# CA-5f

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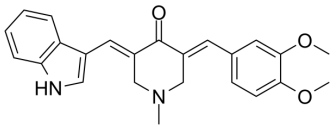
| **Cat. No.:** | HY-112698 |
| **CAS No.:** | 1370032-19-1 |
| **Molecular Formula:** | $C_{24}H_{24}N_2O_3$ |
| **Molecular Weight:** | 388.46 |
| **Target:** | Autophagy; Apoptosis |
| **Pathway:** | Autophagy; Apoptosis |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent -80°C 2 years<br>-20°C 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 77.5 mg/mL (199.51 mM; Need ultrasonic)

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.5743 mL | 12.8713 mL | 25.7427 mL |
| | 5 mM | 0.5149 mL | 2.5743 mL | 5.1485 mL |
| | 10 mM | 0.2574 mL | 1.2871 mL | 2.5743 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (5.35 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.35 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

CA-5f is a potent late-stage macroautophagy/autophagy inhibitor via inhibiting autophagosome-lysosome fusion. CA-5f increases LC3B-II (a marker to monitor autophagy) and SQSTM1 protein, and also increases ROS production. Anti-tumor activity[1].

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

Macroautophagy/autophagy[1]

**In Vitro**

CA-5f (0-40 μM, 6 hour) concentration- and time-dependently elevates the level of LC3B-II (a marker to monitor autophagy)

and SQSTM1 protein both in A549 cells and HUVECs[1].
CA-5f (20 μM, 6 hours) inhibits the degradation of autophagosomes when treated alone or in combination Bafilomycin A1 (100 nM) or Chloroquine (30 μM) in A549 cells and HUVECs[1].
CA-5f (20 μM) neither impairs the hydrolytic function nor the quantity of lysosomes[1].
CA-5f (20 μM, 96 hours) inhibits the growth of A549 cells, and less cytotoxic to normal HUVECs[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: | A549, HUVECs |
| Concentration: | 20 μM |
| Incubation Time: | 96 hours |
| Result: | Exhibited more cytotoxicity against A549 cells compared with normal HUVECs. |

Western Blot Analysis[1]

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| Cell Line: | A549 cells and HUVECs |
| Concentration: | 0-40 μM |
| Incubation Time: | 6 hours |
| Result: | Elevated LC3B-II (a marker to monitor autophagy) and SQSTM1 protein levels in a concentration- and time-dependent manner. |

**In Vivo**

CA-5f (40 mg/kg, i.p., every 2 days for up to 30 days) is well tolerated, and potently inhibits the growth of tumor in nude mice bearing A549 lung cancer cells[1].
CA-5f (40 mg/kg, i.p.) suppresses autophagic flux and induces apoptosis in nude mice bearing A549 lung cancer cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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| Animal Model: | Nude mice bearing A549 lung cancer cells[1] |
| Dosage: | 40 mg/kg |
| Administration: | Injected via caudal vein, every 2 days for up to 30 days |
| Result: | Significantly suppressed tumor volume and weight in mice, increased the number of apoptotic cells in mice. |

## REFERENCES

[1]. Zhang L, et al. Identification of compound CA-5f as a novel late-stage autophagy inhibitor with potent anti-tumor effect against non-small cell lung cancer. Autophagy. 2019 Mar;15(3):391-406.



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