Technical Data Sheet: LDN193189 (4HCl)

Catalog Number	SML05B
Synonyms	LDN193189 hydrochloride, LDN-193189 (HCl), LDN193189 monohydrochloride
Size	10 mg
Description	LDN193189 (HCl) is a highly-potent inhibitor of BMP signaling, specifically blocking ALK1 (IC_{50} of 0.8 nM), ALK2 (IC_{50} of 0.8 nM), ALK3 (IC_{50} of 5.3 nM), and ALK6 (IC_{50} of 16.7 nM), and in turn affecting Smad1/5/8 expression (Galvin-Burgess, et al.). LDN193189 (HCl) has been shown to contribute to the differentiation of pluripotent stem cells (PSCs) into functional pancreatic beta cells when combined with CHIR99021 (Cat. No. SML01B), SANT-1 (Cat. No. SML08B), Y27632 (Cat. No. SML13B), Compound E (Cat. No. SML02B), RepSox (Cat. No. SML06B), Triiodothyronine Salt (Cat. No. SML11F) along with other growth factors (Pagliuca, et al.). LDN193189 has also been utilized in the derivation of neural progenitor cells (Edri, et al.), and cortical neurons (Qi, et al.) from PSCs.
Molecular Weight	552.33
Molecular Formula	$C_{25}H_{26}Cl_4N_6$
Chemical Name	4-[6-(4-Piperazin-1-ylphenyl)pyrazolo[1,5-a]pyrimidin-3-yl]quinoline hydrochloride
CAS Number	1062368-62-0
Target	TGF-β Receptor
Appearance	Light yellow to yellow (Solid)
Purity	≥95% by LCMS
Solubility and Reconstitution	Soluble in H_2O up to 50 mM, for example: 10 mg/18.105 mL = 0.552 mg/mL = 1.0 mM 10 mg/3.621 mL = 2.762 mg/mL = 5.0 mM 10 mg/1.811 mL = 5.522 mg/mL = 10.0 mM 10 mg/0.905 mL = 11.050 mg/mL = 20.0 mM
Storage Temperature and Stability	Powder: -20°C 3 years 4°C 2 years In solvent: -80°C 6 months -20°C 1 month
References	Edri, et al. 2015. Analysing human neural stem cell ontogeny by consecutive isolation of Notch active neural progenitors. Nature Communications 6(6500). Galvin-Burgess, et al. 2012. TGF-β-superfamily signaling regulates embryonic stem cell heterogeneity: Self-renewal as a dynamic and regulated equilibrium. Stem Cells. 31(1): 45-58. Pagliuca, et al. 2014. Generation of functional human pancreatic β cells in vitro. Cell 159: 428-439. Qi, et al. 2017. Combined small-molecule inhibition accelerations the derivation of functional cortical neurons from human pluripotent stem cells. Nature Biotechnology 35(2): 154-163.

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