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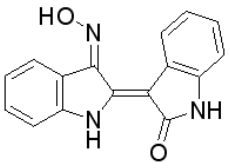
Product Information

Indirubin-3′-oxime

Catalog Number **I0404**
Store at Room Temperature

CAS RN 160807-49-8
Synonym: Indirubin-3′-monoxime

Product Description
Molecular Formula: $C_{16}H_{11}N_3O_2$
Formula Weight: 277.28



Indirubin is the active ingredient of the traditional Chinese medicine Danggui Longhui Wan, a mixture of plants used in the treatment of chronic diseases such as myelocytic leukemias. Synthetic indirubin and its analogues were found to be potent inhibitors (IC_{50} = 50–100 nM) of cyclin-dependent kinases (CDKs).[1] Indirubin interacts with the ATP-binding site on the enzyme through van der Waals interactions and three hydrogen bonds. Other studies have shown indirubins are also powerful inhibitors (IC_{50} = 5–50 nM) of glycogen synthase kinase-3β (GSK-3β). Indirubins also bind to GSK-3β via the ATP-binding site.[2]

Indirubin-3′-oxime inhibits the proliferation of a wide range of cells by arresting the cells in the G_2/M phase of the cell cycle. This may be due to inhibition of the cyclin B-CDK1 complex.[1,3]

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Indirubin-3′-oxime is soluble in DMSO at 18 mg/ml. It is slightly soluble in water at 0.25 mg/ml.

Storage/Stability
Store the product at room temperature.

References
1. Hoessel, R. et al., Indirubin, the active constituent of a Chinese antileukaemia medicine, inhibits cyclin-dependent kinases. Nat. Cell Biol., **1**, 60-67 (1999).
2. Leclerc, S. et al., Indirubins inhibit glycogen synthase kinase-3 beta 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**, 251-260 (2001).
3. Damiens, E. 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).

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