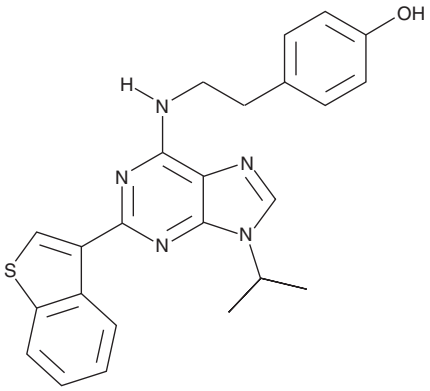
PRODUCT INFORMATION

StemRegenin 1

Item No. 10625



CAS Registry No.:	1227633-49-9
Formal Name:	4-[2-[[2-benzo[b]thien-3-yl-9-(1-methylethyl)-9H-purin-6-yl]amino]ethyl]-phenol
Synonym:	SR1
MF:	$C_{24}H_{23}N_5OS$
FW:	429.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 228, 273, 313 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

StemRegenin 1 (SR1) is supplied as a crystalline solid. A stock solution may be made by dissolving the SR1 in the solvent of choice, which should be purged with an inert gas. SR1 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of SR1 in these solvents is approximately 11 and 13 mg/ml, respectively.

SR1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, SR1 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. SR1 has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Extending the pluripotency of hematopoietic stem cells (HSC) is of key importance to the application of stem cell therapies in a variety of diseases. Loss of the expression of the cell surface proteins CD34 and CD133 is one marker of HSC differentiation and thus often monitored in assays to test potential compounds that promote HSC expansion. SR1 is a purine derivative that antagonizes aryl hydrocarbon receptor signaling with an IC_{50} value of 127 nM in $CD34^+$ cells, which results in sustained expression of CD34.[1] Human embryonic stem cells cultured with SR1 show a 50-fold increase in cells expressing CD34 (EC_{50} = 120 nM) and a 17-fold increase in cells that retain the ability to engraft immunodeficient mice.[1] This effect is quickly reversed with removal of SR1, which leads to rapid cell differentiation.

Reference

1. Boitano, A.E., Wang, J., Romeo, R., *et al.* Aryl hydrocarbon receptor antagonists promote the expansion of human hematopoietic stem cells. *Science* **329(5997)**, 1345-1348 (2010).

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