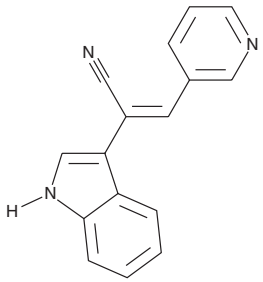
PRODUCT INFORMATION

Paprotrain

Item No. 10524

CAS Registry No.: 57046-73-8
Formal Name: (αZ)-(3-pyridinylmethylene)-1H-indole-3-acetonitrile
Synonym: Passenger Proteins Transport Inhibitor
MF: $C_{16}H_{11}N_3$
FW: 245.3
Purity: ≥95%
UV/Vis.: λ_{max}: 216, 278, 365 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

Paprotrain is supplied as a crystalline solid. A stock solution may be made by dissolving the paprotrain in the solvent of choice. Paprotrain is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of paprotrain in ethanol is approximately 0.2 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Paprotrain is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, paprotrain should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Paprotrain has a solubility of approximately 0.1 mg/ml in a 1:6 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Mitotic kinesin-like protein 2 (MKLP-2) is an N-terminal motor from the kinesin-6 family that is essential for normal cleavage furrow ingression and cytokinesis. Its activity mediates the relocation of the chromosome passenger proteins Aurora B kinase and survivin from the centromeres to the central spindle in anaphase cells in order to facilitate cytokinesis, avoiding the generation of binucleated cells.[1] Paprotrain, PAssenger PROteins TRAnsport INhibitor, is the first known inhibitor of MKLP-2. It is a cell-permeable, reversible inhibitor uncompetitive with ATP (K_i = 3.4 µM) and noncompetitive with microtubules (K_i = 1.6 µM), demonstrating ATPase inhibition of basal and microtubule-stimulated activities with IC_{50} values of 1.35 and 0.83 µM, respectively.[2] Paprotrain does not inhibit twelve additional kinesins, including the closely related kinesin-6 motors MKLP-1 and MPP1.[2] Incubation with 10-50 µM paprotrain results in binucleated cells, perturbing relocation of Aurora B kinase and survivin without affecting microtubule polymerization.[2]

References

1. Good, J.A.D., Skoufias, D.A., and Kozielski, F. Elucidating the functionality of kinesins: An overview of small molecule inhibitors. *Semin. Cell Dev. Biol.* **22(9)**, 935-945 (2011).
2. Tcherniuk, S., Skoufias, D.A., Labriere, C., *et al*. Relocation of Aurora B and survivin from centromeres to the central spindle impaired by a kinesin-specific MKLP-2 inhibitor. *Angew. Chem. Int. Ed.* **49**, 8228-8231 (2010).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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