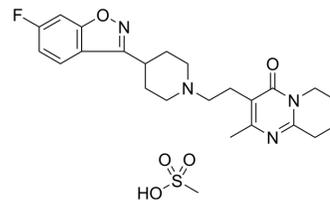


## Risperidone mesylate

Cat. No.:	HY-11018B
CAS No.:	666179-96-0
Molecular Formula:	C <sub>24</sub> H <sub>31</sub> FN <sub>4</sub> O <sub>5</sub> S
Molecular Weight:	506.59
Target:	5-HT Receptor; Dopamine Receptor; P-glycoprotein
Pathway:	GPCR/G Protein; Neuronal Signaling; Membrane Transporter/Ion Channel
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Risperidone mesylate (R 64 766 mesylate) is a serotonin 5-HT <sub>2</sub> receptor blocker, P-Glycoprotein inhibitor and potent dopamine D <sub>2</sub> receptor antagonist, with K <sub>i</sub> s of 4.8, 5.9 nM for 5-HT <sub>2A</sub> and dopamine D <sub>2</sub> receptor, respectively.		
<b>IC<sub>50</sub> &amp; Target</b>	5-HT <sub>2A</sub> Receptor 4.8 nM (K <sub>i</sub> )	D <sub>2</sub> Receptor 5.9 nM (K <sub>i</sub> )	P-glycoprotein
<b>In Vitro</b>	Risperidone is a serotonin 5-HT <sub>2</sub> receptor blocker, P-Glycoprotein inhibitor and potent dopamine D <sub>2</sub> receptor antagonist, with K <sub>i</sub> s of 4.8, 5.9 nM for 5-HT <sub>2A</sub> and dopamine D <sub>2</sub> receptor, respectively. Risperidone dose-dependently inhibited the release of IL-12 in mature DCs, while the production of IL-10 is dose-dependently increased by Risperidone. A high dose of risperidone can induce TNF-α release from mature DCs <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.		
<b>In Vivo</b>	In the first experiment, body weight is found to be slightly but significantly lower in the Risperidone-treated rats as a function of age. Similar to the first experiment, age-dependent differences in body weight are also observed between the three treatment groups in the second locomotor experiment. Rats treated with the 3.0 mg/kg dose of Risperidone weigh less than vehicle-treated rats on postnatal days 35, 38, and 41. The third locomotor experiment involves larger, mixed-sex litters in contrast to the smaller, single-sex litters used in the first two experiments. As noted for the first two experiments, rats treated with Risperidone in the third experiment gain less weight in an age-dependent manner <sup>[4]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

### PROTOCOL

<b>Animal Administration</b> <sup>[4]</sup>	<p>Rats<sup>[4]</sup></p> <p>A total of 211 Long-Evans rats (56 females and 155 males) are used. Within each study, three groups of roughly equal numbers of rats receive injections of 1.0 mg/kg of Risperidone, 3.0 mg/kg of Risperidone, or the vehicle used for the Risperidone solution as a control. In the first experiment, twenty-six male rats (n=9 in the vehicle and 3.0 mg/kg Risperidone groups; n=8 in the 1.0 mg/kg Risperidone group) are tested for locomotor activity for 20 minutes a day beginning at postnatal day 49 and continuing daily until postnatal day 53. A second experiment determined if the locomotor effects of early-life Risperidone treatment persisted well into adulthood. A third experiment ascertains the effects of sex on the locomotor effects of early-life Risperidone seen in young adult rats. In this experiment, sixty male (n=20 per treatment group) and 56 female (n=19 rats in the vehicle and 3.0 mg/kg dose group, n=18 in the 1.0 mg/kg dose group) rats are treated.</p>
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A fourth experiment assessed reversal learning during adulthood in rats administered earlylife risperidone. Forty-two male rats (n=14 per treatment group) are treated<sup>[4]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## CUSTOMER VALIDATION

- J Med Chem. 2021 Mar 11;64(5):2725-2738.
- Int J Nanomedicine. 2023 Feb 10.

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## REFERENCES

- [1]. Zhu HJ, et al. Risperidone and paliperidone inhibit p-glycoprotein activity in vitro. Neuropsychopharmacology. 2007 Apr;32(4):757-64.
- [2]. Chen ML, et al. Risperidone modulates the cytokine and chemokine release of dendritic cells and induces TNF- $\alpha$ -directed cellapoptosis in neutrophils. Int Immunopharmacol. 2012 Jan;12(1):197-204.
- [3]. Bardgett ME, et al. Adult rats treated with risperidone during development are hyperactive. Exp Clin Psychopharmacol. 2013 Jun;21(3):259-67.
- [4]. Nyberg S, et al. 5-HT<sub>2</sub> and D<sub>2</sub> dopamine receptor occupancy in the living human brain. A PET study with risperidone. Psychopharmacology (Berl). 1993;110(3):265-72.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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