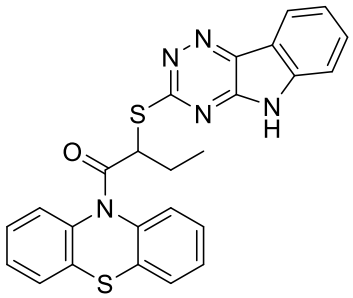
Product data sheet

MedKoo Cat#: 406518 Name: Inauhzin CAS: 309271-94-1 Chemical Formula: $C_{25}H_{19}N_5OS_2$ Exact Mass: 469.1031 Molecular Weight: 469.581	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Inauhzin is a potent SIRT inhibitor, which effectively reactivates p53 by inhibiting SIRT1 activity, promotes p53-dependent apoptosis of human cancer cells without causing apparently genotoxic stress. Moreover, Inauhzin stabilizes p53 by increasing p53 acetylation and preventing MDM2-mediated ubiquitylation of p53 in cells, though not directly in vitro. Remarkably, Inauhzin inhibits cell proliferation, induces senescence and tumour-specific apoptosis, and represses the growth of xenograft tumours derived from p53-harbouring H460 and HCT116 cells without causing apparent toxicity to normal tissues and the tumour-bearing SCID mice.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	20.0	42.59
DMF:PBS (pH 7.2) (1:1)	0.3	0.64
DMSO	43.0	91.57

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.13 mL	10.65 mL	21.30 mL
5 mM	0.43 mL	2.13 mL	4.26 mL
10 mM	0.21 mL	1.06 mL	2.13 mL
50 mM	0.04 mL	0.21 mL	0.43 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Jung JH, Liao JM, Zhang Q, Zeng S, Nguyen D, Hao Q, Zhou X, Cao B, Kim SH, Lu H. Inauhzin(c) inactivates c-Myc independently of p53. Cancer Biol Ther. 2015;16(3):412-9. doi: 10.1080/15384047.2014.1002698. PMID: 25692307; PMCID: PMC4622711.
2. Zhang Q, Zhou X, Wu R, Mosley A, Zeng SX, Xing Z, Lu H. The role of IMP dehydrogenase 2 in Inauhzin-induced ribosomal stress. Elife. 2014 Oct 27;3:e03077. doi: 10.7554/eLife.03077. PMID: 25347121; PMCID: PMC4209374.

In vivo study

1. Bhattarai N, Wang J, Nguyen D, Yang X, Helmers L, Paruch J, Li L, Zhang Y, Meng K, Wang A, Jayawickramarajah J, Wang B, Zeng S, Lu H. Nanoparticle encapsulation of non-genotoxic p53 activator Inauhzin-C for improved therapeutic efficacy. Theranostics. 2021 May 12;11(14):7005-7017. doi: 10.7150/thno.57404. PMID: 34093867; PMCID: PMC8171090.

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2. Zhang Q, Zeng SX, Zhang Y, Zhang Y, Ding D, Ye Q, Meroueh SO, Lu H. A small molecule Inauhzin inhibits SIRT1 activity and suppresses tumour growth through activation of p53. EMBO Mol Med. 2012 Apr;4(4):298-312. doi: 10.1002/emmm.201100211. Epub 2012 Feb 13. PMID: 22331558; PMCID: PMC3376857.

7. Bioactivity

Biological target:

Inauhzin is a dual SirT1/IMPDH2 inhibitor, and acts as an activator p53, used in the research of cancer.

In vitro activity

As expected, INZ(c) (inauhzin) treatment decreased C23 mRNA level significantly in both Boston and Raji cells (Fig. 2A), indicating INZ(c) indeed suppresses c-Myc transcriptional activity. As shown in Figure 2B, a low concentration (0.63 μM) of INZ(c) dramatically inhibited the proliferation of Raji cells. This result was confirmed by the MTT assay that showed INZ(c) suppresses cell viability of Raji cells too (Fig. 2C). To further validate these results, FACS analysis showed that INZ(c) treatment decreases the number of cells in S phase and arrests cells at G1 phase dose-dependently (Fig. 2D), which is in line with literature showing c-Myc activity is required for cells to enter S phase.25 These results show that INZ(c) inhibits the growth of lymphoma cells.

Reference: Cancer Biol Ther. 2015;16(3):412-9. https://pubmed.ncbi.nlm.nih.gov/25692307/

In vivo activity

Additionally, as shown in Figure 6C, a statistically significant difference in tumor volume as compared with the control was observed for the n-INZ-C (inauhzin) treated mice starting from day 6 after treatment. Hence, these results indicate that n-INZ-C more effectively inhibits the growth of xenograft lung tumors than INZ-C alone.

Reference: Theranostics. 2021 May 12;11(14):7005-7017. https://pubmed.ncbi.nlm.nih.gov/34093867/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.