# KJ Pyr 9

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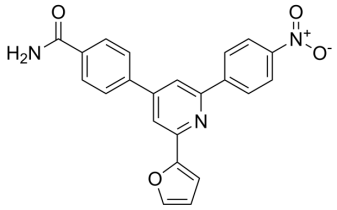
| **Cat. No.:** | HY-19735 |
| **CAS No.:** | 581073-80-5 |
| **Molecular Formula:** | $C_{22}H_{15}N_3O_4$ |
| **Molecular Weight:** | 385.37 |
| **Target:** | c-Myc; Autophagy |
| **Pathway:** | Apoptosis; Autophagy |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent -80°C 2 years<br>-20°C 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (324.36 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.5949 mL | 12.9745 mL | 25.9491 mL |
| | 5 mM | 0.5190 mL | 2.5949 mL | 5.1898 mL |
| | 10 mM | 0.2595 mL | 1.2975 mL | 2.5949 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.49 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.49 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.08 mg/mL (5.40 mM); Suspended solution; Need ultrasonic

## BIOLOGICAL ACTIVITY

**Description**

KJ Pyr 9 is an inhibitor of MYC with a $K_d$ of 6.5 nM in in vitro assay.

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

Kd: 6.5±1.0 nM (MYC)[1]

**In Vitro**

KJ Pyr 9 (KJ-Pyr-9) interferes with MYC-MAX complex formation in the cell in a protein fragment complementation assay[1]. KJ Pyr 9 specifically inhibits MYC-induced oncogenic transformation in cell culture and has no or only weak effects on the oncogenic activity of several unrelated oncoproteins[1].

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| | KJ Pyr 9 preferentially interferes with the proliferation of MYC-overexpressing human and avian cells and specifically reduces the MYC-driven transcriptional signature[1].<br>KJ Pyr 9 against three cell lines (NCI-H460, MDA-MB-231, and SUM-159PT) is tested known to be dependent on increased MYC activity[1].<br>KJ Pyr 9 can inhibit the proliferation of all cell lines with $IC_{50}$ values between 5 and 10 μM[1].<br>KJ Pyr 9 is more sensitive ($IC_{50}$ values between 1 and 2.5 μM) for the proliferation of Burkitt lymphoma cell lines with constitutively high expression of c-MYC[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | KJ Pyr 9 (i.p.; 10 mg/kg; daily; for 31 d) has the ability to halt tumor growth[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

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| **Cell Assay** [1] | Assays used staining with the redox dye resazurin to measure cell viability. Cells are seeded at $10^3$ per 100 μL well in 96-well plates and grown in the presence of 2.5% FBS. MDA-MB-231 cells are cultured in DMEM; SUM-159PT cells are cultured in HAM's F12; and NCI-H460 cells are cultured in RPMI-1640. MDA-MB-231 cells are exposed to KJ Pyr 9 (KJ-Pyr-9) for 216 h with fresh compound-containing medium supplied at 120 and 192 h; SUM-159PT cells are exposed to the compound for 120 h and fresh medium with the appropriate compound concentrations is supplied at 48 h; and NCI-H460 cells are grown with compound for 72 h. Triplicate cultures of P493-6 cells are grown in six-well plates from a starting density of $1\times10^5$ cells per mL in 4 mL culture medium per well. Compounds are added immediately following cell seeding. Following compound addition, cells are distributed by vortexing the plate at 400 rpm for 10 s. One hundred-microliter samples are taken after vortexing and counted using a Beckman Coulter Z1 counter at 0, 12, 24, 36, 48, 60, 72, and 96 h of incubation[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration** [1] | Mice[1]<br>Ten 8-wk-old female nude mice (HSD:athymic nude-Foxn1$^{nu}$) are injected with $5\times10^6$ MDA-MB-231 cells s.c. into the left and right flanks. Cells are suspended in high-concentration Matrigel before injection. Xenograft tumors are allowed to grow until the average volume of the tumors reached 100 $mm^3$, as measured by external calipers. At this point, the mice are divided into two groups. One receive 10 mg/kg KJ Pyr 9 and the other receive vehicle only, dosed daily by i.p. injection. Tumor volume and mouse weight are measured daily. Vehicle used in all cases is 10:10:80 Tween 80:DMSO:5% dextrose in water. The mice are treated for a period of 31 d. At the end of the experiment, the mice are euthanized and tumors are excised. Tumors are weighed. Samples of each tumor are fixed in formalin for histology and frozen for Western blotting.<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Nat Genet. 2024 Mar 7.
- Cell Mol Immunol. 2022 Sep;19(9):1030-1041.
- J Exp Med. 2023 Nov 6;220(11):e20211743.
- Cell Rep Med. 2023 Apr 4;101002.
- bioRxiv. 2023.

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## REFERENCES

[1]. Hart JR, et al. Inhibitor of MYC identified in a Kröhnke pyridine library. Proc Natl Acad Sci U S A. 2014 Aug 26;111(34):12556-61.



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