# Cercosporin

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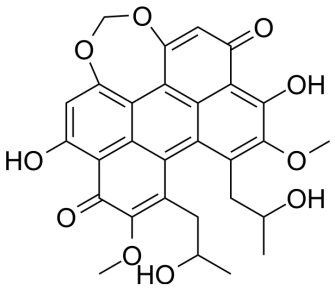
|---|---|
| **Cat. No.:** | HY-N6743 |
| **CAS No.:** | 35082-49-6 |
| **Molecular Formula:** | $C_{29}H_{26}O_{10}$ |
| **Molecular Weight:** | 534.51 |
| **Target:** | PKC |
| **Pathway:** | Epigenetics; TGF-beta/Smad |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent -80°C 6 months<br>-20°C 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 10 mg/mL (18.71 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.8709 mL | 9.3544 mL | 18.7087 mL |
| 5 mM | 0.3742 mL | 1.8709 mL | 3.7417 mL |
| 10 mM | 0.1871 mL | 0.9354 mL | 1.8709 mL |

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

**Description**

Cercosporin is produced by a plant pathogen, Pseudocercosporella capsellae. Cercosporin is a potent photosensitizer with a short activation wavelength, mostly suitable for superficial photodynamic therapy (PDT) treatments, especially when it is necessary to avoid perforations[1].Cercosporin contains the perylenequinone structural features necessary to PKC activity with an $IC_{50}$ of 0.6-1.3 μM[2].

**$IC_{50}$ & Target**

IC50: 0.6-1.3 μM (PKC)[2]

**In Vitro**

Cercosporin (0.8-8.0 μM; 30 s, 60 s, 90 s, 120 s) photodynamic therapy (PDT) effect is stronger in T98G cells than in U87 or MCF7 cells, the $LD_{50}$ value for the T98G cells (0.14 J $cm^2$) is much less than the $LD_{50}$ value for MCF-7 and U87 cell lines (0.26 and 0.24 J $cm^2$, respectively)[1].

Cercosporin (0-3 μM; 24 hours) interplays with copper results in a synergistic cytotoxicity in MCF7 and T98G cells, that is, S(CuSO4 + Cerco) ⊠ S(CuSO4) x S(Cerco), barely has an additive effect in U87 cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

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| Cell Line: | Human GBM cell lines, T98G and U87; Breast carcinoma cell line, MCF-7 |
| Concentration: | 0 μM, 1 μM, 2 μM, 3 μM |
| Incubation Time: | 24 hours |
| Result: | Exhibited a synergistic cytotoxicity with copper only in the most respiratory cell lines (MCF-7 and T98G). |

## REFERENCES


[1]. Mastrangelopoulou M, et al. Cytotoxic and Photocytotoxic Effects of Cercosporin on Human Tumor Cell Lines. Photochem Photobiol. 2019 Jan;95(1):387-396.

[2]. Morgan BJ, et al. Design, synthesis, and investigation of protein kinase C inhibitors: total syntheses of (+)-calphostin D, (+)-phleichrome, cercosporin, and new photoactive perylenequinones. J Am Chem Soc. 2009 Jul 8;131(26):9413-25.





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