# ML154

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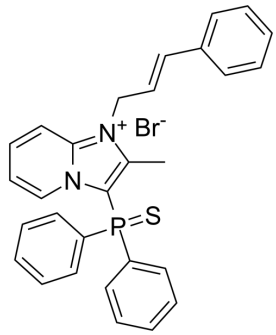
| **Cat. No.:** | HY-108626 |
| **CAS No.:** | 1345964-89-7 |
| **Molecular Formula:** | $C_{29}H_{26}BrN_2PS$ |
| **Molecular Weight:** | 545.47 |
| **Target:** | Neuropeptide Y Receptor |
| **Pathway:** | GPCR/G Protein; Neuronal Signaling |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent -80°C 6 months<br>-20°C 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 62.5 mg/mL (114.58 mM; ultrasonic and warming and heat to 60°C)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.8333 mL | 9.1664 mL | 18.3328 mL |
| | 5 mM | 0.3667 mL | 1.8333 mL | 3.6666 mL |
| | 10 mM | 0.1833 mL | 0.9166 mL | 1.8333 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

ML154 (NCGC84) is a selective, brain-penetrant and non-peptide neuropeptide S receptor (NPSR) antagonist with a $pA_2$ of 9.98. ML154 potently inhibits NPS-stimulated cellular calcium, cAMP, and ERK phosphorylation responses with $IC_{50}$ values of 36.5 nM, 22.1 nM, and 9.3 nM, respectively[1][2].

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

NPSR[1]

**In Vitro**

ML154 (NCGC84; 0.001-1 μM; 30 min ) inhibits NPS-induced ERK phosphorylation in a concentration-dependent manner[1].

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

Western Blot Analysis[1]

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| Cell Line: | CHO cells expressing NPSR |
| Concentration: | 0.001 μM, 0.01 μM, 0.1 μM, 1 μM |
| Incubation Time: | 30 min |

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| Result: | Exhibited the most potent inhibition on NPS-induced ERK phosphorylation. |

**In Vivo**

ML154 (NCGC84; 1 mg/kg; i.p; once) blocks alcohol-induced ERK-phosphorylation in the rat central amygdala, a region involved in regulation of alcohol intake. ML154 also decreases operant alcohol self-administration, and lowers motivation for alcohol reward as measured using progressive ratio responding[1].

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

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| Animal Model: | Male Wistar rats (300-350 g) injected with alcohol[1] |
| Dosage: | 1 mg/kg (10% Solutol, 10% N,N-dimethylacetamide, and 80% 10 mM PBS, pH 7.4) |
| Administration: | Intraperitoneal injection; once |
| Result: | Inhibited alcohol-induced central ERK phosphorylation in vivo. |

## REFERENCES


[1]. İrem Akçalı, et al. The regulatory role of central neuropeptide-S in locomotion. Peptides. 2023 Dec:170:171110.

[2]. Annika Thorsell, et al. A novel brain penetrant NPS receptor antagonist, NCGC00185684, blocks alcohol-induced ERK-phosphorylation in the central amygdala and decreases operant alcohol self-administration in rats. J Neurosci. 2013 Jun 12;33(24):10132-42.





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