N_2O_3$ |
| **Molecular Weight:** | 296.32 |
| **Target:** | JAK; Apoptosis |
| **Pathway:** | Epigenetics; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; Stem Cell/Wnt; Apoptosis |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |




## BIOLOGICAL ACTIVITY

**Description**

ZT55 is an orally active and highly-selective JAK2 inhibitor with an $IC_{50}$ value of 0.031 μM. ZT55 inhibits the proliferation of $JAK2^{V617F}$-expressing HEL cell lines and induces apoptosis and cycle arrest. ZT-55 also effectively inhibits the growth of HEL xenograft tumours in a mice model. ZT-55 can be used in studies of myeloproliferative neoplasms, polycythemia vera and primary thrombocythemia[1].

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

JAK2
0.031 μM ($IC_{50}$)

**In Vitro**

ZT55 (0-100 μM; 48 h) inhibits the proliferation of $JAK2^{V617F}$ (+) HEL cells in a concentration-dependent manner ($IC_{50}$=18.05 μM)[1].
ZT55 (12.5, 25, 50 μM; 24, 48, 72 h) inhibits the cell viability and induces apoptosis of HEL cells in a concentration- and time-dependent manner[1].
ZT55 (12.5, 25, 50 μM; 24 h) arrests HEL cells in the G2/M phase in a concentration-dependent manner[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

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| Cell Line: | HEL cells ($JAK2^{V617F}$(+)) |
| Concentration: | 0-100 μM |
| Incubation Time: | 48 h |
| Result: | Significantly inhibited proliferation in a concentration-dependent manner ($IC_{50}$=18.05 μM). |

Cell Viability Assay[1]

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| Cell Line: | HEL cells |
| Concentration: | 12.5, 25, 50 μM |
| Incubation Time: | 24, 48, 72 h |
| Result: | Inhibited viability of HEL cells in a concentration- and time-dependent manner. |

Apoptosis Analysis[1]

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| Cell Line: | HEL cells (JAK2$^{V617F}$(+)) |
| Concentration: | 0-100 μM |
| Incubation Time: | 24, 48, 72 h |
| Result: | Induced cell apoptosis in a concentration- and time-dependent manner. |

Cell Cycle Analysis[1]

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| Cell Line: | HEL cells (JAK2$^{V617F}$(+)) |
| Concentration: | 0-100 μM |
| Incubation Time: | 24, 48, 72 h |
| Result: | Significantly increased the number of HEL cells in the G2/M phase in a concentration-dependent manner. |

**In Vivo**

ZT55 (100 mg/kg; p.o; once a day for 2 weeks) drastically attenuates the growth of subcutaneous HEL tumors in nude mice[1].

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

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| Animal Model: | Female, athymic BALB/c nude mice (6 to 8-week-old; JAK2$^{V617F}$ xenograft model)[1]. |
| Dosage: | 100 mg/kg |
| Administration: | Oral administration; once a day for 2 weeks |
| Result: | Induced marked reductions in tumor volume. |

## REFERENCES

[1]. Hu M, et al. Discovery and evaluation of ZT55, a novel highly-selective tyrosine kinase inhibitor of JAK2V617F against myeloproliferative neoplasms. J Exp Clin Cancer Res. 2019 Feb 4;38(1):49.



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