

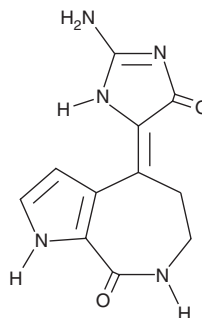
# PRODUCT INFORMATION



## Debromohymenialdisine

Item No. 14873

**CAS Registry No.:** 75593-17-8  
**Formal Name:** (4Z)-4-(2-amino-1,5-dihydro-5-oxo-4H-imidazol-4-ylidene)-4,5,6,7-tetrahydropyrrolo[2,3-c]azepin-8(1H)-one  
**Synonyms:** DBH, SKF 108753  
**MF:** C<sub>11</sub>H<sub>11</sub>N<sub>5</sub>O<sub>2</sub>  
**FW:** 245.2  
**Purity:** ≥90%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years  
**Item Origin:** Sponge/*Axinella carteri*



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

### Laboratory Procedures

Debromohymenialdisine (DBH) is supplied as a solid. A stock solution may be made by dissolving the DBH in the solvent of choice, which should be purged with an inert gas. DBH is soluble in ethanol, methanol, and DMSO.

### Description

Damaged DNA in humans is detected by sensor proteins that transmit a signal through checkpoint kinases (Chks) Chk1 and Chk2.<sup>1</sup> DBH is a marine sponge alkaloid that inhibits Chk1 and Chk2 (IC<sub>50</sub> = 3 and 3.5 μM, respectively), blocking G<sub>2</sub> arrest.<sup>2,3</sup> Because it does not significantly affect the activity of ataxia-telangiectasia mutated (ATM) or ATM-Tad2-related protein, DBH is a useful tool for studying the roles of Chk1 and Chk2 in DNA repair and cell cycle regulation.<sup>2</sup> DBH also inhibits MAP kinase kinase 1 (IC<sub>50</sub> = 881 nM), glycogen synthase kinase 3β (IC<sub>50</sub> = 1.39 μM), cyclin-dependent kinase 5/p25 (IC<sub>50</sub> = 9.12 μM), protein tyrosine kinase 6 (IC<sub>50</sub> = 0.6 μM), and other kinases largely unrelated to DNA damage/repair and cell cycling.<sup>4-7</sup>

### References

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3. Saleem, R.S.Z., Lansdell, T.A., and Tepe, J.J. Synthesis and evaluation of debromohymenialdisine-derived Chk2 inhibitors. *Bioorg. Med. Chem.* **20(4)**, 1475-1481 (2012).
4. Tasmir, D., Mallon, R., Greenstein, M., et al. Aldisine alkaloids from the Philippine sponge *Stylissa massa* are potent inhibitors of mitogen-activated protein kinase kinase-1 (MEK-1). *J. Med. Chem.* **45(2)**, 529-532 (2002).
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6. Jobson, A.G., Cardellina, J.H.II., Scudiero, D., et al. Identification of a bis-guanylhydrazone [4,4'-diacetyldiphenylurea-bis(guanylhydrazone); NSC 109555] as a novel chemotype for inhibition of Chk2 kinase. *Mol. Pharmacol.* **72(4)**, 876-884 (2007).
7. Foloppe, N., Fisher, L.M., Francis, G., et al. Identification of a buried pocket for potent and selective inhibition of Chk1: Prediction and verification. *Bioorg. Med. Chem.* **14(6)**, 1792-1804 (2006).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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