

Small Molecules

StemRegenin 1 (Hydrochloride)

Aryl hydrocarbon receptor (AHR) antagonist

Catalog # 72352
72354

1 mg
5 mg



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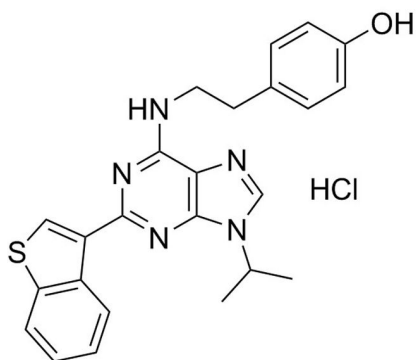
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Product Description

StemRegenin1 (SR1) is an antagonist of the aryl hydrocarbon receptor (AhR). It promotes ex vivo expansion of CD34+ human hematopoietic stem cells (Boitano et al.; Csaszar et al.) and the generation of CD34+ hematopoietic progenitor cells from non-human primate induced pluripotent stem (iPS) cells (Gori et al.). SR1 has been shown to collaborate with UM729 (Catalog #72332) in preventing differentiation of acute myeloid leukemia (AML) cells in culture (Pabst et al.). SR1 also stimulates the proliferation and differentiation of CD34+ hematopoietic progenitor cells into dendritic cells (Thordardottir et al.).

Molecular Name:	StemRegenin 1 (Hydrochloride)
Alternative Names:	SR1 (Hydrochloride)
CAS Number:	N/A
Chemical Formula:	C ₂₄ H ₂₃ N ₅ OS · HCl
Molecular Weight:	466.0 g/mol
Purity:	≥98%
Chemical Name:	4-(2-((2-(benzo[b]thiophen-3-yl)-9-isopropyl-9H-purin-6-yl)amino)ethyl) phenol, monohydrochloride
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 10 mM For example, to prepare a 5 mM stock solution in DMSO, resuspend 1 mg in 429 µL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL

- Promotes maintenance and expansion of human hematopoietic stem cells in culture (Boitano et al.; Csaszar et al.).

DIFFERENTIATION

- Stimulates differentiation of CD34+ hematopoietic progenitor cells into functional human dendritic cells (Thordardottir et al.).
- Promotes hematopoietic differentiation of iPS cells (Gori et al.).

CANCER RESEARCH

- Collaborates with UM729 in preventing differentiation of AML cells in culture (Pabst et al.).

References

- Boitano AE et al. (2010) Aryl hydrocarbon receptor antagonists promote the expansion of human hematopoietic stem cells. *Science* 329(5997): 1345–8.
- Csaszar E et al. (2012) Rapid expansion of human hematopoietic stem cells by automated control of inhibitory feedback signaling. *Cell Stem Cell* 10(2): 218–29.
- Gori JL et al. (2012) Efficient generation, purification, and expansion of CD34(+) hematopoietic progenitor cells from nonhuman primate-induced pluripotent stem cells. *Blood* 120(13): e35–44.
- Pabst C et al. (2014) Identification of small molecules that support human leukemia stem cell activity ex vivo. *Nat Methods* 11(4): 436–42.
- Thordardottir S et al. (2014) The aryl hydrocarbon receptor antagonist StemRegenin 1 promotes human plasmacytoid and myeloid dendritic cell development from CD34+ hematopoietic progenitor cells. *Stem Cells Dev* 23(9): 955–67.

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