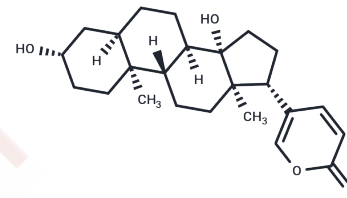


## Bufalin

## Chemical Properties

|                   |  |
|-------------------|--|
| CAS No. :         | 465-21-4   |
| Formula:          | C <sub>24</sub> H <sub>34</sub> O <sub>4</sub>   |
| Molecular Weight: | 386.52   |
| Storage:          | Keep away from direct sunlight<br>Powder: -20°C for 3 years   In solvent: -80°C for 1 year<br><small>Actual storage temperature shall be subject to the COA.</small> |



## Biological Description

|               |   |
|---------------|---|
| Description   | Bufalin is a natural product and a Na <sup>+</sup> /K <sup>+</sup> -ATPase inhibitor (IC <sub>50</sub> ≈ 40–45 nM) with favorable cell permeability. By binding to α subunits such as ATP1A1, bufalin induces calcium overload and pyroptosis, and can be used for experimental research and therapeutic exploration in various cancers.  |
| Targets(IC50) | ATPase  |
| In vitro      | <p><b>Methods:</b> Human lung cancer cells A549 and H1299 were incubated with 40 ng/ml Bufalin for 24 hours.</p> <p><b>Results:</b> Bufalin significantly inhibited cell viability, colony formation, and soft agar colony formation in a concentration-dependent manner.[1]</p> <p><b>Methods:</b> Human colon cancer HCT-116 and SW620 cells were incubated with gradient concentrations of Bufalin for 48 hours, respectively.</p> <p><b>Results:</b> Bufalin inhibited cell proliferation in a concentration-dependent manner, with IC<sub>50</sub> values of 12.823±1.792 nM and 26.303±2.498 nM, respectively.[2]</p> |
| In vivo       | <p><b>Methods:</b> A549 or H1299 cells were inoculated into nude mice. When tumor volume reached 220–250 mm<sup>3</sup>, Bufalin 1 mg/kg was administered by subcutaneous or intraperitoneal injection daily or every other day (with DMSO as the vehicle) for 25 consecutive days.</p> <p><b>Results:</b> Tumor volume and weight in the Bufalin group were significantly lower than those in the control group. [1]</p>   |

## Solubility Information

|                     |  |
|---------------------|--|
| Solubility          | DMSO: 100 mg/mL (258.72 mM), Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble)   |
| In vivo Formulation | 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (10.35 mM), Sonication is recommended.<br><i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i> |

### Preparing Stock Solutions

|       | 1mg       | 5mg        | 10mg       |
|-------|-----------|------------|------------|
| 1 mM  | 2.5872 mL | 12.9359 mL | 25.8719 mL |
| 5 mM  | 0.5174 mL | 2.5872 mL  | 5.1744 mL  |
| 10 mM | 0.2587 mL | 1.2936 mL  | 2.5872 mL  |
| 50 mM | 0.0517 mL | 0.2587 mL  | 0.5174 mL  |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Qian, Zijun et al. Bufalin inhibits the proliferation of lung cancer cells by suppressing Hippo-YAP pathway. Cellular signalling vol. 109 (2023): 110746.

Chen F, Zhu L, Hu J, et al. Bufalin attenuates triple-negative breast cancer cell stemness by inhibiting the expression of SOX2/OCT4. Oncology letters. 2020, 20(5): 1-1.

Norcantharidin overcomes vemurafenib resistance in melanoma by inhibiting pentose phosphate pathway and lipogenesis via downregulating the mTOR pathway

Wu, Di et al. Bufalin induces apoptosis via mitochondrial ROS-mediated caspase-3 activation in HCT-116 and SW620 human colon cancer cells. Drug and chemical toxicology vol. 42,4 (2019): 444-450.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481