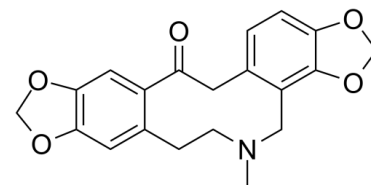


## Data Sheet

|                           |   |
|---------------------------|---|
| <b>Product Name:</b>      | Protopine   |
| <b>Cat. No.:</b>          | CS-4249   |
| <b>CAS No.:</b>           | 130-86-9  |
| <b>Molecular Formula:</b> | C <sub>20</sub> H <sub>19</sub> NO <sub>5</sub>           |
| <b>Molecular Weight:</b>  | 353.37  |
| <b>Target:</b>            | Reactive Oxygen Species                                   |
| <b>Pathway:</b>           | Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB |
| <b>Solubility:</b>        | DMSO : 12.5 mg/mL (35.37 mM; Need ultrasonic)             |



### BIOLOGICAL ACTIVITY:

Protopine, an isoquinoline alkaloid contained in plants in northeast Asia. IC<sub>50</sub> Value: Target: In vitro: Protopine was found to reduce nitric oxide (NO), cyclooxygenase-2 (COX-2), and prostaglandin E(2) (PGE(2)) production by LPS-stimulated Raw 264.7 cells, without a cytotoxic effect. Pre-treatment of Raw 264.7 cells with protopine reduced the production of pro-inflammatory cytokines [2]. Protopine is a novel microtubule stabilizer with anticancer activity in HRPC cells through apoptotic pathway by modulating Cdk1 activity and Bcl-2 family of proteins [3]. In HepG2 cells, protopine significantly increased CYP1A1 mRNA levels after 24h exposure at concentrations from 25 and 10 μM. Protopine also dose-dependently increased CYP1A1 and CYP1A2 mRNA levels in human hepatocytes [4]. In vivo: Assays were performed on MDA-MB-231 human breast cancer cells, and the result showed that protopine exhibited anti-adhesive and anti-invasion effects in MDA-MB-231 cells; after treatment with protopine for 90 min, the expression of EGFR, ICAM-1, αv-integrin, β1-integrin and β5-integrin were remarkably reduced [1].

### References:

- [1]. Bae DS, et al. Protopine reduces the inflammatory activity of lipopolysaccharide-stimulated murine macrophages. BMB Rep. 2012 Feb;45(2):108-13.
- [2]. Chen CH, et al. Protopine, a novel microtubule-stabilizing agent, causes mitotic arrest and apoptotic cell death in human hormone-refractory prostate cancer cell lines. Cancer Lett. 2012 Feb 1;315(1):1-11.
- [3]. Vrbja J, et al. Protopine and allocryptopine increase mRNA levels of cytochromes P450 1A in human hepatocytes and HepG2 cells independently of AhR. Toxicol Lett. 2011 Jun 10;203(2):135-41.
- [4]. He K, et al. Protopine inhibits heterotypic cell adhesion in MDA-MB-231 cells through down-regulation of multi-adhesive factors. Afr J Tradit Complement Altern Med. 2014 Jan 28;11(2):415-24.

### CAIndexNames:

Bis[1,3]benzodioxolo[4,5-c:5',6'-g]azecin-13(5H)-one, 4,6,7,14-tetrahydro-5-methyl-

### SMILES:

O=C1CC2=CC=C3C(OCO3)=C2CN(C)CCC4=CC5=C(OCO5)C=C41

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

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