Small Molecules

RepSox

Activin/BMP/TGF-β pathway inhibitor;
Inhibits ALK5

Catalog # 72392 5 mg
72394 25 mg

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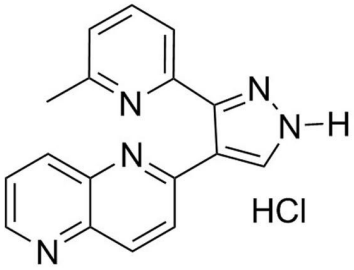
Product Description

RepSox is a cell permeable, selective inhibitor of the TGF-β type 1 receptor (TGFβRI) ALK5 (IC_{50} = 4, 18, and 23 nM for ALK5 autophosphorylation, TGF-β cellular assay, and ALK5 binding in HepG2 cells, respectively; Gellibert et al.). This inhibitor demonstrated less potent activity (IC_{50} > 16 µM) against 9 related kinases, including p38 MAPK and GSK3 (Gellibert et al.). This product is supplied as the hydrochloride salt of the molecule.

Molecular Name:	RepSox (Hydrochloride)
Alternative Names:	Alk 5 Inhibitor II; E 616452; SJN 2511
CAS Number:	Not applicable
Chemical Formula:	$C_{17}H_{13}N_5 \cdot HCl$
Molecular Weight:	323.8 g/mol
Purity:	≥ 98%
Chemical Name:	2-(3-(6-methylpyridin-2-yl)-1H-pyrazol-4-yl)-1,5-naphthyridine, monohydrochloride
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
Solubility:	· Absolute ethanol ≤ 1.5 mM · PBS (pH 7.2) ≤ 610 µM For example, to prepare a 1 mM stock solution in absolute ethanol, resuspend 5 mg in 15.4 mL of absolute ethanol. 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 absolute ethanol 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. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final ethanol concentration above 0.1% due to potential cell toxicity.

Published Applications

REPROGRAMMING
· Enhances reprogramming of mouse embryonic fibroblasts (MEFs) that have been transduced with OCT4, KLF4, and c-MYC (Ichida et al.; Subramanyam et al.)
· Direct lineage reprogramming of fibroblasts to mature neurons, in combination with CHIR99021, Valproic Acid, Forskolin, SP600125, Gö6983 and Y-27632 (Hu et al.).
DIFFERENTIATION
· Alone or in combination with forskolin, dexamethasone, and nicotinamide, induces differentiation of human pancreatic progenitor cells into insulin-producing cells (Kunisada et al.; Rezania et al.).

References

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Hu W et al. (2015) Direct conversion of normal and Alzheimer's Disease human fibroblasts into neuronal cells by small molecules. Cell Stem Cell 17(2): 204–212.
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Kunisada Y et al. (2012) Small molecules induce efficient differentiation into insulin-producing cells from human induced pluripotent stem cells. Stem Cell Res 8(2): 274–84.
Rezania A et al. (2011) Production of functional glucagon-secreting α-cells from human embryonic stem cells. Diabetes 60(1): 239–47.
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