

AG490

Janus kinase 2 inhibitor

Catalog # tlrl-ag4

For research use only

Version # 15K02-MM

PRODUCT INFORMATION

Content:

- 10 mg AG490

Storage and stability:

- AG490 is provided as a translucent film and shipped at room temperature. Store at -20°C. Solid product is stable 1 year at -20°C.
- Upon resuspension, AG490 should be aliquoted and stored at -20°C. Avoid repeated freeze-thaw cycles. Resuspended product is stable for 6 months at -20°C when properly stored.

Quality control:

- Purity: ≥99% (UHPLC)
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) is confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

AG490 is a specific and potent inhibitor of the Janus kinase 2 protein (JAK2)¹. JAK2 regulates the phosphorylation of JNK, primarily through PI3K. It has been established that JAK2 plays an important role in TLR-mediated biological responses, blocking TLR4-mediated responses to LPS² and TLR5-mediated responses to flagellin³. JAK2 is also involved in cytokine signaling, such as IL-2, IL-6 and IL-12.

CHEMICAL PROPERTIES

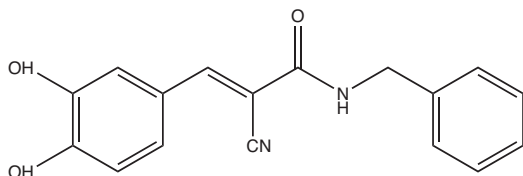
Synonym: Tyrphostin B42

Formula: C₁₇H₁₄N₂O₃

Molecular weight: 294.3

Solubility: 50 mg/ml in DMSO and 5 mg/ml in ethanol

Structure:



METHODS

Preparation of stock solution (40 mM)

1. Add 850 µl DMSO to 10 mg AG490.
2. Vortex until complete solubilization. Prepare aliquots and store at -20°C. Once AG490 is solubilized, dilutions can be prepared with aqueous buffers.

Working concentration: 20-50 µM for cell culture assays

PROTOCOLS (For reference only)

Cell Culture Assay³

Cells: Bone marrow-derived macrophages

Working concentration: 20 µM

Incubation time: 1 h

Method: Western blotting to study STAT1 activation

Cell Culture Assay⁴

Cells: U266 human myeloma cell line

Working concentration: 25-50 µM

Incubation time: 24 h

Method: Flow cytometry and apoptosis assays

Animal Study⁵

Animal model: NOD and BALB/c mice

Dose: 1 mg/mouse

Administration: Intraperitoneal injection (i.p.)

1. **Levitzi A. 1990.** Tyrphostins- potential antiproliferative agents and novel molecular tools. *Biochem. Pharmacol.* 40:913-918. 2. **Kimura A et al. 2005.** Suppressor of cytokine signaling-1 selectively inhibits LPS-induced IL-6 production by regulating JAK-STAT. *PNAS* 102:17089-17094. 3. **Ha H et al. 2008.** Stimulation by TLR5 Modulates Osteoclast Differentiation through STAT1/IFN-β1. *J. Immuno.* 180:1382-1389. 4. **Catlett-Falcone R. et al., 1999.** Constitutive activation of Stat3 signaling confers resistance to apoptosis in human U266 myeloma cells. *Immunity.* 1999 10(1):105-15. 5. **Davoodi-Semiromi A. et al., 2012.** The tyrphostin agent AG490 prevents and reverses Type 1 diabetes in NOD mice. *PLoS One.* 7(5):e36079.

RELATED PRODUCTS

Product	Description	Catalog Code
AZD1480	JAK1 & JAK2 inhibitor	inh-ad14
CP-690550	JAK3 Inhibitor	tlrl-cp69
Ruxolitinib	JAK1 & JAK2 inhibitor	tlrl-rux

TECHNICAL SUPPORT

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