

Product Data Sheet

Product Name: ZM39923

Cat. No.: GC37971

Chemical Properties

Cas. No. 273727-89-2

SMILES O=C(C1=CC=CC=C2C=CC=CC2=C1)CCN(C(C)C)CC3=CC=CC=C3

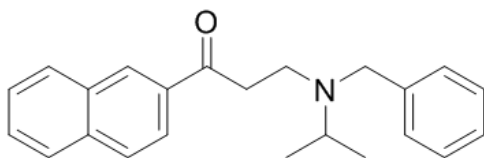
Formula $C_{23}H_{25}NO$ M.Wt 331.45

Solubility Soluble in DMSO 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: PCI-37B (a metastatic SCCHN cell line expressing CCR7) cells are cultured in Dulbecco's modified Eagle's medium (DMEM) containing 10% fetal bovine serum, penicillin, and streptomycin in an atmosphere of 5% CO₂ and 95% air at 37°C. The ZM39923 inhibitor treatment at the dose determined using the Cell Counting Kit-8[3].

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

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References:

- [1]. Brown GR, et al. Naphthyl ketones: a new class of Janus kinase 3 inhibitors. *Bioorg Med Chem Lett.* 2000 Mar 20;10(6):575-9.
- [2]. Lai TS, et al. Identification of chemical inhibitors to human tissue transglutaminase by screening existing drug libraries. *Chem Biol.* 2008 Sep 22;15(9):969-78.
- [3]. Zhang Z, et al. Jak3 is involved in CCR7-dependent migration and invasion in metastatic squamous cell carcinoma of the head and neck. *Oncol Lett.* 2017 May;13(5):3191-3197.

Background

ZM39923 is a JAK3 inhibitor, with a pIC₅₀ of 7.1; ZM39923 also potently inhibits tissue transglutaminase (TGM2) with an IC₅₀ of 10 nM. JAK3|7.1 (pIC₅₀)|JAK1|4.4 (pIC₅₀)|EGF-R|5.6 (pIC₅₀)|Lck|5.0 (pIC₅₀)|CDK4|5.0 (pIC₅₀)|TGM2|10 nM (IC₅₀)

ZM39923 is a JAK3 inhibitor, with a pIC₅₀ of 7.1. ZM39923 (Compound 7) shows weak inhibitory effect on EGF-R and JAK1 (pIC₅₀, 5.6, 4.4, respectively), and insignificantly inhibits tyrosine kinases Lck and CDK4 (pIC₅₀ <5.0)[1]. ZM39923 potently inhibits tissue transglutaminase (TGM2) with an IC₅₀ of 10 nM, and acts directly on purified TGM2 to inhibit the Ca²⁺ activated form of TGM2[2]. ZM39923 blocks the phosphorylation of JAK3 induced by CCL19, and such an effect is similar to that of CCR7 antibody. ZM39923 also significantly blocks the CCL19 induced wound closure rate, and decreases the migration and invasion of PCI-37B cells[3].

- [1]. Brown GR, et al. Naphthyl ketones: a new class of Janus kinase 3 inhibitors. *Bioorg Med Chem Lett.* 2000 Mar 20;10(6):575-9. [2]. Lai TS, et al. Identification of chemical inhibitors to human tissue transglutaminase by screening existing drug libraries. *Chem Biol.* 2008 Sep 22;15(9):969-78. [3]. Zhang Z, et al. Jak3 is involved in CCR7-dependent migration and invasion in metastatic squamous cell carcinoma of the head and neck. *Oncol Lett.* 2017 May;13(5):3191-3197.

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