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## Product Data Sheet

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Product Name: StemRegenin 1 (hydrochloride)

Cat. No.: GC17248

### Chemical Properties

Cas. No. 2319882-01-2

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

SMILES OC1=CC=C(C=C1)CCNC2=C3C(N(C(C)C)C=N3)=NC(C4=CSC5=C4C=CC=C5)=N2.Cl

Formula  $C_{24}H_{23}N_5OS \cdot HCl$  M.Wt 466.0

Solubility  $\leq 5\text{mg/ml}$  in DMSO;  $5\text{mg/ml}$  in dimethyl formamide Storage Store at  $-20^\circ\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^\circ\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  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

IC50: 127 nM in CD34+ cells

StemRegenin 1 is an aryl hydrocarbon receptor signaling antagonist.

The aryl hydrocarbon receptor (AhR) is a protein that is encoded by the AHR gene. The AhR is a ligand-activated transcription factor involved in the regulation of biological responses to planar aromatic (aryl) hydrocarbons.

In vitro: In previous study, the unbiased screen with primary human HSCs identified the StemRegenin 1 (SR1), which could promote the ex-vivo expansion of CD34+ cells. In addition, the culture of HSCs with SR1 resulted in a 50-fold increase in cells expressing CD34. Moreover, the mechanistic studies showed that SR1 acted by antagonizing the AhR [1].

In vivo: In animal study, 300 to 30,000 uncultured CB CD34+ cells were transplanted into NSG mice. Results showed that CB CD34+ cells cultured with SR1 led to significant increases in human engraftment in the peripheral blood at 1 week, compared with mice transplanted with 10,000 uncultured cells or the progeny of 10,000 control cells [1].

Clinical trial: An open label, randomized phase II trial comparing SR-1 cultured umbilical cord

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

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blood to unmanipulated umbilical cord blood transplantation after a myeloablative CY/FLU/TBI conditioning has been proposed, but is not yet open for participant recruitment [2].

### References:

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

[2] <https://clinicaltrials.gov/ct2/show/NCT02765997> term=StemRegenin+1&rank=1

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