4-(6-Bromo-2-benzothiazolyl)benzenamine

**Cat. No.:** HY-111514  
**CAS No.:** 566169-97-9  
**Molecular Formula:** C₁₃H₉BrN₂S  
**Molecular Weight:** 305.19  
**Target:** Amyloid-β  
**Pathway:** Neuronal Signaling

**Storage:** Please store the product under the recommended conditions in the COA.

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**BIOLOGICAL ACTIVITY**

**Description**  
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.

**IC₅₀ & Target**  
β-amyloid[¹]

**In Vitro**  
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 (ΔΨₘ), 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].

**In Vivo**  
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].

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**PROTOCOL**

**Cell Assay [²]**  
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].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Animal Administration [²]**  
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\(^2\)

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**REFERENCES**
