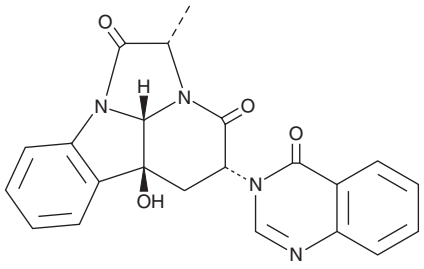
PRODUCT INFORMATION

(–)-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)-quinazolinyl)-3H-2a,9b-diazacyclopenta[jk]fluorene-1,3(2H)-dione
MF:	$C_{22}H_{18}N_4O_4$
FW:	402.4
Purity:	≥95%
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.

Description

(–)-Chaetominine is a cytotoxic alkaloid originally isolated from *Chaetomium* sp. IFB-E015.[1] It inhibits the growth of K562 leukemia and SW1116 colon cancer cells (IC_{50}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.[2] 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.[3]

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).

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