

# JAK Inhibitor I

JAK/STAT pathway inhibitor; Inhibits JAK1, JAK2, and JAK3

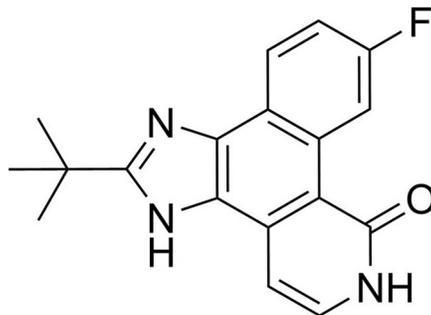
Catalog #74024

1 mg

## Product Description

Janus Associated Kinase (JAK) Inhibitor I is a pyridine-containing tetracycle that disrupts JAK activity by interacting with the ATP binding domain. This inhibitor inhibits mouse JAK3 with  $K_i = 5$  nM, JAK family members TYK2 and JAK2 with  $IC_{50} = 1$  nM, and mouse JAK1 with  $IC_{50} = 15$  nM, while showing weaker inhibition of other kinases (Thompson et al.).

<b>Molecular Name:</b>	JAK Inhibitor I
<b>Alternative Names:</b>	CMP 6, Janus-associated kinase inhibitor I, Pyridone 6
<b>CAS Number:</b>	457081-03-7
<b>Chemical Formula:</b>	$C_{18}H_{16}FN_3O$
<b>Molecular Weight:</b>	309.3 g/mol
<b>Purity:</b>	≥ 98%
<b>Chemical Name:</b>	2-(1,1-dimethylethyl)-9-fluoro-1,6-dihydro-7H-benz[h]imidazo[4,5-f]isoquinolin-7-one
<b>Structure:</b>	



## Properties

<b>Product Format:</b>	A crystalline solid
<b>Stability and Storage:</b>	Product stable at -20°C as supplied. As a precaution, STEMCELL recommends storing all small molecules away from direct light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
<b>Preparation:</b>	<ul style="list-style-type: none"><li>• DMSO <math>\leq</math> 45 mM</li><li>• Absolute ethanol <math>\leq</math> 3 mM</li></ul> <p>For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 323 <math>\mu</math>L 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.</p> <p>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 or absolute ethanol concentration above 0.1% due to potential cell toxicity.</p>

## Published Applications

### REPROGRAMMING

- Inhibits the generation of mouse induced pluripotent stem cells (Efe et al.; Kim et al.).

### IMMUNOLOGY

- Inhibits anti-viral response associated with JAK/STAT pathway activation (Xu et al.).

## References

- Efe JA et al. (2011) Conversion of mouse fibroblasts into cardiomyocytes using a direct reprogramming strategy. *Nat Cell Biol* 13(3): 215–22.
- Kim J et al. (2011) Direct reprogramming of mouse fibroblasts to neural progenitors. *Proc Natl Acad Sci USA* 108(19): 7838–43.
- Thompson JE et al. (2002) Photochemical preparation of a pyridone containing tetracycline: a Jak protein kinase inhibitor. *Bioorg Med Chem Lett* 12(8): 1219–23.
- Xu L et al. (2016) IFN regulatory factor 1 restricts hepatitis E virus replication by activating STAT1 to induce antiviral IFN-stimulated genes. *FASEB J* 30(10): 3352–67.

## Related Products

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