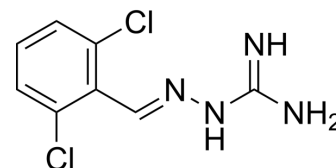


Guanabenz

Cat. No.:	HY-12724
CAS No.:	5051-62-7
Molecular Formula:	C ₈ H ₈ Cl ₂ N ₄
Molecular Weight:	231.08
Target:	Adrenergic Receptor; Parasite
Pathway:	GPCR/G Protein; Neuronal Signaling; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Guanabenz is an orally active α -2-adrenoceptor agonist. Guanabenz has antihypertensive effect and antiparasitic activity. Guanabenz interferes ER stress-signalling and has protective effects in cardiac myocytes. Guanabenz also is used for the research of high blood pressure ^{[1][2][3]} .																			
IC₅₀ & Target	Toxoplasma	Toxoplasma																		
In Vitro	<p>Guanabenz (0.5-50 μM, 24 h) is treated with increasing concentrations for 24 hours not affect cell viability^[1].</p> <p>Guanabenz (0.5-50 μM, 24 h) alone not affects the UPR targets, neither on mRNA or protein level nor the phosphorylation status of eIF2α. Guanabenz also not induces GADD34 or the constitutively active form CReP^[1].</p> <p>Guanabenz (0.5-50 μM, 24 h) alone not induces ER stress in neonatal rat cardiomyocytes^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Neonatal rat cardiac myocytes (NRCM)</td> </tr> <tr> <td>Concentration:</td> <td>0.5–50 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Did not affect cell survival.</td> </tr> </table> <p>RT-PCR^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Neonatal rat cardiac myocytes (NRCM)</td> </tr> <tr> <td>Concentration:</td> <td>0.5–50 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Did not affect levels of UPR targets.</td> </tr> </table> <p>Western Blot Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Neonatal rat cardiac myocytes (NRCM)</td> </tr> </table>		Cell Line:	Neonatal rat cardiac myocytes (NRCM)	Concentration:	0.5–50 μ M	Incubation Time:	24 h	Result:	Did not affect cell survival.	Cell Line:	Neonatal rat cardiac myocytes (NRCM)	Concentration:	0.5–50 μ M	Incubation Time:	24 h	Result:	Did not affect levels of UPR targets.	Cell Line:	Neonatal rat cardiac myocytes (NRCM)
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	Concentration:	0.5–50 μ M
	Incubation Time:	24 h
	Result:	Increased the levels of low panel concentration-dependent UPR targets proteins.
In Vivo	<p>Guanabenz (5 mg/kg/day; i.p.; for 3 weeks) can reproducibly reduce brain cyst burden^[2].</p> <p>Guanabenz (5 mg /kg/d, i.p., oral; 10 mg/kg/d, gavage; for 3 weeks) reverses Toxoplasma-induced hyperactivity in latently infected mice^[2].</p> <p>Guanabenz (100 and 320 μg/kg and 1 mg/kg, i.v., over a period of 5 min at intervals of 40 min) reduces sympathetic outflow, heart rate and blood pressure in debuffered cats^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
	Animal Model:	BALB/cJ mice ^[2]
	Dosage:	5 mg/kg
	Administration:	5 mg/kg/day; i.p. ; for 3 weeks
	Result:	Reduced the latent brain cysts in both male and female BALB/cJ mice.
	Animal Model:	BALB/cJ mice ^[2]
	Dosage:	5 mg/kg; 10 mg/kg
	Administration:	5 mg /kg/d, i.p., oral; 10 mg/kg/d, gavage; for 3 weeks
	Result:	Reversed parasite-induced hyperactivity to near-baseline levels.
	Animal Model:	Cats ^[3]
	Dosage:	100 and 320 μ g/kg and 1 mg/kg
	Administration:	100 and 320 μ g/kg and 1 mg/kg, i.v., over a period of 5 min at intervals of 40 min
Result:	Declined markedly blood pressure and nerve activity.	

REFERENCES

- [1]. Christiane Neuber, et al. Guanabenz interferes with ER stress and exerts protective effects in cardiac myocytes. PLoS One. 2014 Jun 3;9(6):e98893.
- [2]. Jennifer Martynowicz, et al. Guanabenz Reverses a Key Behavioral Change Caused by Latent Toxoplasmosis in Mice by Reducing Neuroinflammation. mBio. 2019 Apr 30;10(2):e00381-19.
- [3]. T Baum, et al. Studies on the centrally mediated hypotensive activity of guanabenz. Eur J Pharmacol. 1976 May;37(1):31-44.

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

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