

Product Data Sheet

Product Name: NSC668394

Cat. No.: GC63589

Chemical Properties

Cas. No. 382605-72-3

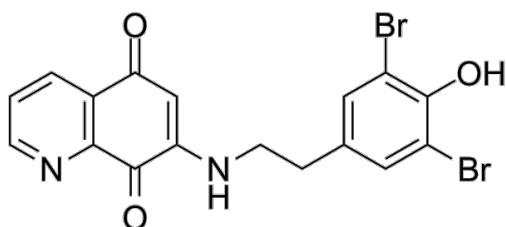
Formula $C_{17}H_{12}Br_2N_2O_3$ M.Wt 452.1

Solubility DMSO : 3.85 mg/mL (8.52 mM); ultrasonic and warming and heat to 80°C) 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 [1]:

Cell lines	CCL-136 cells
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Caution: Product has not been fully validated for medical applications. For research use only.

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Preparation Method	CCL-136 cells were cultured in DMEM medium, supplemented with 10% fetal bovine serum, 2mM glutamine, and 1% penicillin-streptomycin, at 37°C in an incubator with 5% CO ₂ . Cells were seeded at a density of approximately 3×10^4 cells per well in 96-well plates overnight and were treated with different concentrations of NSC668394 (0, 1, 2.5, 5, and 10μM) or vehicle control (DMSO) for 96h, the cell viability was measured.
Reaction Conditions	0, 1, 2.5, 5, and 10μM; 96h
Applications	NSC668394 treatment markedly decreased cell viability in CCL-136 cells in a dose-dependent manner.
Animal experiment [2]:	
Animal models	Female NSG mice
Preparation Method	Female NSG mice (6 weeks old) were housed in a normal atmosphere under a 12h light-dark cycle at 24°C with 50% humidity and provided with standard laboratory food and water ad libitum. SU-DHL-6 cells were suspended in PBS and injected subcutaneously into the flanks of mice. After the tumor size reached 200mm ³ , half the mice were injected intraperitoneally with 5% DMSO and the other half with 13.5mg/kg/day of NSC668394. Tumor volume was determined by digital calipering three times a week.
Dosage form	13.5mg/kg/day; 9 days; i.p.
Applications	NSC668394 treatment retarded tumor growth in mice with SU-DHL-6 xenografts.

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References:[1] Proudfit A, Bhunia N, Pore D, et al. Pharmacologic Inhibition of Ezrin-Radixin-Moesin Phosphorylation Is a Novel Therapeutic Strategy in Rhabdomyosarcoma[J]. Sarcoma, 2020, 2020(1): 9010496.[2] Pore D, Bodo J, Danda A, et al. Identification of Ezrin-Radixin-Moesin proteins as novel regulators of pathogenic B-cell receptor signaling and tumor growth in diffuse large B-cell lymphoma[J]. Leukemia, 2015, 29(9): 1857-1867.

Background

NSC668394 is a potent ezrin (Thr567) phosphorylation inhibitor, with a K_D of $12.59\mu M$ ^[1].

NSC668394 decreases peripheral Ezrin content in neutrophils and increases calcium-dependent Ezrin cleavage, thereby preventing multiple and sustained morphological changes in neutrophils during prolonged chemotaxis^[2]. NSC668394 reduces the connection between the cell membrane and the actin cortex, resulting in decreased membrane tension, accompanied by reduced surface area, increased cortical tension, remodeling of the actin cytoskeleton, and decreased cell height^[3]. NSC668394 has been widely used in preclinical models to inhibit the growth of various tumors^[4].

In vitro, NSC668394 treatment for 96h inhibited the viability of Rh41, Rh18, CCL-136, and Rh30 cells, with IC_{50} values of $2.766\mu M$, $3.291\mu M$, $4.115\mu M$, and $7.338\mu M$, respectively^[5]. Treatment with $5\mu M$ NSC668394 for 24 hours inhibited the migration of fibroblast-like synoviocytes (FLS) derived from patients with rheumatoid arthritis (RA) and reduced the formation of actin stress fibers^[6].

In vivo, NSC668394 treatment via intraperitoneal injection at a dose of $13.5mg/kg/day$ for 9 days markedly suppressed tumor growth in the SU-DHL-6 xenograft mouse model and led to a decrease in the levels of pAkt, Bcl2, and Mcl1 in the tumors^[7]. Intraperitoneal injection of NSC668394 ($0.226mg/kg/day$), five days a week for 7 weeks, inhibited the metastatic growth of osteosarcoma (OS) in the lungs of mice and improved the survival of mice^[1].

References:

- [1] Bulut G, Hong S H, Chen K, et al. Small molecule inhibitors of ezrin inhibit the invasive phenotype of osteosarcoma cells[J]. Oncogene, 2012, 31(3): 269-281.
- [2] Roberts R E, Elumalai G L, Hallett M B. Phagocytosis and motility in human neutrophils is competent but compromised by pharmacological inhibition of ezrin phosphorylation[J]. Current Molecular Pharmacology, 2018, 11(4): 305-315.

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- [3] Rouven Brückner B, Pietuch A, Nehls S, et al. Ezrin is a major regulator of membrane tension in epithelial cells[J]. Scientific reports, 2015, 5(1): 14700.
- [4] Lipreri da Silva J C, Vicari H P, Machado-Neto J A. Perspectives for targeting ezrin in cancer development and progression[J]. Future pharmacology, 2023, 3(1): 61-79.
- [5] Proudfit A, Bhunia N, Pore D, et al. Pharmacologic Inhibition of Ezrin-Radixin-Moesin Phosphorylation Is a Novel Therapeutic Strategy in Rhabdomyosarcoma[J]. Sarcoma, 2020, 2020(1): 9010496.
- [6] Xiao Y, Sun M, Zhan Z, et al. Increased phosphorylation of ezrin is associated with the migration and invasion of fibroblast-like synoviocytes from patients with rheumatoid arthritis[J]. Rheumatology, 2014, 53(7): 1291-1300.
- [7] Pore D, Bodo J, Danda A, et al. Identification of Ezrin-Radixin-Moesin proteins as novel regulators of pathogenic B-cell receptor signaling and tumor growth in diffuse large B-cell lymphoma[J]. Leukemia, 2015, 29(9): 1857-1867.

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