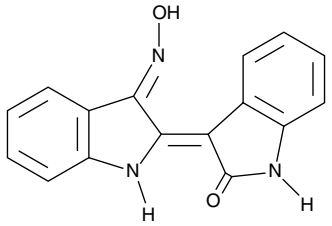
Product Information

Indirubin-3'-monoxime

Item No. 13314

CAS Registry No.:	160807-49-8
Formal Name:	3-[1,3-dihydro-3-(hydroxyimino)-2H-indol-2-ylidene]-1,3-dihydro-2H-indol-2-one
MF:	$C_{16}H_{11}N_3O_2$
FW:	277.3
Purity:	≥98%
Stability:	≥2 years at -20°C
Supplied as:	A crystalline solid
UV/Vis.:	λ_{max}: 212, 252, 280, 286, 328, 342, 502 nm



Laboratory Procedures

For long term storage, we suggest that indirubin-3'-monoxime be stored as supplied at -20°C. It should be stable for at least two years.

Indirubin-3'-monoxime is supplied as a crystalline solid. A stock solution may be made by dissolving the indirubin-3'-monoxime in an organic solvent purged with an inert gas. Indirubin-3'-monoxime is soluble in organic solvents such as ethanol, DMSO, and dimethylformamide (DMF). The solubility of indirubin-3'-monoxime in ethanol is approximately 2 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Indirubin-3'-monoxime is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, indirubin-3'-monoxime should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Indirubin-3'-monoxime has a solubility of approximately 0.15 mg/ml in a 1:5 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Indirubin-3'-oxime is a potent inhibitor of glycogen synthase kinase 3β (GSK3β; IC_{50} = 22 nM).[1] As GSK3β phosphorylates tau protein, indirubin-3'-oxime prevents tau phosphorylation both *in vitro* and *in vivo* at Alzheimer's disease-relevant sites.[1] It also inhibits cyclin-dependent kinases (CDKs) at higher concentrations, including Cdk1/cyclin B (IC_{50} = 180 nM), Cdk2/cyclin A (IC_{50} ~500 nM), Cdk2/cyclin E (IC_{50} = 250 nM), Cdk4/cyclin D1 (IC_{50} = 3.3 µM) and Cdk5/p35 (IC_{50} = 100 nM). Indirubin-3'-oxime reversibly inhibits the proliferation of many cells types, arresting cycling in the G_2/M phase.[2,3]

References

1. LeClerc, S., Garnier, M., Hoessel, R., *et al.* Indirubins inhibit glycogen synthase kinase-3β and CDK5/P25, two protein kinases involved in abnormal tau phosphorylation in Alzheimer's disease. A property common to most cyclin-dependent kinase inhibitors? *J. Biol. Chem.* **276(1)**, 251-260 (2001).
2. Damiens, E., Baratte, B., Marie, D., *et al.* Anti-mitotic properties of indirubin-3'-monoxime, a CDK/GSK-3 inhibitor: Induction of endoreplication following prophase arrest. *Oncogene* **20**, 3786-3797 (2001).
3. Marko, D., Schätzle, S., Friedel, A., *et al.* Inhibition of cyclin-dependent kinase 1 (CDK1) by indirubin derivatives in human tumour cells. *Brit. J. Can.* **84(2)**, 283-289 (2001).

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