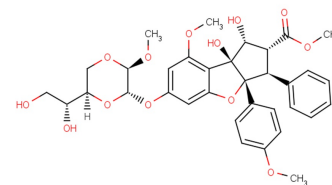


## Silvestrol

## Chemical Properties

|                   |  |
|-------------------|--|
| CAS No.:          | 697235-38-4  |
| Formula:          | C34H38O13  |
| Molecular Weight: | 654.66   |
| Appearance:       | N/A  |
| Storage:          | 0-4°C for short term (days to weeks), or -20°C for long term (months). |



## Biological Description

|                            |  |
|----------------------------|--|
| Description                | Silvestrol is a eukaryotic translation initiation factor 4A inhibitor. Silvestrol causes autophagy and caspase-mediated apoptosis.   |
| Targets(IC <sub>50</sub> ) | eIF4A: None  |
| In vitro                   | Silvestrol shows significant cytotoxic activity against many human cancer cell lines, such as lung, prostate, and breast cancer (IC <sub>50</sub> : ranging from 1 to 7 nM). Silvestrol significantly reduces the number of LNCaP cell colonies. Silvestrol-mediated cell death is attenuated in ATG7-null mouse embryonic fibroblasts lacking a functional autophagy protein. Silvestrol induces caspase-3 activation and apoptotic cell death in a time- and dose-dependent manner. Silvestrol and episilvestrol show synergistic effects in combination with CDDP. Silvestrol (30 nM, 120 nM) induces apoptosis in LNCaP cells, through the mitochondrial pathway. Silvestrol (50 nM) exerts an immediate inhibitory effect and causes near-static cell index compared with the control cells. Silvestrol (6.25 nM) enhances proliferation more than the vehicle control-treated cells, whereas a higher concentration of Silvestrol (50 nM) can inhibit cell proliferation [1][2][3][4]. |
| In vivo                    | Silvestrol significantly prolongs survival compared to vehicle. Silvestrol (1.5 mg/kg, i.p.) does not adversely affect the production of human IgG by xenografted B-lymphocytes in mice [5].   |

## Solubility Information

|            |   |
|------------|---|
| Solubility | DMSO: 6.6 mg/mL (10.08 mM)<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |
|------------|---|

### Preparing Stock Solutions

|       | 1mg      | 5mg      | 10mg      |
|-------|----------|----------|-----------|
| 1 mM  | 1.528 mL | 7.638 mL | 15.275 mL |
| 5 mM  | 0.306 mL | 1.528 mL | 3.055 mL  |
| 10 mM | 0.153 mL | 0.764 mL | 1.528 mL  |
| 50 mM | 0.031 mL | 0.153 mL | 0.306 mL  |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Chambers JM, et al. Synthesis of biotinylated episilvestrol: highly selective targeting of the translation factors eIF4A1/II. *Org Lett*. 2013 Mar 15;15(6):1406-9.
2. Kim S, et al. Silvestrol, a potential anticancer rocaglate derivative from *Aglaia foveolata*, induces apoptosis in LNCaP cells through the mitochondrial/apoptosome pathway without activation of executioner caspase-3 or -7. *Anticancer Res*. 2007 Jul-Aug;27(4B):2175-83.
3. Chen WL, et al. Silvestrol induces early autophagy and apoptosis in human melanoma cells. *BMC Cancer*. 2016 Jan 13;16:17.
4. Daker M, et al. Inhibition of nasopharyngeal carcinoma cell proliferation and synergism of CDDP with silvestrol and episilvestrol isolated from *Aglaia stellatopilosa*. *Exp Ther Med*. 2016 Jun;11(6):2117-2126.
5. Patton JT, et al. The translation inhibitor silvestrol exhibits direct anti-tumor activity while preserving innate and adaptive immunity against EBV-driven lymphoproliferative disease. *Oncotarget*. 2015 Feb 20;6(5):2693-708.
6. Wolfe AL, et al. RNA G-quadruplexes cause eIF4A-dependent oncogene translation in cancer. *Nature*. 2014 Sep 4;513(7516):65-70.
7. Wiegeling A, et al. Targeting Translation Initiation Bypasses Signaling Crosstalk Mechanisms That Maintain High MYC Levels in Colorectal Cancer. *Cancer Discov*. 2015 Jul;5(7):768-781.
8. Todt D, et al. The natural compound silvestrol inhibits hepatitis E virus (HEV) replication in vitro and in vivo. *Antiviral Res*. 2018 Sep;157:151-158.

**Inhibitors · Natural Compounds · Compound Libraries**

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