# Saccharopine hydrochloride

**Cat. No.:** HY-W040307B

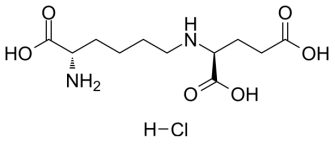
**Molecular Formula:** $C_{11}H_{21}ClN_2O_6$

**Molecular Weight:** 313

**Target:** Endogenous Metabolite

**Pathway:** Metabolic Enzyme/Protease

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




## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : 250 mg/mL (798.72 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 3.1949 mL | 15.9744 mL | 31.9489 mL |
| | 5 mM | 0.6390 mL | 3.1949 mL | 6.3898 mL |
| | 10 mM | 0.3195 mL | 1.5974 mL | 3.1949 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

Saccharopine (L-Saccharopine) hydrochloride, a lysine degradation intermediate, is a mitochondrial toxin. Lysine and α-ketoglutarate are converted into Saccharopine hydrochloride by the lysine-ketoglutarate reductase. Saccharopine hydrochloride is then oxidized to α-aminoapidate semialdehyde and glutamate by the saccharopine dehydrogenase. Saccharopine hydrochloride impairs development by disrupting mitochondrial homeostasis[1][2][3].

**$IC_{50}$ & Target**

Human Endogenous Metabolite

**In Vitro**

Saccharopine accumulation leads to mitochondrial damage and functional loss which is induced by saccharopine dehydrogenase (SDH) mutations of α-aminoadipate semialdehyde synthase (AASS)-1 in C. elegans[1].

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

**In Vivo**

Saccharopine accumulation induces mitochondrial damage and progressive postnatal growth retardation in Aass mutant mice[1].

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## REFERENCES

[1]. Zhou J, et, al. The lysine catabolite saccharopine impairs development by disrupting mitochondrial homeostasis. J Cell Biol. 2019 Feb 4;218(2):580-597.

[2]. Leandro J, et, al. Saccharopine, a lysine degradation intermediate, is a mitochondrial toxin. J Cell Biol. 2019 Feb 4;218(2):391-392.

[3]. Papes F, et, al. Lysine degradation through the saccharopine pathway in mammals: involvement of both bifunctional and monofunctional lysine-degrading enzymes in mouse. Biochem J. 1999 Dec 1;344 Pt 2(Pt 2):555-63.



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