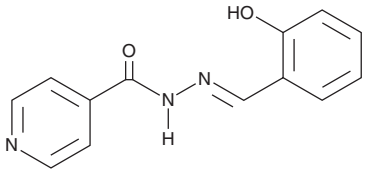
PRODUCT INFORMATION

SIH

Item No. 33314

CAS Registry No.:	495-84-1
Formal Name:	2-[(2-hydroxyphenyl)methylene]hydrazide 4-pyridinecarboxylic acid
Synonyms:	NSC 33760, Salicylaldehyde Isonicotinoyl Hydrazine, Salinazid
MF:	$C_{13}H_{11}N_3O_2$
FW:	241.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 215, 290, 335 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

SIH is supplied as a crystalline solid. A stock solution may be made by dissolving the SIH in the solvent of choice, which should be purged with an inert gas. SIH is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of SIH in these solvents is approximately 5 and 10 mg/ml, respectively.

SIH is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, SIH should first be dissolved in DMF and then diluted with the aqueous buffer of choice. SIH has a solubility of approximately 0.23 mg/ml 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

SIH is a lipophilic cell-permeable iron chelator.[1,2] It stimulates iron release from, and inhibits iron uptake by, SK-N-MC human neuroblastoma cells when used at a concentration of 25 µM.[3] SIH inhibits cumene hydroperoxide-induced membrane lipid peroxidation but not ABAP-induced formation of cytosolic peroxyl radicals in HepG2 human hepatocellular carcinoma cells (IC_{50}s = 0.833 and >4,000 µM, respectively).[1] It inhibits hydrogen peroxide-induced mitochondrial membrane depolarization in H9c2 rat cardiomyocytes (EC_{50} = 0.8 µM).[2] SIH (1.0 mg/kg) completely prevents mortality in a rabbit model of cardiotoxicity induced by chronic administration of daunorubicin (Item No. 14159).[4]

References

1. Hofer, T., Jørgensen, T.Ø., and Olsen, R.L. Comparison of food antioxidants and iron chelators in two cellular free radical assays: Strong protection by luteolin. *J. Agric. Food Chem.* **62(33)**, 8402-8410 (2014).
2. Šimůnek, T., Boer, C., Bouwman, R.A., *et al*. SIH—a novel lipophilic iron chelator—protects H9c2 cardiomyoblasts from oxidative stress-induced mitochondrial injury and cell death. *J. Mol. Cell. Cardiol.* **39(2)**, 345-354 (2005).
3. Wu, Z., Palanimuthu, D., Braidy, N., *et al*. Novel multifunctional iron chelators of the aroyl nicotinoyl hydrazone class that markedly enhance cellular NAD^+ /NADH ratios. *Br. J. Pharmacol.* **177(9)**, 1967-1987 (2019).
4. Štěrba, M., Popelová, O., Šimůnek, T., *et al*. Iron chelation-afforded cardioprotection against chronic anthracycline cardiotoxicity: A study of salicylaldehyde isonicotinoyl hydrazone (SIH). *Toxicology* **235(3)**, 150-166 (2007).

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