# Fatostatin

**Cat. No.:** HY-14452

**CAS No.:** 125256-00-0

**Molecular Formula:** $C_{18}H_{18}N_2S$

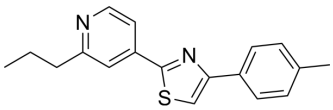
**Molecular Weight:** 294.41

**Target:** Fatty Acid Synthase (FASN)

**Pathway:** Metabolic Enzyme/Protease

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 2 years |
| | -20°C | 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 27 mg/mL (91.71 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.3966 mL | 16.9831 mL | 33.9662 mL |
| 5 mM | 0.6793 mL | 3.3966 mL | 6.7932 mL |
| 10 mM | 0.3397 mL | 1.6983 mL | 3.3966 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.49 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (8.49 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (8.49 mM); Suspended solution; Need ultrasonic

## BIOLOGICAL ACTIVITY

**Description**

Fatostatin (125B11), a specific inhibitor of SREBP activation, impairs the activation of SREBP-1 and SREBP-2. Fatostatin binds to SCAP (SREBP cleavage-activating protein), and inhibits the ER-Golgi translocation of SREBPs. Fatostatin decreases the transcription of lipogenic genes in cells. Fatostatin possesses antitumor properties, and lowers hyperglycemia in ob/ob mice[1][2].

**In Vitro**

Fatostatin (125B11) (0.1-1 μM; 3 days) inhibits the androgen-independent prostate cancer cell proliferation ($IC_{50}$=0.1 μM) in

an independent of the known IGF1-signaling pathway. Fatostatin inhibits insulin-induced adipogenesis of 3T3-L1 cells[1]. Fatostatin directly binds SCAP and blocks its ER-to-Golgi transport with $IC_{50}$ of 2.5 and 10 μM in mammalian cells.

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

Cell Proliferation Assay[1]

| | |
|---|---|
| Cell Line: | DU-145 cells |
| Concentration: | 0.1, 1 μM |
| Incubation Time: | 3 days |
| Result: | Impaired the IGF1-induced growth at an $IC_{50}$ of 0.1 μM. |

**In Vivo**

Fatostatin (125B11) (30 mg/kg; 150 μL; i.p. injection; daily for 28 days) reduces adiposity, ameliorated fatty liver by reducing triglyceride (TG) storage, and lowered hyperglycemia in ob/ob mice[2].

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

| | |
|---|---|
| Animal Model: | Four-to-five-week-old homozygous male obese (ob/ob) mice (C57BL/6J)[2] |
| Dosage: | 30 mg/kg; 150 μL |
| Administration: | i.p. injection; daily for 28 days |
| Result: | Blocked increases in body weight, blood glucose, and hepatic fat accumulation in obese ob/ob mice, even under uncontrolled food intake. |

## CUSTOMER VALIDATION

- Cell Metab. 2021 Aug 3;33(8):1655-1670.e8.
- Autophagy. 2021 Jul;17(7):1592-1613.
- Cell Death Differ. 2021 Jun;28(6):2001-2018.
- J Exp Clin Cancer Res. 2019 May 29;38(1):228.
- Cell Death Dis. 2021 May 26;12(6):544.

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## REFERENCES


[1]. Li X et al. Fatostatin displays high antitumor activity in prostate cancer by blocking SREBP-regulated metabolic pathways and androgen receptor signaling. Mol Cancer Ther. 2014 Apr;13(4):855-66.

[2]. Shao W et al. Fatostatin blocks ER exit of SCAP but inhibits cell growth in a SCAP-independent manner. J Lipid Res. 2016 Aug;57(8):1564-73.

[3]. Inoue K et al. Fatostatin, an SREBP inhibitor, prevented RANKL-induced bone loss by suppression of osteoclast differentiation. Biochim Biophys Acta. 2015 Nov;1852(11):2432-41.

[4]. Choi Y, et al. Identification of bioactive molecules by adipogenesis profiling of organic compounds. J Biol Chem. 2003 Feb 28;278(9):7320-4.

[5]. Kamisuki S, et al. A small molecule that blocks fat synthesis by inhibiting the activation of SREBP. Chem Biol. 2009 Aug 28;16(8):882-92.

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

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