

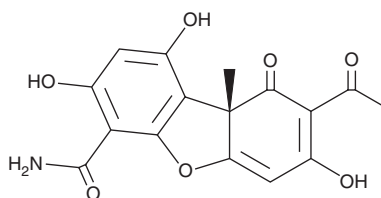
# PRODUCT INFORMATION



## Cercosporamide

Item No. 15500

CAS Registry No.: 131436-22-1  
Formal Name: (9aS)-8-acetyl-9,9a-dihydro-1,3,7-trihydroxy-9a-methyl-9-oxo-4-dibenzofurancarboxamide  
MF: C<sub>16</sub>H<sub>13</sub>NO<sub>7</sub>  
FW: 331.3  
Purity: ≥95%  
Supplied as: A solid  
Storage: -20°C  
Stability: ≥4 years  
Item Origin: Fungus/*Cercosporidium* sp.



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Cercosporamide is supplied as a solid. A stock solution may be made by dissolving the cercosporamide in the solvent of choice. Cercosporamide is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide, which should be purged with an inert gas.

### Description

Cercosporamide is a natural antifungal phytotoxin isolated from the *Cercosporidium* fungus, which infects the leaves of cassava plants.<sup>1</sup> Its antifungal effect results from its selective and potent inhibition of fungal PKC-like 1 kinases (Pkc1), which are central to cell wall integrity (IC<sub>50</sub> = 25 nM for *Candida* Pkc1).<sup>2</sup> Cercosporamide less effectively inhibits human PKC isoforms PKCα, β, and γ (IC<sub>50</sub> = 1.02, 0.35, and 5.8 μM, respectively), an action linked to lowering of plasma glucose in hyperglycemic mice.<sup>2,3</sup> However, it potently inhibits MAPK-interacting kinases Mnk1 and Mnk2 (IC<sub>50</sub> = 115 and 11 nM, respectively), reducing protein translation in cancer cells.<sup>4,5</sup> Cercosporamide is orally bioavailable.<sup>2,3</sup>

### References

1. Sugawara, F., Strobel, S., Strobel, G., *et al.* The structure and biological activity of cercosporamide from *Cercosporidium henningsii*. *J. Org. Chem.* **56**(3), 909-910 (1991).
2. Sussman, A., Huss, K., Chio, L.-C., *et al.* Discovery of cercosporamide, a known antifungal natural product, as a selective Pkc1 kinase inhibitor through high-throughput screening. *Eukaryot. Cell* **3**(4), 932-943 (2004).
3. Furukawa, A., Arita, T., Satoh, S., *et al.* (-)-Cercosporamide derivatives as novel antihyperglycemic agents. *Bioorg. Med. Chem. Lett.* **19**(3), 724-726 (2009).
4. Konicek, B.W., Stephens, J.R., McNulty, A.M., *et al.* Therapeutic inhibition of MAP kinase interacting kinase blocks eukaryotic initiation factor 4E phosphorylation and suppresses outgrowth of experimental lung metastases. *Cancer Res.* **71**(5), 1849-1857 (2011).
5. Hou, J., Lam, F., Proud, C., *et al.* Targeting Mnks for cancer therapy. *Oncotarget* **3**(2), 118-131 (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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