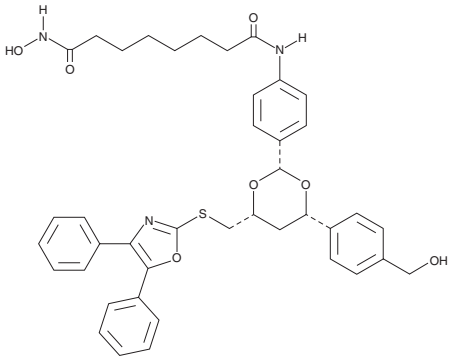
PRODUCT INFORMATION

Tubacin

Item No. 13691

CAS Registry No.:	537049-40-4
Formal Name:	N1-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N8-hydroxy-octanediamide
MF:	$C_{41}H_{43}N_3O_7S$
FW:	721.9
Purity:	≥90%
UV/Vis.:	λ_{max}: 222, 240, 299 nm
Supplied as:	A crystalline 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

Tubacin is supplied as a crystalline solid. A stock solution may be made by dissolving the tubacin in the solvent of choice, which should be purged with an inert gas. Tubacin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of tubacin in these solvents is approximately 16 and 20 mg/ml, respectively.

Tubacin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tubacin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Tubacin has a solubility of approximately 0.25 mg in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Tubacin is a tubulin acetylation inducer that selectively inhibits histone deacetylase (HDAC) 6 (IC_{50} = 4 nM).[1] In comparison, it demonstrates at least 300-fold selectivity against all other HDAC isoforms (IC_{50}s range from 1.3-17.3 µM).[1] Tubacin induces α-tubulin hyperacetylation at 2.5 µM in primary cortical neuron cultures.[1] Tubacin inhibition of HDAC6 has been used as a biochemical tool to control microtubule-dependent intracellular trafficking, to manipulate the aggresome formation of misfolded proteins in certain diseases, and to study the dynamics of cellular adhesion.[2-4]

References

1. Butler, K.V., Kalin, J., Brochier, C., *et al.* Rational design and simple chemistry yield a superior, neuroprotective HDAC6 inhibitor, Tubastatin A. *J. Am. Chem. Soc.* **132(31)**, 10842-10846 (2010).
2. Chen, S., Owens, G.C., Makarenkova, H., *et al.* HDAC6 regulates mitochondrial transport in hippocampal neurons. *PLoS One* **5(5)**, (2010).
3. Cole, P.A. Chemical probes for histone-modifying enzymes. *Nat. Chem. Biol.* **4(10)**, 590-597 (2008).
4. Xu, K., Dai, X.L., Huang, H.C., *et al.* Targeting HDACs: A promising therapy for Alzheimer's disease. *Oxid. Med. Cell. Longev.* 143269 (2011).

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