Rhein

| Cat. No.: | HY-N0105 | | |
|--------------------|---|---|----|
| CAS No.: | 478-43-3 | | |
| Molecular Formula: | $C_{15}H_8O_6$ | | |
| Molecular Weight: | 284.22 | | |
| Target: | Autophagy; React | ve Oxygen Species; Bacterial; Apoptosis | OH |
| Pathway: | Autophagy; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-кB; Anti- O | | |
| Storage: | Powder -20°C | 3 years | |
| | 4 (| 2 years | |
| | In solvent -80°C | 2 years | |
| | -20°0 | 1 year | |

SOLVENT & SOLUBILITY

| In Vitro | 0.1 M NaOH : ≥ 12.5 mg/mL (43.98 mM) DMSO : 12.17 mg/mL (42.82 mM; Need ultrasonic and warming) * "≥" means soluble, but saturation unknown. | | | | | |
|----------|--|--|---|-----------------|------------|--|
| | Preparing Stock Solutions | Solvent Mass Concentration | 1 mg | 5 mg | 10 mg | |
| | | 1 mM | 3.5184 mL | 17.5920 mL | 35.1840 mL | |
| | | 5 mM | 0.7037 mL | 3.5184 mL | 7.0368 mL | |
| | | 10 mM | 0.3518 mL | 1.7592 mL | 3.5184 mL | |
| | Please refer to the solubility information to select the appropriate solvent. | | | | | |
| In Vivo | Add each solvent of Solubility: 10 mg/r Add each solvent of Solubility: 1.67 mg | one by one: 0.5% CMC-Na/saline wa mL (35.18 mM); Suspended solution one by one: 10% DMSO >> 40% PE g/mL (5.88 mM); Suspended solution | ater ; Need ultrasonic G300 >> 5% Tween-& n; Need ultrasonic | 0 >> 45% saline | | |

| Description | Rhein is an anthraquinone compound with anti-inflammatory, antioxidant, and anti-cancer ${ m effects}^{[1]}$. | | | |
|-------------|--|--|--|--|
| In Vitro | Rhein (0-80 μM, 72 h) inhibits the viability of NB4 cells in a dose-dependent manner ^[2] . Rhein (5 μM, 72 h) increases semi-adherent, macrophage-like cells, and expression of CD11b, CD14, CCR-1 and CCR-2, and increases ROS production and phagocytosis in ATRA-activated NB4 cells ^[2] . Rhein (5 μM, 72 h) induces NB4 cell death by activating apoptosis and inhibiting the mTOR pathway ^[2] . Rhein (50-200 μM, 48 h) inhibits angiogenesis in MCF-7 and MDA-MB-435 cells ^[4] . | | | |

Product Data Sheet





| Cell Line: | acute promyelocytic leukemia (APL) cell (NB4 cells) |
|--------------------------------------|--|
| Concentration: | 5 μΜ |
| Incubation Time: | 72 h |
| Result: | Increaseed mRNA expression of PU.1, C/EBPA, and C/EBPE. Increaseed ATRA activated mRNA expression of CCR1 and CCR2. |
| Western Blot Analysis ^[2] | |
| Cell Line: | NB4 cells |
| Concentration: | 0-40 μΜ |
| Incubation Time: | 48 and 72 h |
| Result: | Increased the expression of cleaved caspase-3, Bax. Decreased the expression of Bcl-xl, procaspase-3. |

| Animal Model: | 2.5 g/kg APAP (i.g.) induced rats ^[3] |
|-----------------|--|
| Dosage: | 10, 20 and 40 mg/kg |
| Administration: | i.g. |
| Result: | Ameliorated histopathological damage of liver and kidney. Reduced GPT, GOT, UREA and CREA levels and ROS production. Restored NO, MDA, GSH contents. |

CUSTOMER VALIDATION

- Small Methods. 2020, 2000483.
- Br J Pharmacol. 2021 Dec 9.
- Biochem Biophys Res Commun. 2018 Sep 3;503(1):297-303.
- J Orthop Surg Res. 2023 Jul 6;18(1):485.
- Neurosci Lett. 2021 Jun 3;136002.

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REFERENCES

In Vivo

[1]. Hou ML, et al. The Drug-Drug Effects of Rhein on the Pharmacokinetics and Pharmacodynamics of Clozapine in Rat Brain Extracellular Fluid by In Vivo Microdialysis. J

Pharmacol Exp Ther. 2015 Oct;355(1):125-34.

[2]. Heo SK, et al. Rhein augments ATRA-induced differentiation of acute promyelocytic leukemia cells. Phytomedicine. 2018 Oct 1;49:66-74.

[3]. Zhao YL, et al. Rhein protects against acetaminophen-induced hepatic and renal toxicity. Food Chem Toxicol. 2011 Aug;49(8):1705-10.

[4]. Fernand VE, et al. Rhein inhibits angiogenesis and the viability of hormone-dependent and -independent cancer cells under normoxic or hypoxic conditions in vitro. Chem Biol Interact. 2011 Jul 15;192(3):220-32.

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

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