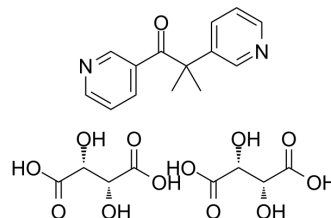


## Metyrapone Tartrate

<b>Cat. No.:</b>	HY-B1232A
<b>CAS No.:</b>	908-35-0
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>26</sub> N <sub>2</sub> O <sub>13</sub>
<b>Molecular Weight:</b>	526.45
<b>Target:</b>	Endogenous Metabolite; Cytochrome P450; Autophagy; mTOR
<b>Pathway:</b>	Metabolic Enzyme/Protease; Autophagy; PI3K/Akt/mTOR
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Metyrapone (Su-4885) Tartrate is a potent and orally active 11 $\beta$ -hydroxylase inhibitor and an autophagy activator, also inhibits the production of aldosterone. Metyrapone Tartrate inhibits synthesis of endogenous adrenal corticosteroid, decreases glucocorticoid levels, and also affects behavior and emotion. In addition, Metyrapone Tartrate increases the efficiency of autophagic process via downregulation of mTOR pathway, and interacts with <i>Pseudomonas putida</i> cytochrome P-450. Metyrapone Tartrate can be used for researching Cushing's syndrome and depression <sup>[1][2][3][4][5]</sup> .								
<b>IC<sub>50</sub> &amp; Target</b>	11 $\beta$ -hydroxylase, Aldosterone, CYP450, Autophagy <sup>[1][4][5]</sup>								
<b>In Vitro</b>	Metyrapone (100 $\mu$ M; 2 h) hyperactivates autophagy in HepG2, and delays the activation of apoptosis at severe endoplasmic reticulum (ER) stress <sup>[5]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
<b>In Vivo</b>	Metyrapone (25 or 50 mg/kg; SC, single dosage) decreases the stress-induced increase in plasma corticosterone levels, significantly impairs acquisition performance at high dosage, and increases open arm activity at low dosage <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
	<table border="1"> <tr> <td>Animal Model:</td> <td>Male Sprague-Dawley rats (n=179; 270-300g)<sup>[1]</sup></td> </tr> <tr> <td>Dosage:</td> <td>25 or 50 mg/kg (in a volume of 2.0 ml/kg)</td> </tr> <tr> <td>Administration:</td> <td>SC, single dosage</td> </tr> <tr> <td>Result:</td> <td>Dose-dependently decreased the stress-induced increase in plasma corticosterone levels in the water maze test; the high level dose significantly impaired acquisition performance in the water maze and decreased fear-induced immobility; the lower dose increased open arm activity.</td> </tr> </table>	Animal Model:	Male Sprague-Dawley rats (n=179; 270-300g) <sup>[1]</sup>	Dosage:	25 or 50 mg/kg (in a volume of 2.0 ml/kg)	Administration:	SC, single dosage	Result:	Dose-dependently decreased the stress-induced increase in plasma corticosterone levels in the water maze test; the high level dose significantly impaired acquisition performance in the water maze and decreased fear-induced immobility; the lower dose increased open arm activity.
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### CUSTOMER VALIDATION

- Immunity. 2024 Feb 13;57(2):364-378.e9.

- Brain Behav Immun. 2019 Nov;82:178-187.
- J Pharmaceut Biomed. 2023 May 10.
- J Neuroendocrinol. e13212.
- Biochem Biophys Res Commun. 2020 Jun 11;526(4):913-919.

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## REFERENCES

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- [1]. Roozendaal B, et al. Dose-dependent suppression of adrenocortical activity with metyrapone: effects on emotion and memory. *Psychoneuroendocrinology*. 1996 Nov;21(8):681-93.
- [2]. Jahn H, et al. Metyrapone as additive treatment in major depression: a double-blind and placebo-controlled trial. *Arch Gen Psychiatry*. 2004 Dec;61(12):1235-44.
- [3]. Daniel E, et al. Effectiveness of Metyrapone in Treating Cushing's Syndrome: A Retrospective Multicenter Study in 195 Patients. *J Clin Endocrinol Metab*. 2015 Nov;100(11):4146-54.
- [4]. Peterson JA, Ullrich V, Hildebrandt AG. Metyrapone interaction with *Pseudomonas putida* cytochrome P-405. *Arch Biochem Biophys*. 1971 Aug;145(2):531-42.
- [5]. Holczer M, et al. A Comprehensive Systems Biological Study of Autophagy-Apoptosis Crosstalk during Endoplasmic Reticulum Stress. *Biomed Res Int*. 2015;2015:319589.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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