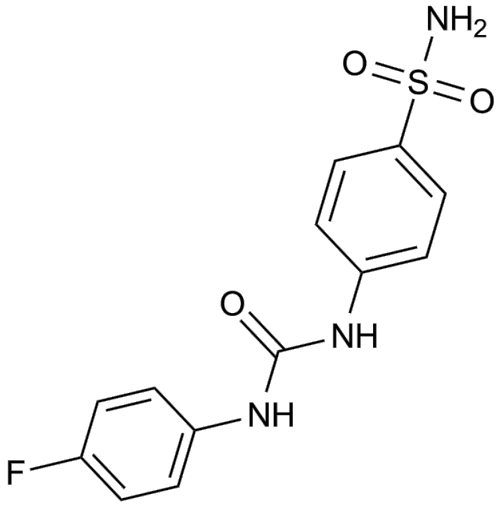
Product Data Sheet

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 Ki of 45.1 nM and 4.5 nM; low inhibition for CA I and CA II.IC50 value: 45.1 nM/4.5 nM(Ki, CA IX/CA XII) [1]Target:

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Carbonic anhydrase inhibitorin vitro: U-104 (50 μM) blocks the mesenchymal phenotype in the cancer stem cells population in hypoxia condition of 4T1 cells. U-104 (<50 μM) 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.

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