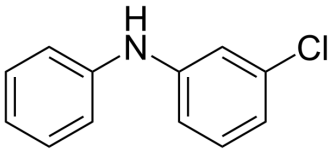
3-Chlorodiphenylamine

Cat. No.:	HY-131948
CAS No.:	101-17-7
Molecular Formula:	$C_{12}H_{10}ClN$
Molecular Weight:	203.67
Target:	Potassium Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	3-Chlorodiphenylamine is a high affinity Ca^{2+} sensitizer of cardiac muscle. 3-Chlorodiphenylamine is based on diphenylamine and binds to the isolated N-domain of cardiac troponin C (cTnC) (K_d=6 μM). 3-Chlorodiphenylamine is an excellent starting scaffold for the development of more potent Ca^{2+}-sensitizing compounds due to its small size, and can be used for systolic heart failure research[1].
IC_{50} & Target	Kd: 6 μM (N-domain of cardiac troponin C (cTnC)) Kd: 10 μM (cNTnC–cSp chimera)[1]
In Vitro	3-Chlorodiphenylamine is able to bind highly (K_d=10 μM) to a chimeric protein consisting of the regulatory N-domain of cTnC (cNTnC) and the switch region of cTnI (cNTnC–cSp chimera)[1]. 3-Chlorodiphenylamine (100 μM) results in a 1.5-fold increase in the Ca^{2+} sensitivity of force development without altering the maximal or resting forces in skinned ventricular trabeculae[1]. 3-Chlorodiphenylamine (25-100 μM) increases Ca^{2+} sensitivity of the N-domain of intact cTnC after reconstitution into the cTn complex (cTnC complexed with cTnI and cTnT) in a concentration-dependent manner. It exhibits pCa_{50}s with 6.39±0.01, 6.65±0.01, and 6.73±0.02 in the presence of 25, 50, and 100 μM 3-Chlorodiphenylamine, respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Svetlana B Tikunova, et al. 3-Chlorodiphenylamine activates cardiac troponin by a mechanism distinct from bepridil or TFP. J Gen Physiol. 2019 Jan 7;151(1):9-17.

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