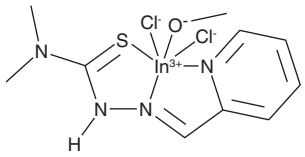
PRODUCT INFORMATION

Indium (III) thiosemicarbazone 5b

Item No. 35601

CAS Registry No.: 2345755-20-4
Formal Name: (OC-6-43)-dichloro[N,N-dimethyl-2-[(2-pyridinyl-κN)methylene]hydrazinecarbothioamide-κN^2,κS]methoxy-indium
MF: $C_{10}H_{15}Cl_2InN_4OS$
FW: 425.0
Purity: ≥95%
UV/Vis.: λ_{max}: 302, 411 nm
Supplied as: A 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

Indium (III) thiosemicarbazone 5b is supplied as a solid. A stock solution may be made by dissolving the indium (III) thiosemicarbazone 5b in the solvent of choice, which should be purged with an inert gas. Indium (III) thiosemicarbazone 5b is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of indium (III) thiosemicarbazone 5b in these solvents is approximately 1 and 10 mg/ml, respectively. Indium (III) thiosemicarbazone 5b is slightly soluble in ethanol.

Indium (III) thiosemicarbazone 5b is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, indium (III) thiosemicarbazone 5b should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Indium (III) thiosemicarbazone 5b has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Indium (III) thiosemicarbazone 5b is an anticancer agent.[1] It is cytotoxic to A549, MCF-7 breast, MCF-7/DDP cisplatin-resistant breast, and HI 7702 liver cancer cells (IC_{50}s = 2.41, 1.97, 2.11, and 8.95 µM, respectively). Indium (III) thiosemicarbazone 5b decreases PI3K, Akt, mTOR, P-gp, and GSH levels in MCF-7/DDP cells. *In vivo*, indium (III) thiosemicarbazone 5b (2.5 µmol/kg) reduces tumor weight and volume in an MCF-7/DDP mouse xenograft model. Liposomes containing indium (III) thiosemicarbazone 5b also induce apoptosis and pro-death autophagy in MCF-7/DDP cells, as well as reduce tumor volume and weight in an MCF-7/DDP mouse xenograft model.

Reference

1. Jiang, M., Chu, Y., Yang, T., *et al.* Developing a novel indium(III) agent based on liposomes to overcome cisplatin-induced resistance in breast cancer by multitargeting the tumor microenvironment components. *J. Med. Chem.* **64(19)**, 14587-14602 (2021).

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