# VU591

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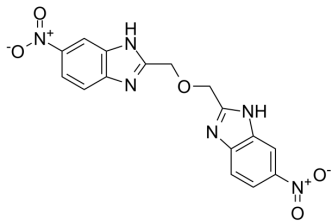
| **Cat. No.:** | HY-108585A |
| **CAS No.:** | 1222810-74-3 |
| **Molecular Formula:** | $C_{16}H_{12}N_6O_5$ |
| **Molecular Weight:** | 368.3 |
| **Target:** | Potassium Channel |
| **Pathway:** | Membrane Transporter/Ion Channel |
| **Storage:** | 4°C, protect from light<br>* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light) |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 62.5 mg/mL (169.70 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.7152 mL | 13.5759 mL | 27.1518 mL |
| | 5 mM | 0.5430 mL | 2.7152 mL | 5.4304 mL |
| | 10 mM | 0.2715 mL | 1.3576 mL | 2.7152 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 (5.65 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

VU591 is a potent, selective renal outer medullary potassium channel (ROMK or Kir1.1) inhibitor, with an $IC_{50}$ of 0.24 μM. VU591 can be used for neurological research with HY-108585 (the equivalent of VU591 hydrochloride)[1].

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

IC50: 0.24 μM (ROMK)[1].

**In Vitro**

VU591 is a selective ROMK inhibitor and a ROMK channel pore blocker. VU591 can bind serum protein and has high metabolic stability[1].

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

**In Vivo**

VU591 (i.c.v.; 1.842 μg) significantly decreases the immobile time in TST[2].

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| Animal Model: | Male ICR mice[2] |
| Dosage: | 1.842 μg |
| Administration: | i.c.v.; 1.842 μg; |
| Result: | Showed antidepressive effect in the tail suspension test (TST). |

## REFERENCES


[1]. Masayoshi Okada, et al. Antidepressive effect of an inward rectifier K+ channel blocker peptide, tertiapin-RQ. PLoS One. 2020 Nov 13;15(11):e0233815.

[2]. Bhave G, et al. Development of a selective small-molecule inhibitor of Kir1.1, the renal outer medullary potassium channel. Mol Pharmacol. 2011 Jan;79(1):42-50.





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