Small Molecules

WHI-P131

JAK/STAT pathway inhibitor; Inhibits JAK3

Catalog #	73542	1 mg
	73544	10 mg

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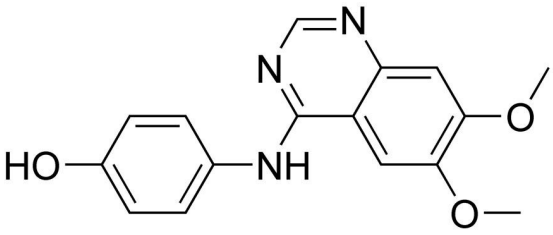
Product Description

WHI-P131 is an inhibitor of Janus kinase 3 (JAK3) with IC_{50} values of 9 and 78 µM against human and mouse proteins, respectively (Sudbeck et al.). It has also been reported to show significant inhibition of other kinases, including epidermal growth factor receptor (EGFR) in the nanomolar range (Changelian et al.; Uckun et al.). No significant inhibition of JAK1 or JAK2 has been observed (Sudbeck et al.).

Molecular Name:	WHI-P131
Alternative Names:	Janex-1
CAS Number:	202475-60-3
Chemical Formula:	$C_{16}H_{15}N_3O_3$
Molecular Weight:	297.3 g/mol
Purity:	≥ 98%
Chemical Name:	4-[(6,7-dimethoxy-4-quinazolinyl)amino]-phenol
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 ≤ 3 mM For example, to prepare a 1 mM stock solution in DMSO, resuspend 1 mg in 3.36 mL 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

MAINTENANCE AND SELF-RENEWAL
· Inhibits proliferation of neural stem cell-containing neurospheres at lower concentrations than the concentration required to inhibit proliferation of astrocyte cultures (Diamandis et al.).
IMMUNOLOGY
· Inhibits lipopolysaccharide-induced nitric oxide synthase expression and nitric oxide production in macrophages (Sareila et al.).
CANCER RESEARCH
· Induces apoptosis and cell death in human glioblastoma cell lines U373 and U87 (Narla et al.).

References

Changelian PS et al. (2008) The specificity of JAK3 kinase inhibitors. Blood 111(4): 2155–7.
Diamandis P et al. (2007) Chemical genetics reveals a complex functional ground state of neural stem cells. Nat Chem Biol 3(5): 268–73.
Narla RK et al. (1998) 4-(3'-Bromo-4'hydroxylphenyl)-amino-6,7-dimethoxyquinazoline: a novel quinazoline derivative with potent cytotoxic activity against human glioblastoma cells. Clin Cancer Res 4(6): 1405–14.
Sareila O et al. (2008) Janus kinase 3 inhibitor WHI-P154 in macrophages activated by bacterial endotoxin: differential effects on the expression of iNOS, COX-2 and TNF-alpha. Int Immunopharmacol 8(1): 100–8.
Sudbeck EA et al. (1999) Structure-based design of specific inhibitors of Janus kinase 3 as apoptosis-inducing antileukemic agents. Clin Cancer Res 5(6): 1569–82.
Uckun FM et al. (2001) Structure-based design of novel anticancer agents. Curr Cancer Drug Targets 1(1): 59–71.

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