

Product Data Sheet

Product Name: U-104
Cat. No.: GC17378

Chemical Properties

Cas. No. 178606-66-1

Chemical Name 1-(4-fluorophenyl)-3-(4-sulfamoylphenyl)urea

SMILES C1=CC(=CC=C1NC(=O)NC2=CC=C(C=C2)S(=O)(=O)N)F

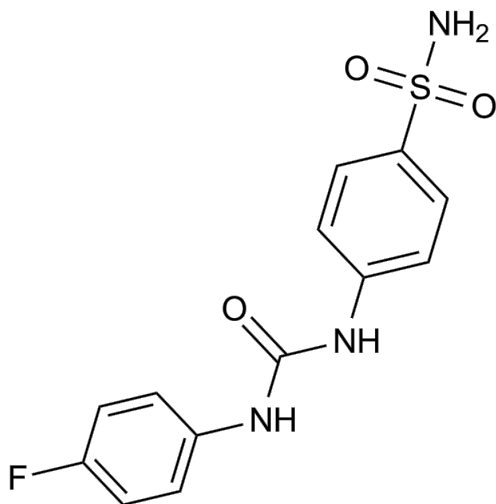
Formula $C_{13}H_{12}FN_3O_3S$ M.Wt 309.32

Solubility ≥ 11.5 mg/mL in DMSO, ≥ 9.14 mg/mL in EtOH with ultrasonic and warming
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



Background

U-104 is a potent carbonic anhydrase (CA) inhibitor for CA IX and CA XII with K_i of 45.1 nM and 4.5 nM; low inhibition for CA I and CA II. IC_{50} value: 45.1 nM/4.5 nM (K_i , CA IX/CA XII) [1] Target:

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

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Carbonic anhydrase inhibitor in vitro: U-104 (50 μ M) blocks the mesenchymal phenotype in the cancer stem cells population in hypoxia condition of 4T1 cells. U-104 (<50 μ M) significantly reduces migration in a dose-dependent manner in metastatic MDA-MB-231 LM2-4Luc+ cells, with cells growing as compact colonies similar to parental MDA-MB-231 cells [2]. in vivo: U-104 (38 mg/kg) inhibits primary tumor growth in the mice implanted orthotopically with MDA-MB-231 LM2-4Luc+ cells. U-104 (19 mg/kg) inhibits metastases formation in the 4T1 experimental metastasis mice model [1]. U-104 (38 mg/kg) significantly delay primary tumor growth and reduces cancer stem cell population in NOD/SCID mice orthotopically implanted with MDA-MB-231 LM2-4Luc+ cells. U-104 (5 mg/mL, oral gavage) shows a significant delay in tumor growth in Balb/c mice orthotopically implanted with 4T1 cells [2].

References:

- [1]. Lou Y, et al. Targeting tumor hypoxia: suppression of breast tumor growth and metastasis by novel carbonic anhydrase IX inhibitors. *Cancer Res.* 2011 May 1;71(9):3364-76.
- [2]. Lock FE, et al. Targeting carbonic anhydrase IX depletes breast cancer stem cells within the hypoxic niche. *Oncogene.* 2013 Oct 31;32(44):5210-9.

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