
Product Data Sheet

Product Name: Ilginatinib maleate (NS-018 (maleate))

Cat. No.: GC33018

Chemical Properties

Cas. No. 1354799-87-3

SMILES CN1N=CC(C2=CC(N[C@H](C3=CC=C(F)C=C3)C)=NC(NC4=NC=CN=C4)=C2)=C1.O=C(O)/C=C\C(O)=OFormula C₂₅H₂₄FN₇O₄ M.Wt 505.5

Solubility DMSO : ≥ 30 mg/mL (59.35 mM) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol**

Cell experiment: Bone marrow mononuclear cells (BMMNCs) from healthy volunteers and myelodysplastic syndrome (MDS) patients are incubated in MethoCult GF H4434 methylcellulose medium containing various hematopoietic cytokines at 1.0 × 10⁵ cells/mL with or without NS-018 at 37°C in a humidified atmosphere of 5% CO₂. Commercially available purified normal human CD34-positive (CD34+) BM cells are used as a control. Burst-forming unit-erythroid (BFU-E) and colonyforming unit-granulocyte/macrophage (CFU-GM) colonies are counted under an inverted microscope on day 14 of culture[2].

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

Mice[1]Female BALB/c nude mice are placed in blanket cages in an environment maintained at 21-25°C and 45-65% relative humidity, with artificial illumination for 12 h and a ventilation frequency of at least 15 times/h. They are allowed free access to food pellets and tap water. Ba/F3-JAK2V617F cells (106 per mouse) are inoculated intravenously into 7-week-old mice. Administration of vehicle (0.5% methylcellulose) or Ilginatinib (NS-018) twice daily by oral gavage begins the day after cell inoculation. Survival is monitored daily, and moribund mice are humanely killed and their time of death is recorded for purposes of survival analysis. In a parallel study, all mice are humanely killed after 8 days of administration, and their spleens are removed and weighed[1].

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:

- [1]. Nakaya Y, et al.
Efficacy of NS-018,
a potent and
selective JAK2/Src
inhibitor, in
primary cells and
mouse models of
myeloproliferative
neoplasms. Blood
Cancer J. 2011
Jul;1(7):e29.
- [2]. Kuroda J, et al.
NS-018, a selective
JAK2 inhibitor,
preferentially
inhibits CFU-GM
colony formation
by bone marrow
mononuclear cells
from high-risk
myelodysplastic
syndrome patients.
Leuk Res. 2014
May;38(5):619-24.

Background

Ilginatib (maleate) (NS-018 (maleate)) is a highly active and orally bioavailable JAK2 inhibitor, with an IC₅₀ of 0.72 nM, 46-, 54-, and 31-fold selectivity for JAK2 over JAK1 (IC₅₀, 33 nM), JAK3 (IC₅₀, 39 nM), and Tyk2 (IC₅₀, 22 nM).

Ilginatib (maleate) (NS-018 (maleate)) is a highly active JAK2 inhibitor, with an IC₅₀ of

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

0.72 nM, 46-, 54-, and 31-fold selectivity for JAK2 over JAK1 (IC₅₀, 33 nM), JAK3 (IC₅₀, 39 nM), and Tyk2 (IC₅₀, 22 nM). Ilginatinib (NS-018) also inhibits Src-family kinases, especially SRC and FYN, and weakly inhibits ABL and FLT3 with 45- and 90-fold selectivity for JAK2, respectively. Ilginatinib (NS-018) shows potent inhibitory activity against cell lines JAK2V617F or MPLW515L mutations or the TEL-JAK2 fusion gene (expressing a constitutively activated JAK2) with IC₅₀ of 11-120 nM, but has only minimal cytotoxicity against most other hematopoietic cell lines that have no constitutively activated JAK2[1]. Ilginatinib (NS-018) (0.5 μM) preferentially suppresses colony-forming unit/granulocyte/macrophage (CFU-GM) formation from myelodysplastic syndrome (MDS)-derived bone marrow mononuclear cells (BMMNCs). Ilginatinib (NS-018) (1 μM) suppresses the phosphorylation of STAT3 (the downstream kinase of JAK2) in CFU-GM-forming cells from MDS patients[2].

Ilginatinib (NS-018) (12.5, 25, 50, 100 mg/kg, p.o.) potently prolongs the survival of mice and reduces splenomegaly in a mouse Ba/F3-JAK2V617F disease model. Ilginatinib (NS-018) (25, 50 mg/kg, p.o.) significantly reduces leukocytosis, hepatosplenomegaly and extramedullary hematopoiesis, improves nutritional status, and prolongs survival in JAK2V617F transgenic mice[1].

[1]. Nakaya Y, et al. Efficacy of NS-018, a potent and selective JAK2/Src inhibitor, in primary cells and mouse models of myeloproliferative neoplasms. *Blood Cancer J.* 2011 Jul;1(7):e29. [2]. Kuroda J, et al. NS-018, a selective JAK2 inhibitor, preferentially inhibits CFU-GM colony formation by bone marrow mononuclear cells from high-risk myelodysplastic syndrome patients. *Leuk Res.* 2014 May;38(5):619-24.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA