

# PRODUCT INFORMATION

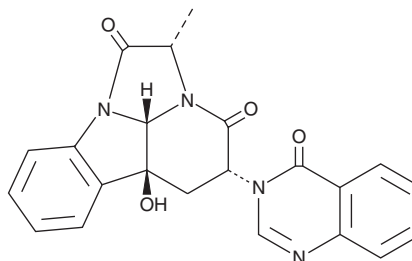


## (-)-Chaetominine

Item No. 13135

**CAS Registry No.:** 918659-56-0  
**Formal Name:** (2S,4R,5aS,9cS)-4,5,5a,9c-tetrahydro-5a-hydroxy-2-methyl-4-(4-oxo-3(4H)-quinazoliny)-3H-2a,9b-diazacyclopenta[jk]fluorene-1,3(2H)-dione

**MF:** C<sub>22</sub>H<sub>18</sub>N<sub>4</sub>O<sub>4</sub>  
**FW:** 402.4  
**Purity:** ≥85%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

(-)-Chaetominine is supplied as a solid. A stock solution may be made by dissolving the (-)-chaetominine in the solvent of choice, which should be purged with an inert gas. (-)-Chaetominine is slightly soluble (0.1-1 mg/ml) in acetonitrile.

### Description

(-)-Chaetominine is a cytotoxic alkaloid originally isolated from *Chaetomium* sp. IFB-E015.<sup>1</sup> It inhibits the growth of K562 leukemia and SW1116 colon cancer cells (IC<sub>50</sub>s = 20 and 28 nM, respectively). (-)-Chaetominine induces apoptosis of K562 cells via upregulation of the Bax/Bcl-2 ratio, decreasing mitochondrial membrane potential, inducing mitochondrial cytochrome C release, and activation of caspase-3 and caspase-9.<sup>2</sup> It also decreases doxorubicin efflux mediated by multidrug resistance-associated protein 1 (MRP1) and restores sensitivity to doxorubicin (Item No. 15007) in resistant K562 cells.<sup>3</sup>

### References

1. Jiao, R.H., Xu, S., Liu, J.Y., *et al.* Chaetominine, a cytotoxic alkaloid produced by endophytic *Chaetomium* sp. IFB-E015. *Org. Lett.* **8(25)**, 5709-5712 (2006).
2. Yao, J., Jiao, R.H., Liu, C., *et al.* Assessment of the cytotoxic and apoptotic effects of chaetominine in a human leukemia cell line. *Biomol. Ther. (Seoul)* **24(2)**, 147-155 (2016).
3. Yao, J., Wei, X., and Lu, Y. Chaetominine reduces MRP1-mediated drug resistance via inhibiting PI3K/Akt/Nrf2 signaling pathway in K562/Adr human leukemia cells. *Biochem. Biophys. Res. Commun.* **473(4)**, 867-873 (2016).

#### 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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