# PRODUCT INFORMATION

## StemRegenin 1 (hydrochloride)

*Item No. 14268*

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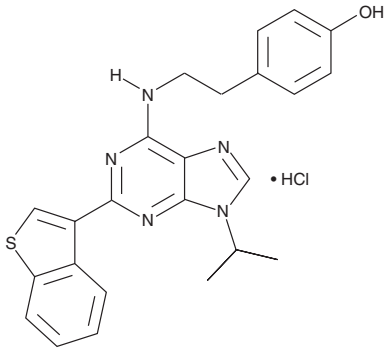
| **Formal Name:** | 4-[2-[[2-benzo[b]thien-3-yl-9-(1-methylethyl)-9H-purin-6-yl]amino] ethyl]-phenol, monohydrochloride |
| **Synonym:** | SR1 |
| **MF:** | $C_{24}H_{23}N_5OS \bullet HCl$ |
| **FW:** | 466.0 |
| **Purity:** | ≥98% |
| **UV/Vis.:** | $\lambda_{max}$: 227, 273, 313 nm |
| **Supplied as:** | A crystalline solid |
| **Storage:** | -20°C |
| **Stability:** | ≥2 years |




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

### Laboratory Procedures

StemRegenin 1 (SR1) (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the SR1 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. SR1 (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of SR1 (hydrochloride) in these solvents is approximately 5 mg/ml.

SR1 (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, SR1 (hydrochloride) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. SR1 (hydrochloride) has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMSO: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. SR1 (hydrochloride) has a formulation with greater solubility in aqueous buffers than standard SR1 (Item No. 10625).

### 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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