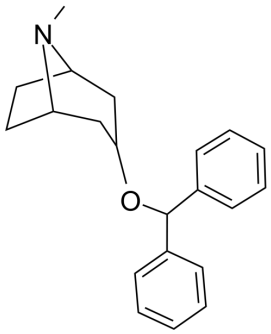
Benztropine

Cat. No.:	HY-B0520
CAS No.:	86-13-5
Molecular Formula:	$C_{21}H_{25}NO$
Molecular Weight:	307.43
Target:	Dopamine Receptor; mAChR; Histamine Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling; Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Benztropine (Benzatropine; Benzotropine) is an orally active centrally acting anticholinergic agent that can be used for Parkinson's disease research[1]. Benztropine is an anti-histamine agent and a dopamine re-uptake inhibitor. Benztropine is also a human D_2 dopamine receptor allosteric antagonist. Benztropine mesylate also has anti-CSCs (cancer stem cells) effects[2].

In Vitro

Benztropine (0.1-10 μM; 72 h) inhibits the growth of MDA-MB-231 cells with an IC_{50} value about 5 μM. In MDA-MB-231 cells and 4T1-luc2 cells, Benztropine reduces the size as well as the number of mammospheres significantly in a dose-dependent manne[1].

Benztropine inhibits functions of cancer stem cells (CSCs) via the acetylcholine receptors, dopamine transporters/receptors, and/or histamine receptors[1].

Benztropine induces the differentiation of oligodendrocytes through M1 and M3 muscarinic receptors and enhanced remyelination[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	MDA-MB-231
Concentration:	0, 0.1, 0.625, 1.25, 2.5, 5, 10 μM
Incubation Time:	72 hours
Result:	Inhibited cells growth of MDA-MB-231 with an IC_{50} value about 5.0 μM.

Cell Viability Assay[1]

Cell Line:	MDA-MB-231
Concentration:	0, 1, 2, 5 μM
Incubation Time:	4-6 days
Result:	Suppressed mammosphere formation and self-renewal capacities of BCSCs in a dose-dependent manner in vitro.

In Vivo

Benztropine (5 μM, 4 weeks) inhibits tumor-initiating potential in a 4T1 mouse model[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Balb/c mice bearing 4T1 breast tumors[1]
Dosage:	1.5 mg/kg
Administration:	Injection; 3 weeks
Result:	Reduced the tumor size and weight significantly without body weight changing.

CUSTOMER VALIDATION

- J Clin Invest. 2021 Dec 29;e150101.
- Front Cell Neurosci. 2018 Sep 11;12:309.
- PLoS Negl Trop Dis. 2019 Aug 20;13(8):e0007681.
- Viruses. 2021 Jun 28;13(7):1255.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Santosh S Kulkarni, et al. Comparative structure-activity relationships of benztropine analogues at the dopamine transporter and histamine H(1) receptors. Bioorg Med Chem. 2006 Jun 1;14(11):3625-34.

[2]. Jihong Cui, et al. New use of an old drug: inhibition of breast cancer stem cells by benztropine mesylate. Oncotarget. 2017 Jan 3;8(1):1007-1022.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA