# HDAC-IN-51

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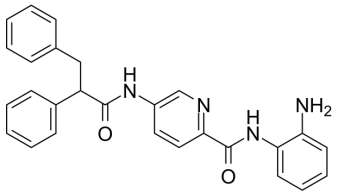
| **Cat. No.:** | HY-152173 |
| **CAS No.:** | 3026728-28-6 |
| **Molecular Formula:** | $C_{27}H_{24}N_4O_2$ |
| **Molecular Weight:** | 436.51 |
| **Target:** | HDAC; Apoptosis; Bcl-2 Family; CDK |
| **Pathway:** | Cell Cycle/DNA Damage; Epigenetics; Apoptosis |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

**Description**

HDAC-IN-51 is a potent histone deacetylase (HDAC) inhibitor with $IC_{50}$ values of 0.32, 0.353, 0.431, 0.515, and 85.4 μM for HDAC10, HDAC1, HDAC2, HDAC3 and HDAC11, respectively. HDAC-IN-51 induces cell cycle arrest and apoptosis, modulating cell cycle-/apoptosis-related miRNAs expression. HDAC-IN-51 can be used in research of cancer[1].

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

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|---|---|---|---|
| HDAC10<br>0.32 μM ($IC_{50}$) | HDAC1<br>0.353 μM ($IC_{50}$) | HDAC2<br>0.431 μM ($IC_{50}$) | HDAC3<br>0.515 μM ($IC_{50}$) |
| HDAC11<br>85.4 μM ($IC_{50}$) | | | |

**In Vitro**

HDAC-IN-51 (compound 8d; 1 nM-10 μM; 48 h) has antiproliferative activity with $IC_{50}$ values of 0.54, 0.56, and 1.35 μM for K562, HCT116, and A549 cells, respectively[1].

HDAC-IN-51 (1 and 5 μM; 24 and 48 h; U937 leukaemia cells) arrests cell cycle at the G1 phase[1].

HDAC-IN-51 (1 and 5 μM; 48 h; U937 cells) induces apoptosis and down-regulates miRNAs with antiapoptotic activity (miR-17-5p, miR-18-5p, miR-19b-3p, miR-20a-5p,miR-21-5p)[1].

HDAC-IN-51 (1 and 5 μM; 48 h; U937 cells) increases mRNA expression of p21, BAX and BAK, down-regulates cyclin D1 and BCL-2[1].

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

Cell Viability Assay[1]

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| Cell Line: | K562, HCT116, and A549 cells |
| Concentration: | 1 nM-10 μM |
| Incubation Time: | 48 hours |
| Result: | Inhibited cell growth in cancer cells. |

Cell Cycle Analysis[1]

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|---|---|
| Cell Line: | U937 leukaemia cells |
| Concentration: | 1 and 5 μM |

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|---|---|
| Incubation Time: | 24 and 48 hours |
| Result: | Blocked the cell cycle at the G1 phase in U937 leukaemia cells. |

Western Blot Analysis[1]

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|---|---|
| Cell Line: | U937 cells |
| Concentration: | 1 and 5 μM |
| Incubation Time: | 48 hours |
| Result: | Down-regulates miRNAs with antiapoptotic activity including miR-17-5p, miR-18-5p, miR-19b-3p, miR-20a-5p,miR-21-5p. |

Western Blot Analysis[1]

| | |
|---|---|
| Cell Line: | U937 cells |
| Concentration: | 1 and 5 μM |
| Incubation Time: | 48 hours |
| Result: | Increased mRNA expression of p21, BAX and BAK and down-regulated cyclin D1 and BCL-2 in a dose-dependent manner. |

## REFERENCES

[1]. Di Bello E, et, al. Novel pyridine-containing histone deacetylase inhibitors strongly arrest proliferation, induce apoptosis and modulate miRNAs in cancer cells. Eur J Med Chem. 2022 Dec 15;247:115022.



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