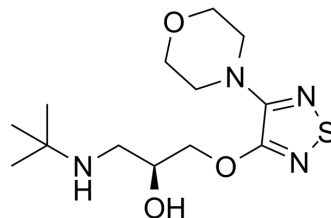


## Timolol

Cat. No.:	HY-17494
CAS No.:	26839-75-8
Molecular Formula:	C <sub>13</sub> H <sub>24</sub> N <sub>4</sub> O <sub>3</sub> S
Molecular Weight:	316.42
Target:	Adrenergic Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Timolol is a $\beta$ -blocker available for both topical and systemic administration. Topical Timolol is primarily used to reduce intraocular pressure with open-angle glaucoma and ocular hypertension. Timolol can also be used for the research of infantile hemangiomas, hypertension, myocardial infarction, migraine prophylaxis, and atrial fibrillation. Timolol also has cardioprotective effect <sup>[1][2]</sup> .								
<b>IC<sub>50</sub> &amp; Target</b>	$\beta$ adrenergic receptor								
<b>In Vitro</b>	Timolol can significantly prevent the increased lipid peroxidation level of the heart from diabetic rats. Timolol can induce a well-balanced ratio between oxidative stress and antioxidant defense system in the diabetic animals, can have an important cardioprotection against diabetes-induced ERS and associated apoptotic effects <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
<b>In Vivo</b>	Timolol has a cardioprotective effect via inhibition of ERS response in diabetic rats <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
	<table> <tr> <td>Animal Model:</td> <td>Experimental diabetes model: 3-month old male Wistar rats<sup>[3]</sup>.</td> </tr> <tr> <td>Dosage:</td> <td>5 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Timolol (5 mg/kg daily for 12-week)</td> </tr> <tr> <td>Result:</td> <td>Showed cardioprotective effect.</td> </tr> </table>	Animal Model:	Experimental diabetes model: 3-month old male Wistar rats <sup>[3]</sup> .	Dosage:	5 mg/kg	Administration:	Timolol (5 mg/kg daily for 12-week)	Result:	Showed cardioprotective effect.
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Result:	Showed cardioprotective effect.								

### CUSTOMER VALIDATION

- Protein Cell. 2019 Mar;10(3):178-195.
- Patent. US20230090708A1.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

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## REFERENCES

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[1]. James Barnes; Majid Moshirfar. Timolol.

[2]. E. Ansari, et al. Treatment of open-angle glaucoma and ocular hypertension with preservative-free tafuprost/timolol fixed-dose combination therapy: 6 case reports and clinical outcomes. BMC Ophthalmol. 2022 Apr 2;22(1):152.

[3]. Figen Amber Cicek, et al. Beta-blocker timolol alleviates hyperglycemia-induced cardiac damage via inhibition of endoplasmic reticulum stress. J Bioenerg Biomembr. 2014 Oct;46(5):377-87.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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