Product Data Sheet

Product Name: 4-(6-Bromo-2-benzothiazolyl)benzenamine
Cat. No.: GC31208

Chemical Properties

Cas. No.	566169-97-9		
SMILES	NC1=CC=C(C2=NC3=CC=C(Br)C=C3S2)C=C1		
Formula	$C_{13}H_9BrN_2S$	M.Wt	305.19
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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: For fluorescence Measurement of Uptake of 4-(6-Bromo-2-benzothiazolyl)benzenamine, cultured A375 cells are seeded on glass coverslips with a density of 2×104 cells/well in 24-well plate for 24 h until cell attachment. Then the cells are exposed to 4-(6-Bromo-2-benzothiazolyl)benzenamine at 5 μM for indicated times in the dark. The cells are washed twice with PBS and are then fixed with 4% paraformaldehyde at 4°C for 30 min. The qualitative expression of cell fluorescence is determined using a Leica inverted microscope[2].

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Animal experiment:

Mice[2]A total of 5×106 B16 cells are inoculated into female ICR mice (about 19-21 g, 7 weeks). The subcutaneous inoculation of tumor cells resulted in tumor generation at the injection site. When tumors reached about 4×4 mm2 in diameter, mice are separated into groups. Each group had four mice in each experiment; 4 mg/kg of 4-(6-Bromo-2-benzothiazolyl)benzenamine is injected into the tumor site, and then tumor is exposed to different doses of UVA on the day after injection. Tumor volume is measured by calipers every 5 days after agent injection, and tumor volume is calculated[2]

References:

[1]. Klunk W, et al. Benzothiazole derivative compounds, compositions and uses. WO2004083195 A1

[2]. Chen YK, et al. Apoptosis induced by 2-aryl benzothiazoles-mediated photodynamic therapy in melanomas via mitochondrial dysfunction. Chem Res Toxicol. 2014 Jul 21;27(7):1187-98.

Background

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Background

4-(6-Bromo-2-benzothiazolyl)benzenamine is a β-amyloid PET (positron emission tomography) tracer that can be used in the diagnosis of neurological diseases, such as Alzheimer's and Down's syndrome.

4-(6-Bromo-2-benzothiazolyl)benzenamine (compound 6l) plus ultraviolet A (UVA) can induce caspase-3 activity, poly(ADP-ribose)polymerase cleavage, M30 positive CytoDeath staining, and subsequent apoptotic cell death. Treatment of A375 cells with 4-(6-Bromo-2-benzothiazolyl)benzenamine plus UVA results in a decrease in mitochondrial membrane potential (δΨmt), oxidative phosphorylation system (OXPHOS) subunits, and adenosine triphosphate (ATP) but an increase in mitochondrial DNA 4977-bp deletion via reactive oxygen species (ROS) generation. Transmission electron microscopy (TEM) observations also show major ultrastructural alterations of mitochondria[2].

4-(6-Bromo-2-benzothiazolyl)benzenamine plus UVA is shown to reduce murine melanoma size in a mouse model. 4-(6-Bromo-2-benzothiazolyl)benzenamine-PDT may serve as a potential ancillary modality for the treatment of melanoma[2].

[1]. Klunk W, et al. Benzothiazole derivative compounds, compositions and uses. WO2004083195 A1 [2]. Chen YK, et al. Apoptosis induced by 2-aryl benzothiazoles-mediated photodynamic therapy in melanomas via mitochondrial dysfunction. Chem Res Toxicol. 2014 Jul 21;27(7):1187-98.

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