

## Product Data Sheet

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Product Name: Homoharringtonine

Cat. No.: GN10742

### Chemical Properties

Cas. No. 26833-87-4

Chemical Name (R)-1-((11bS,12S,14aR)-13-methoxy-2,3,5,6,11b,12-hexahydro-1H-[1,3]dioxolo[4',5':4,5]benzo[1,2-d]cyclopenta[b]pyrrolo[1,2-a]azepin-12-yl) 4-methyl 2-hydroxy-2-(4-hydroxy-4-methylpentyl)succinate

Formula C<sub>29</sub>H<sub>39</sub>NO<sub>9</sub> M.Wt 545.62

Solubility ≥ 181.2mg/mL in DMSO Storage 4°C, protect from light

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

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

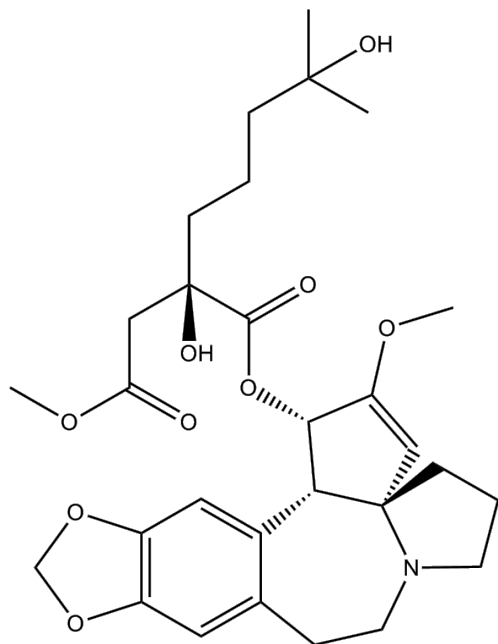
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### Structure



### Protocol

#### Cell experiment [1]:

Cell lines                      A375 and B16F10 cells

Preparation Method        The A375 and B16F10 cells were treated with different concentrations of Homoharringtonine (0-400nM) for 24 and 48h.

Reaction                      0-400nM; 24-48h  
Conditions

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**Applications** The colony formation, proliferation, and the cell cycle of A375 and B16F10 cells were inhibited obviously after treating with Homoharringtonine.

### Animal experiment [2]:

**Animal models** Kras<sup>G12D</sup>-expressing LL2 tumor model

**Preparation Method** Kras<sup>G12D</sup>-expressing LL2 cells ( $2 \times 10^5$  cells in 200  $\mu$ l of PBS) were injected via the subcutaneous (s.c.) route into C57/BL6 mice. Tumor-bearing mice received intraperitoneal (i.p.) injections of Homoharringtonine (1.25-2.5 mg/kg) on day 10 after the tumor challenge, at two-day intervals, with a total of 10 i.p. injections administered.

**Dosage form** 1.25-2.5mg/kg; ip; two-day intervals, 20 days

**Applications** Homoharringtonine inhibited the growth of mouse lung tumor cells carrying Kras mutation in vivo, and decreased expression of endogenous ERK, STAT3, and Akt was observed in lung tumor cells.

### References:

- [1]. Tang J, Li G, Zhang T, et al. Homoharringtonine inhibits melanoma cells proliferation in vitro and vivo by inducing DNA damage, apoptosis, and G2/M cell cycle arrest[J]. Archives of Biochemistry and Biophysics, 2021, 700: 108774.
- [2]. Weng T Y, Wu H F, Li C Y, et al. Homoharringtonine induced immune alteration for an efficient anti-tumor response in mouse models of non-small cell lung adenocarcinoma expressing Kras mutation[J]. Scientific reports, 2018, 8(1): 8216

### Background

Homoharringtonine is a protein synthesis inhibitor and a cytotoxic alkaloid, originally isolated from the evergreen tree *Cephalotaxus hainanensis*. It is often used in the research of lung cancer and breast cancer<sup>[1]</sup>.

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Homoharringtonine (0-36.7nM; 0-96h) effectively inhibits the growth and viability of human acute myeloid leukemia cells and promotes cell cycle arrest, apoptosis and differentiation<sup>[1]</sup>.

Homoharringtonine (0-400nM; 24-48h) inhibits the proliferation of melanoma cells A375 and B16F10 in vitro by inducing DNA damage, apoptosis, and G2/M cell cycle arrest<sup>[2]</sup>. Homoharringtonine (20nM; 0-48h) suppresses tumor proliferation and migration by regulating EphB4-mediated  $\beta$ -catenin loss in hepatocellular carcinoma<sup>[3]</sup>.

In an A375 cell xenograft mice model, Homoharringtonine (1mg/kg; 10 days) can treat mice FLT3 mutant acute myeloid leukemia by targeting the SP1/TET1 pathway in acute myeloid leukemia cells and downregulating overall 5hmC levels<sup>[1]</sup>. Homoharringtonine (2.5mg/kg; two-day intervals; 20 days) inhibits the growth of lung tumor cells in mice carrying Kras mutations in vivo by altering cytokine expression in immune cells through inhibition of protein synthesis<sup>[4]</sup>.

### References :

- [1]. Li C, Dong L, Su R, et al. Homoharringtonine exhibits potent anti-tumor effect and modulates DNA epigenome in acute myeloid leukemia by targeting SP1/TET1/5hmC[J]. *haematologica*, 2020, 105(1): 148.
- [2]. Tang J, Li G, Zhang T, et al. Homoharringtonine inhibits melanoma cells proliferation in vitro and vivo by inducing DNA damage, apoptosis, and G2/M cell cycle arrest[J]. *Archives of Biochemistry and Biophysics*, 2021, 700: 108774.
- [3]. Zhu, Man et al. "Homoharringtonine suppresses tumor proliferation and migration by regulating EphB4-mediated  $\beta$ -catenin loss in hepatocellular carcinoma." *Cell death & disease* vol. 11,8 632. 14 Aug. 2020.
- [4]. Weng T Y, Wu H F, Li C Y, et al. Homoharringtonine induced immune alteration for an efficient anti-tumor response in mouse models of non-small cell lung adenocarcinoma expressing Kras mutation[J]. *Scientific reports*, 2018, 8(1): 8216.

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