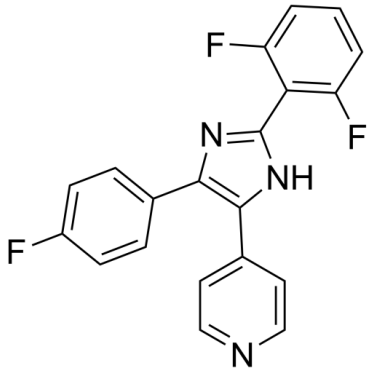
Data Sheet

Product Name:	TA-01
Cat. No.:	CS-5588
CAS No.:	1784751-18-3
Molecular Formula:	$C_{20}H_{12}F_3N_3$
Molecular Weight:	351.32
Target:	Autophagy; Casein Kinase; p38 MAPK
Pathway:	Autophagy; Cell Cycle/DNA Damage; MAPK/ERK Pathway; Stem Cell/Wnt
Solubility:	DMSO : 50 mg/mL (142.32 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

TA-01 is a potent **CK1** and **p38 MAPK** inhibitor, with **IC_{50}**s of 6.4 nM, 6.8 nM, 6.7 nM for CK1ε, CK1δ and p38 MAPK, respectively. TA-01 acts as a cardiogenic inhibitor. IC50 & Target: IC50: 6.4 nM (CK1ε), 6.8 nM (CK1δ), 6.7 nM (p38 MAPK)[1] ***In Vitro:*** TA-01 is a potent CK1 and p38 MAPK inhibitor, with IC_{50}s of 6.4 nM, 6.8 nM, 6.7 nM for CK1ε, CK1δ and p38 MAPK, respectively. TA-01 (5 μM) is not cytotoxic, completely inhibits cardiogenesis, but induces cardiogenesis at lower concentration[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: [1]**Compounds (TA-01) are dissolved in DMSO** and tested at **10 μM concentrations** against a panel of 97 kinases, which are related to stem cell differentiation and cell signaling pathways. Kinome profiling is carried out by kinase profiling service[1]. **Cell Assay:** TA-01 is dissolved in DMSO.[1]**HES-3, H7 and IPS** are harvested and seeded at **1.1 × 10^6 cells/mL** as EBs in ultra-low attachment 12-well plates in bSFS medium: DMEM supplemented with 2 mM l-glutamine, 0.182 mM sodium pyruvate, 1% non-essential amino acids, 0.1 mM β-mercaptoethanol, 5.6 mg/L transferrin, 20 μg/L sodium selenite, 0.25% (w/vol) Bovine Serum Albumin and 0.25% (w/vol) Hysoy. Cells are incubated at 37°C and 5% CO_2 to allow EB formation. The medium is refreshed after 1 day and then every 2-3 days. Cells are stimulated with the respective compounds (**TA-01**) **dissolved in DMSO (1 μL DMSO/mL of media)** starting from day 1 or day 4, until day 8. CHIR99021 is applied for the first 24 h only[1].

References:

[1]. Laco F, et al. Cardiomyocyte differentiation of pluripotent stem cells with SB203580 analogues correlates with Wnt pathway CK1 inhibition independent of p38 MAPK signaling. J Mol Cell Cardiol. 2015 Mar;80:56-70.

CAIndexNames:

Pyridine, 4-[2-(2,6-difluorophenyl)-4-(4-fluorophenyl)-1H-imidazol-5-yl]-

SMILES:

FC(C=C1)=CC=C1C2=C(C3=CC=NC=C3)NC(C4=C(F)C=CC=C4F)=N2

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

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