

Product Data Sheet

Product Name: SH6
Cat. No.: GC79173

Chemical Properties

Cas. No. 2619408-35-2

Formula $C_{23}H_{23}ClN_4O_4$ M.Wt 454.91

Solubility DMSO: 100 mg/mL (219.82 mM; Need ultrasonic) 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

SH6 is a CRBN-dependent proteasome degrader that targets ZBTB7A. SH6 can be used in the research of sickle cell disease and β -thalassemia [1].

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

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In Vivo, SH6 (2.5-5 mg/kg; i.p.; daily; 3 weeks) achieves dose-dependent in vivo fetal hemoglobin induction via ZBTB7A degradation in a humanized mouse xenotransplantation model, while preserving normal hematopoietic function and exhibiting a favorable safety profile at doses up to 5 mg/kg^[1].

In Vitro, SH6 binds specifically to ZBTB7A via two predicted sites, with the primary site between zinc fingers 1 and 2 relying on residues R402, Y410, and Q422 for stable interaction, as supported by docking scores of -7.12 for the primary site^[1]. SH6 (0.25-5 μ M; 6–24 h) reduces the ZBTB7A protein level in differentiating HUDEP-2 cells in a concentration-dependent manner^[1]. SH6 (50 μ M; 24 h) reduces ZBTB7A protein levels in SNU398 cells via post-transcriptional mechanisms, with a 4.1-fold decrease in protein abundance and a compensatory 7-fold increase in mRNA levels^[1]. SH6 (0.25-5 μ M; 24 h-4 days) mediates CRBN- and proteasome-dependent degradation of ZBTB7A in wild-type HUDEP-2 cells, with dose-dependent reduction in protein levels and compensatory increases in mRNA, while having no effect on ZBTB7A levels in CRBN-knockout cells^[1]. SH6 (0.25 μ M; 4 days or 11 days) induces CRBN- and ZBTB7A-dependent HbF expression in wild-type HUDEP-2 cells, increasing HbF to 19% of total hemoglobin and HBG1/2 mRNA 6.1-fold, while having no effect on HbF levels in CRBN-knockout or ZBTB7A-knockout cells^[1]. SH6 (0.05 μ M; intermittent incubation from day 7 to harvest) induces HbF expression in healthy donor-derived CD34+ HSPC-derived erythroid cells, reduces ZBTB7A protein levels, and does not impair erythroid differentiation or enucleation^[1]. SH6 (0.01-0.1 μ M; incubation during differentiation) induces dose-dependent HbF expression in SCD patient-derived CD34+ HSPC-derived erythroid cells, increasing HbF to 15.0% of total hemoglobin at 0.05 μ M, reducing HBB/HBBS mRNA levels, and not impairing erythroid differentiation or enucleation^[1]. SH6 (0.05-0.1 μ M; incubation during differentiation) induces HbF expression in β -thalassemia patient-derived CD34+ HSPC-derived erythroid cells, increasing HbF to 43.8% of total hemoglobin at 0.05 μ M, with a trend of dose-dependent induction^[1]. SH6 (10-100 nM; 72 h) has a favorable toxicity profile in hESCs and hiPSCs at concentrations up to 100 nM, as measured by MTT cell viability assay^[1].

References:

[1]. Liu J, et al. Discovery of A Small Molecule non-IMiD Degradator of ZBTB7A for the Treatment of β -hemoglobinopathies. bioRxiv. 2025 Sep 24.

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