Small Molecules

Ruxolitinib

JAK/STAT pathway inhibitor; Inhibits JAK1 and JAK2

Catalog #	73402	1 mg
	73404	10 mg

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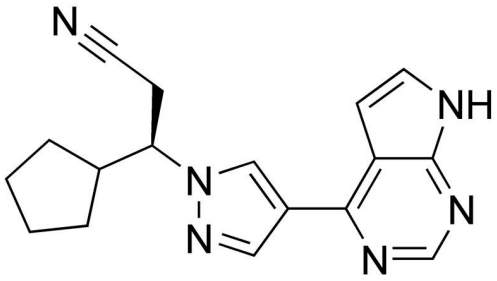
Product Description

Ruxolitinib is an ATP mimic that inhibits all Janus-associated kinase (JAK) family kinases with a preference for JAK-1 and JAK-2 over JAK-3 and TYK2 with IC_{50} values of 3.3, 2.8, 428, and 19 nM, respectively (Quintás-Cardama et al.; Verstovsek).

Molecular Name:	Ruxolitinib
Alternative Names:	INC 424; INCB 018424
CAS Number:	941678-49-5
Chemical Formula:	$C_{17}H_{18}N_6$
Molecular Weight:	306.4 g/mol
Purity:	≥ 98%
Chemical Name:	(3R)-3-cyclopentyl-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)pyrazol-1-yl]propanenitrile
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 15 mM · Absolute ethanol ≤ 40 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 326 µL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

CANCER RESEARCH
· Suppresses erythroid progenitor colony formation from peripheral blood mononuclear cells of polycythemia vera patients with the constitutively active JAK2 V617F mutation. Reduces malignant cell proliferation and decreases interleukin 6 and TNF-α signaling in a JAK2 V617F-driven mouse model of myeloproliferative disorder (Quintás-Cardama et al.).
OTHER
· Promotes hair regrowth in a mouse model of alopecia areata (Xing et al.).

References

Quintás-Cardama A et al. (2010) Preclinical characterization of the selective JAK1/2 inhibitor INCB018424: therapeutic implications for the treatment of myeloproliferative neoplasms. Blood 115(15): 3109–17.
Verstovsek S. (2009) Therapeutic potential of JAK2 inhibitors. Hematology Am Soc Hematol Educ Program 2009(1): 636–42.
Xing L et al. (2014) Alopecia areata is driven by cytotoxic T lymphocytes and is reversed by JAK inhibition. Nat Med 20(9): 1043–9.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).

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