# Product Data Sheet

Product Name: Dimebolin
Cat. No.: GC15723

## Chemical Properties

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|---|---|---|---|
| Cas. No. | 3613-73-8 | | |
| Chemical Name | 2,3,4,5-tetrahydro-2,8-dimethyl-5-[2-(6-methyl-3-pyridinyl)ethyl]-1H-pyrido[4,3-b]indole | | |
| SMILES | CC1=CC=C(N(CCC2=CC=C(C)N=C2)C3=C4CN(C)CC3)C4=C1 | | |
| Formula | $C_{21}H_{25}N_3$ | M.Wt | 319.4 |
| Solubility | ≤30mg/ml in ethanol;1mg/ml in DMSO;3mg/ml in dimethyl formamide | Storage | Store at -20°C |
| General tips | For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months. | | |
| Shipping Condition | Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request. | | |
| Structure | Dimebolin | | |

## Background

Dimebolin is an orally-available antihistamine drug with a long history of clinical use in Russia [1][2][3][4].

Dimebolin has been proposed to be useful for treating neurodegenerative disorders, including Alzheimer's disease (AD) and Huntington's disease (HD). Dimebon might exhibit efficacy by blocking NMDA receptors or voltage-gated Ca2+ channels and by preventing mitochondrial permeability pore transition [3].

Dimebolin is an orally-available antihistamine drug. Dimebon improved survival of cerebellar granule cells during long-term incubation with Aβ25-35. Dimebolin also blocked potential-dependent Ca(2+) entry into neurons by about 20% by blocking L-type Ca(2+) channels [4]. In the cerebellum cell culture, Dimebolin protected neurons against the neurotoxic action of Aβ25-35 with EC50 value of 25 μM. On isolated rat ileum intestine, Dimebolin displayed Ca2+-blocking properties with IC50 value of 57 μM.


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Dimebon also exhibited anticholinesterase activity with IC50 values of 7.9 μM and 42 μM for butyryl-choline esterase and acetylcholine esterase, respectively [5].

In rats treated with the neurotoxin AF64A, Dimebolin exhibited cognition and memory-enhancing properties. In mice, Dimebolin prevented NMDA-induced seizures with EC50 value of 42 ± 6 mg/kg [5].

References:

[1]. Lermontova NN, Lukoyanov NV, Serkova TP, et al. Dimebon improves learning in animals with experimental Alzheimer's disease. Bull Exp Biol Med. 2000 Jun;129(6):544-6.
[2]. Doody RS, Gavrilova SI, Sano M, et al. Effect of dimebon on cognition, activities of daily living, behaviour, and global function in patients with mild-to-moderate Alzheimer's disease: a randomised, double-blind, placebo-controlled study. Lancet. 2008 Jul 19;372(9634):207-15.
[3]. Wu J, Li Q, Bezprozvanny I. Evaluation of Dimebon in cellular model of Huntington's disease. Mol Neurodegener. 2008 Oct 21;3:15.
[4]. Lermontova NN, Redkozubov AE, Shevtsova EF, et al. Dimebon and tacrine inhibit neurotoxic action of beta-amyloid in culture and block L-type Ca(2+) channels. Bull Exp Biol Med. 2001 Nov;132(5):1079-83.
[5]. Bachurin S, Bukatina E, Lermontova N, et al. Antihistamine agent Dimebon as a novel neuroprotector and a cognition enhancer. Ann N Y Acad Sci. 2001 Jun;939:425-35.


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