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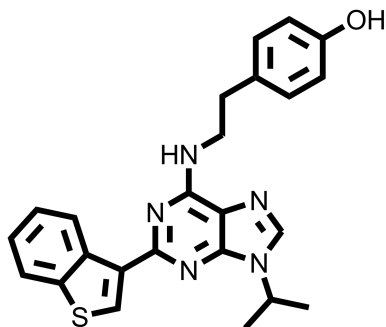
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StemRegenin1 (SR1) --- HSC Expansion Molecule

Chemical Name: 4-(2-((2-(benzo[b]thiophen-3-yl)-9-isopropyl-9H-purin-6-yl)amino)ethyl)phenol



Molecular Weight:	429.54
Formula:	C ₂₄ H ₂₃ N ₅ OS
Purity:	≥98%
CAS#:	1227633-49-9
Solubility:	DMSO up to 100 mM
Storage	Powder: 4°C 1 year DMSO: 4°C 3 month -20°C 1 year

Biological Activity:

StemRegenin1 (SR1) is a selective, cell-permeable antagonist of aryl hydrocarbon receptor. It can promote robust expansion and self-renewal of human CD34⁺ peripheral blood and cord blood hematopoietic stem cells (HSCs, EC₅₀ ~120 nM). SR1 expanded CD34⁺ cells from bone marrow of humans, monkeys and dogs, but not mice. Culture of HSCs with 1 μM SR1 for 21 days led to a 50-fold increase in cells expressing CD34 and a 17-fold increase in cells that retain the ability to engraft immunodeficient mice. Currently Novartis is conducting clinical trials, “LFU835-expanded Umbilical Cord Blood Hematopoietic Stem Cells in Patients With Hematological Malignancies”, related to this research.

How to Use:

In vitro: SR1 was used at 1 μM final concentration (DMSO 0.01%) in the ex vivo cell culture for 7-21 days. SR1 may be refreshed every 2-3 days during the culture.

In vivo: n/a

Reference:

1. Anthony E. Boitano et al. Aryl Hydrocarbon Receptor Antagonists Promote the Expansion of Human Hematopoietic Stem Cells. (2010) *Science* 329(5997):1345-8
2. Csaszar E, et al. Rapid expansion of human hematopoietic stem cells by automated control of inhibitory feedback signaling. (2012) *Cell Stem Cell*.10(2):218-29.

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