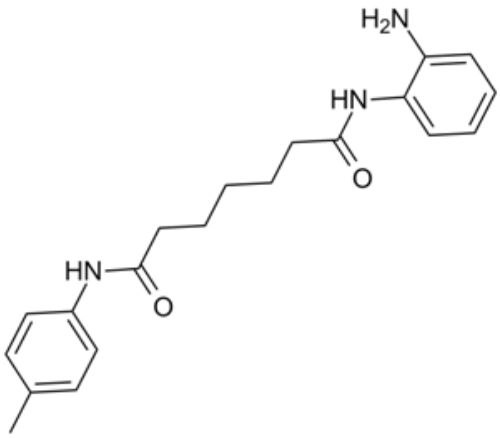
Product Data Sheet

Product Name: TC-H 106
Cat. No.: GC13591

Chemical Properties

Cas. No.	937039-45-7		
Chemical Name	N'-(2-aminophenyl)-N-(4-methylphenyl)heptanediamide		
SMILES	CC1=CC=C(C=C1)NC(=O)CCCCCC(=O)NC2=CC=CC=C2N		
Formula	$C_{20}H_{25}N_3O_2$	M.Wt	339.43
Solubility	≥ 15.2mg/mL in DMSO, ≥ 7.46 mg/mL in EtOH with ultrasonic	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

TC-H 106 is an inhibitor of Class I Histone Deacetylase with IC50 values of 150, 760, 370 and 5000 nM for HDAC1, HDAC2, HDAC3 and HDAC8, respectively [1].

Histone deacetylases (HADC) are a series of enzymes that remove acetyl groups from an ε-N-acetyl lysine amino acid on a histone and make the histones to wrap the DNA more tightly, which prevent

transcription. Class I histone deacetylase are consist of HDAC1, 2, 3 and 8 [1].

In a lymphoblastoid cell line from a Friedreich ataxia patient, TC-H 106 (2 μM) prolonged acetylation of histone H3 [1]. In HeLa cell, TC-H 106 inhibited HDACs with IC50 value of 1.3 μM. TC-H 106 inhibited recombinant HDAC3/NcoR2 and recombinant HDAC1 with IC50 values of 0.79 and 0.24 μM, respectively [2].

In KIKI mice carrying a (GAA) 230 repeats in the first intron of the mouse frataxin gene, TC-H 106 increased the level of frataxin mRNA. The histone H3 and H4 acetylation in chromatin near the GAA repeat was also increased. These results resulted in the frataxin return to the normal level in the nervous system and heart in KIKI mice [3].

References:
[1]. Chou CJ, Herman D, Gottesfeld JM. Pimelic diphenylamide 106 is a slow, tight-binding inhibitor of class I histone deacetylases. J Biol Chem, 2008, 283(51): 35402-35409.
[2]. Xu C, Soragni E, Chou CJ, et al. Chemical probes identify a role for histone deacetylase 3 in Friedreich's ataxia gene silencing. Chem Biol, 2009, 16(9): 980-989.
[3]. Rai M, Soragni E, Jenssen K, et al. HDAC inhibitors correct frataxin deficiency in a Friedreich ataxia mouse model. PLoS One, 2008, 3(4): e1958.