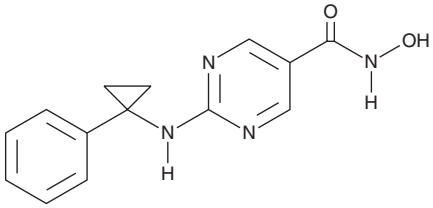
PRODUCT INFORMATION

ACY-738

Item No. 28282

CAS Registry No.:	1375465-91-0
Formal Name:	N-hydroxy-2-[(1-phenylcyclopropyl)amino]-5-pyrimidinecarboxamide
MF:	$C_{14}H_{14}N_4O_2$
FW:	270.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 267 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

ACY-738 is supplied as a crystalline solid. A stock solution may be made by dissolving the ACY-738 in the solvent of choice, which should be purged with an inert gas. ACY-738 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of ACY-738 in these solvents is approximately 15 and 10 mg/ml, respectively.

ACY-738 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ACY-738 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. ACY-738 has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

ACY-738 is an inhibitor of histone deacetylase 6 (HDAC6; IC_{50} = 1.7 nM).[1] It is selective for HDAC6 over HDAC1-3 (IC_{50}s = 94, 128, and 218 nM, respectively). ACY-738 (5 mg/kg) increases acetylation of α-tubulin in mouse brain. It increases exploratory activity in a novel open-field test and reduces immobility time in a tail suspension test in wild-type, but not neural cell-selective HDAC6 knockout, mice when administered at a dose of 50 mg/kg, indicating anxiolytic and antidepressant-like activity, respectively. ACY-738 (100 mg/kg in the diet) attenuates decreases in caudal nerve sensory nerve action potential (SNAP) amplitude and increases in hind paw mechanical hypersensitivity in a mouse model of peripheral neuropathy induced by vincristine (Item No. 11764).[2] It decreases hepatorenal cystogenesis in a rat model of polycystic liver disease when administered at a dose of 30 mg/kg.[3]

References

1. Jochems, J., Boulden, J., Lee, B.G., *et al.* Antidepressant-like properties of novel HDAC6-selective inhibitors with improved brain bioavailability. *Neuropsychopharmacology* **39(2),** 389-400 (2014).
2. Van Helleputte, L., Kater, M., Cook, D.P., *et al.* Inhibition of histone deacetylase 6 (HDAC6) protects against vincristine-induced peripheral neuropathies and inhibits tumor growth. *Neurobiol. Dis.* **111**, 59-69 (2018).
3. Lorenzo Pisarello, M., Masyuk, T.V., Gradilone, S.A., *et al.* The combination of an HDAC6 inhibitor and a somatostatin receptor agonist synergistically reduces hepato-renal cystogenesis in an animal model of polycystic liver disease. *Am. J. Pathol.* **188(4),** 981-994 (2018).

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