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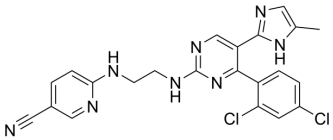
Laduviglusib (GMP)

Cat. No.:	HY-10182G
CAS No.:	252917-06-9
Molecular Formula:	$C_{22}H_{18}Cl_2N_8$
Molecular Weight:	465.34
Target:	GSK-3; Wnt; β-catenin; Autophagy
Pathway:	PI3K/Akt/mTOR; Stem Cell/Wnt; Autophagy
Storage:	-20°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



BIOLOGICAL ACTIVITY

Description	Laduviglusib (CHIR-99021) (GMP) is Laduviglusib (HY-10182) produced by using GMP guidelines. GMP small molecules works appropriately as an auxiliary reagent for cell therapy manufacture. Laduviglusib is a potent, orally active and selective GSK-3 α/β inhibitor.		
IC_{50} & Target	GSK-3β 6.7 nM (IC_{50})	GSK-3α 10 nM (IC_{50})	CDC2 8800 nM (IC_{50})
In Vitro	Laduviglusib (GMP) (20 μM, 21 days) transdifferentiates mouse fibroblasts to neurons (determined by increased number of TAUEGFP-/TUJ1-positive neuronal cells)[1]. Laduviglusib (GMP) (3-5 μM, 2 days) induces somatic cells differentiation of pluripotent stem (PS) cells (the detailed method refers to the reference)[2]. Laduviglusib (GMP) (12 μM, 5 days) converts human fibroblasts (HFF) into functional cardiomyocytes[3]. Laduviglusib (GMP) (3 μM, 4 days, hESCs) activates the canonical WNT signaling pathway, confirmed by β-catenin translocation into the nucleus[4]. Laduviglusib (GMP) (in MEFs expressing MyoD) enhances the marked increase in the number of proliferative cells led by RepSox (GMP) (HY-13012G) together with Forskolin (HY-15371)[5]. Laduviglusib (GMP) (5 μM, 1 day) can be used to generate islets (hCiPSC-islets) from human chemically induced pluripotent stem cells (hCiPSC)[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

REFERENCES

[1]. Li X, et al. Small-Molecule-Driven Direct Reprogramming of Mouse Fibroblasts into Functional Neurons. Cell Stem Cell. 2015;17(2):195-203.

[2]. Guan J et al. Chemical reprogramming of human somatic cells to pluripotent stem cells. Nature. 2022;605(7909):325-331.

[3]. Cao N, et al. Conversion of human fibroblasts into functional cardiomyocytes by small molecules. Science. 2016;352(6290):1216-1220.

[4]. Choi IY, et al. Concordant but Varied Phenotypes among Duchenne Muscular Dystrophy Patient-Specific Myoblasts Derived using a Human iPSC-Based Model. Cell Rep. 2016;15(10):2301-2312.

[5]. Bar-Nur O, et al. Direct Reprogramming of Mouse Fibroblasts into Functional Skeletal Muscle Progenitors. Stem Cell Reports. 2018 May 8;10(5):1505-1521.

[6]. Zhao J, et al. Human pluripotent stem-cell-derived islets ameliorate diabetes in non-human primates. Nat Med. 2022 Feb;28(2):272-282.

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