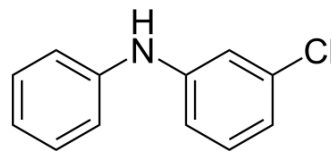


## 3-Chlorodiphenylamine

Cat. No.:	HY-131948
CAS No.:	101-17-7
Molecular Formula:	C <sub>12</sub> H <sub>10</sub> 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

<b>Description</b>	3-Chlorodiphenylamine is a high affinity Ca <sup>2+</sup> sensitizer of cardiac muscle. 3-Chlorodiphenylamine is based on diphenylamine and binds to the isolated N-domain of cardiac troponin C (cTnC) (K <sub>d</sub> =6 μM). 3-Chlorodiphenylamine is an excellent starting scaffold for the development of more potent Ca <sup>2+</sup> -sensitizing compounds due to its small size, and can be used for systolic heart failure research <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	K <sub>d</sub> : 6 μM (N-domain of cardiac troponin C (cTnC)) K <sub>d</sub> : 10 μM (cNTnC-cSp chimera) <sup>[1]</sup>
<b>In Vitro</b>	3-Chlorodiphenylamine is able to bind highly (K <sub>d</sub> =10 μM) to a chimeric protein consisting of the regulatory N-domain of cTnC (cNTnC) and the switch region of cTnI (cNTnC-cSp chimera) <sup>[1]</sup> . 3-Chlorodiphenylamine (100 μM) results in a 1.5-fold increase in the Ca <sup>2+</sup> sensitivity of force development without altering the maximal or resting forces in skinned ventricular trabeculae <sup>[1]</sup> . 3-Chlorodiphenylamine (25-100 μM) increases Ca <sup>2+</sup> 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 <sub>50</sub> 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 <sup>[1]</sup> . 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.

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

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