# Lobetyolin

**Cat. No.:** HY-N0327

**CAS No.:** 129277-38-9

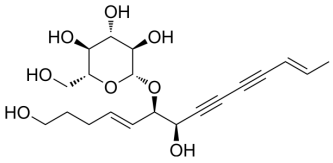
**Molecular Formula:** $C_{20}H_{28}O_8$

**Molecular Weight:** 396.43

**Target:** Apoptosis; Xanthine Oxidase

**Pathway:** Apoptosis; Metabolic Enzyme/Protease

**Storage:** -20°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 50 mg/mL (126.13 mM; Need ultrasonic)
$H_2O$ : 50 mg/mL (126.13 mM; Need ultrasonic)

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.5225 mL | 12.6126 mL | 25.2251 mL |
| | 5 mM | 0.5045 mL | 2.5225 mL | 5.0450 mL |
| | 10 mM | 0.2523 mL | 1.2613 mL | 2.5225 mL |

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

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 33.33 mg/mL (84.08 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.31 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.31 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.31 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Lobetyolin, a bioactive compound, is derived from Codonopsis pilosula. Lobetyolin has anti-inflammatory, anti-oxidative and xanthine oxidase inhibiting activities. Lobetyolin also induces the apoptosis via the inhibition of ASCT2-mediated glutamine metabolism[1][2]. Lobetyolin is a click chemistry reagent, it contains an Alkyne group and can undergo copper-catalyzed azide-alkyne cycloaddition (CuAAc) with molecules containing Azide groups.

**In Vitro**

Lobetyolin is derived from Codonopsis pilosula and has antioxidative effect. MUC5AC gene expression induced by phorbol

12-myristate 13-acetate (PMA) from NCI-H292 cells is inhibited by pretreatment with Lobetyolin, lobetyol or methyl linoleate. Lobetyolin does not affect PMA-induced MUC5AC production from NCI-H292 cells. The amounts of mucin in the cells of Lobetyolin-treated cultures are 100±25%, 487±33%, 524±38%, 411±24%, and 402±45% for control, 10 ng/mL of PMA alone, PMA plus Lobetyolin 1 μM, PMA plus Lobetyolin 10 μM, and PMA plus Lobetyolin 100 μM, respectively[1].

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

## PROTOCOL

**Cell Assay** [1]

After 24 hours of serum deprivation, cells are pretreated with Lobetyolin, lobetyol or methyl linoleate (1, 10, and 100 μM), for 30 minutes and then treated with phorbol 12-myristate 13-acetate (PMA; 10 ng/mL) for 24 hours in serum-free RPMI 1640. After 24 hours, the spent media are collected to measure the secretion of MUC5AC protein and cells are lysed with buffer solution containing 20 mM Tris, 0.5% NP-40, 250 mM NaCl, 3 mM EDTA, 3 mM EGTA, and protease inhibitor cocktail and collected to measure the production of MUC5AC protein (in 24-well culture plate)[1].

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

## CUSTOMER VALIDATION

- Front Pharmacol. 2024 May 10.

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## REFERENCES

[1]. Yoon YP, et al. Effects of Lobetyolin, Lobetyol and Methyl linoleate on Secretion, Production and Gene Expression of MUC5AC Mucin from Airway Epithelial Cells. Tuberc Respir Dis (Seoul). 2014 Nov;77(5):203-8.

[2]. He W, et, al. Lobetyolin induces apoptosis of colon cancer cells by inhibiting glutamine metabolism. J Cell Mol Med. 2020 Mar;24(6):3359-3369.



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