# Stachydrine hydrochloride

**Cat. No.:** HY-N0738

**CAS No.:** 4136-37-2

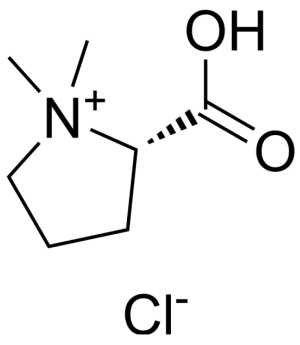
**Molecular Formula:** $C_7H_{14}ClNO_2$

**Molecular Weight:** 179.64

**Target:** NF-κB; Endogenous Metabolite

**Pathway:** NF-κB; Metabolic Enzyme/Protease

**Storage:** 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : 100 mg/mL (556.67 mM; Need ultrasonic)
DMSO : 100 mg/mL (556.67 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 5.5667 mL | 27.8334 mL | 55.6669 mL |
| 5 mM | 1.1133 mL | 5.5667 mL | 11.1334 mL |
| 10 mM | 0.5567 mL | 2.7833 mL | 5.5667 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (556.67 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 3 mg/mL (16.70 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3 mg/mL (16.70 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3 mg/mL (16.70 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Stachydrine hydrochloride is the major active constituent of Leonurus artemisia, which is a potential therapy for cardiovascular diseases[2]. Stachydrine can inhibit the NF-κB signal pathway. Anti-hypertrophic activities[1].

| $IC_{50}$ & Target | p65 | Human Endogenous Metabolite |
|---|---|---|

**In Vitro**

Intervention of Stachydrine significantly suppresses the level of p-IκB (ser32) protein in the cytosol and NF-κB (p65) protein

in the nucleus (P<0.05)[1].
Treatment with Stachydrine hydrochloride (50 μM, 200 μM, 500 μM and 1000 μM) noticeably inhibited MCF-7 and T47D cell proliferation in dose- and time-dependent manner[2].
High concentrations (500 μM and 1000 μM) of Stachydrine significantly increased the frequency of both studied cell lines at the G1 phase of cell cycle, suggesting that Stachydrine hydrochloride could cause cell cycle arrest[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

**Cell Assay**

Cell Proliferation Assay[2]
Cell Cycle Analysis[2]
MCF-7 and T47D cells
50 μM, 200 μM, 500 μM and 1000 μM
24 and 48 hours
CCK-8 cell counting assay is used to detect proliferation of MCF-7 and T47D cells when treated with Stachydrine hydrochloride at four different concentrations (50 μM, 200 μM, 500 μM and 1000 μM) for 24 and 48 hours. Cell cycle analysis of MCF-7 and T47D cells is determined by flow cytometry. Experiments are performed in triplicates and representative images are presented.
Note: Inhibited proliferation and induced G1 phase arrest in MCF-7 and T47D cells.
[1] Guo W, et al. Effect of Leonurus Stachydrine on myocardial cell hypertrophy. Zhong Yao Cai. 2012 Jun;35(6):940-3.https://www.ncbi.nlm.nih.gov/pubmed/23236831[2] Am J Transl Res. 2017 Apr 15;9(4):1834-1844. eCollection 2017.Stachydrine hydrochloride inhibits proliferation and induces apoptosis of breast cancer cells via inhibition of Akt and ERK pathways.Wang M1, Shu ZJ1, Wang Y1, Peng W1https://www.ncbi.nlm.nih.gov/pubmed/28469788
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Food Funct. 2020 Dec 1;11(12):10864-10875.
- J Agric Food Chem. 2019 Sep 4;67(35):9805-9811.
- J Cardiothorac Surg. 2023 Sep 26;18(1):265.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Guo W, et al. Effect of Leonurus Stachydrine on myocardial cell hypertrophy. Zhong Yao Cai. 2012 Jun;35(6):940-3.

[2]. Wang M, et al. Stachydrine hydrochloride inhibits proliferation and induces apoptosis of breast cancer cells via inhibition of Akt and ERK pathways. Am J Transl Res. 2017 Apr 15;9(4):1834-1844.



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