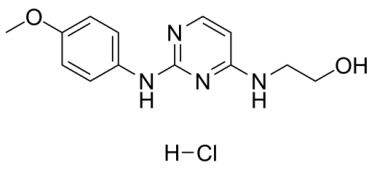
Data Sheet

Product Name:	Cardiogenol C (hydrochloride)
Cat. No.:	CS-4960
CAS No.:	1049741-55-0
Molecular Formula:	C13H17ClN4O2
Molecular Weight:	296.75
Target:	Wnt; β-catenin
Pathway:	Stem Cell/Wnt
Solubility:	DMSO : ≥ 59 mg/mL (198.82 mM); H2O : 2 mg/mL (6.74 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Cardiogenol C hydrochloride is a cell-permeable pyrimidine compound which potently induces the differentiation of ESCs into cardiomyocytes (EC50= 100 nM). IC50 value: 100 nM (EC50) Target: in vitro: Cardiogenol C hydrochloride is a cardiomyogenesis inducer in embryonic stem cells. Cardiogenol C induces the differentiation of myosin heavy chain-positive cardiomyocytes from embryonic stem cells with an EC50 value of 0.1 μM; about 90% of embryonic stem cells treated with 0.25 μM of Cardiogenol C express the cardiac muscle cell specific transcription factors GATA-4, MEF2, and Nkx2.5 and display the characteristic beating behavior of differentiated cardiomyocytes. Cardiogenol C (a diaminopyrimidine) induces cardiac differentiation in P19 and in P19Cl6 cells. [1] Cardiogenol C could activate Wnt/β-catenin signaling to induce cardiogenesis. Cardiogenol C-treatment significantly decreased HBPCs proliferation. Cardiogenol C was able to induce HBPCs to transdifferentiate into cardiomyocyte-like cells.[2]

PROTOCOL (Extracted from published papers and Only for reference)

Cell assay [1] P19 cells were cultured in DMEM supplemented with 10% FBS, 2 mM L-glutamine, 50 U/mL penicillin, and 50 μg/mL streptomycin in a 5% CO2 atmosphere at 37°C. In the present study, we used cultures of P19 cells with little variation at passage numbers in the different experiments. To induce cardiac differentiation, 106 cells were cultured in suspension in 100 mm bacteriological Petri dishes in control medium (CTRL) or supplemented with: 1% DMSO (DS); 1% DMSO plus 0.25 μM Cardiogenol C (DS+C25); or 0.25, 0.5, or 3.75 μM Cardiogenol C (C25, C50, or C375). After 4 days in suspension, the EBs were transferred to adherent culture dishes with control medium. The medium was renewed every 2 days and the differentiation rate was analyzed 6-12 days after the formation of the EBs.

References:

[1]. Jasmin, et al. Chemical induction of cardiac differentiation in p19 embryonal carcinoma stem cells. Stem Cells Dev. 2010 Mar;19(3):403-412.

[2]. Yau WW, et al. Cardiogenol C can induce Mouse Hair Bulge Progenitor Cells to Transdifferentiate into Cardiomyocyte-like Cells. Proteome Sci. 2011 Jan 19;9(1):3.

CAIndexNames:

Ethanol, 2-[[2-[(4-methoxyphenyl)amino]-4-pyrimidinyl]amino]-, hydrochloride (1:1)

SMILES:

[H]Cl.COC1=CC=C(NC2=NC=CC(NCCO)=N2)C=C1

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

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