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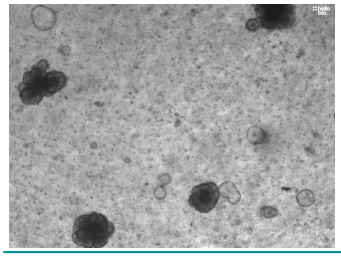
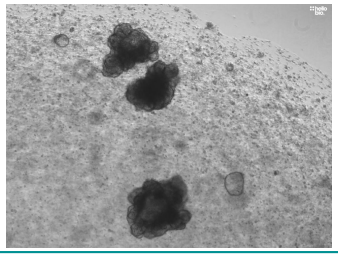
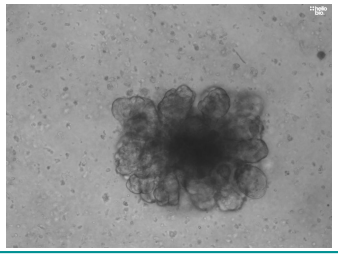
DATASHEET

A83-01

Product overview

Name	A83-01
Cat No	HB3218
Alternative names	A83
Biological action	Inhibitor
Purity	>98%
Customer comments	*Good quality and very affordable price. My lab are very happy with this product from Hello Bio, we will definitely purchase this product again.* **Verified customer, UK**
Description	Selective TGF-βRI (ALK5), ALK4 and ALK7 inhibitor. Maintains human hiPSC self renewal, 3D growth matrix component and promotes long-term organoid growth. Aids fibroblast to NSC/cardiomyocyte reprogramming.

Images

Biological Data

Biological description

A 83-01 is a selective TGF-βRI (ALK5), ALK4 and ALK7 inhibitor (IC_{50} values are 12, 45 and 7.5 nM at ALK5, ALK4 and ALK7 respectively). It is more potent than SB431542

Reprogramming

A 83-01 aids reprogramming of fibroblasts into neural stem cells and cardiomyocytes.

Differentiation

A 83-01 blocks phosphorylation of SMAD2/3 to inhibit TGF-β-induced epithelial-to-mesenchymal transition

Maintenance / self-renewal

A 83-01 helps to maintain homogeneity and long-term in vitro self-renewal of iPSCs

Organoids

3D growth matrix component and also promotes long-term organoid growth.

Application notes

Figures 1 - 3 show liver hepatocellular carcinoma tumouroids cultured with A 83-01 and forskolin

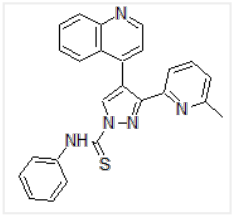
Solubility & Handling

Storage instructions	-20°C (protect from light)
Solubility overview	Soluble in DMSO (50mM)
Handling	

- This compound is light sensitive; we therefore recommend protecting the solid material and solutions from exposure to light.
- It has been reported that A 83-01 can decompose to A 77-01 in solution. We therefore recommend that you make up solutions and use immediately. Do not store solutions.
- If storage of solutions is required, you should aliquot out the solution into tightly sealed vials and store at -20°C and store these for up to one month.

Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	3-(6-Methyl-2-pyridinyl)-*N*-phenyl-4 -(4-quinolinyl)-1*H*-pyrazole-1-carbothioamide
Molecular Weight	421.52
Chemical structure	
Molecular Formula	$C_{25}H_{19}N_5S$
CAS Number	909910-43-6
PubChem identifier	16218924
SMILES	CC1=CC=CC(=N1)C2=NN(C=C2C3=CC=NC4=CC=CC=C34)C(=S)NC5=CC=CC=C5
InChi	InChI=1S/C25H19N5S/c1-17-8-7-13-23(27-17)24-21(19-14-15-26-22-12-6-5-11-20(19)22)16-30(29-24)25(31)28-18-9-3-2-4-10-18/h2-16H,1H3,(H,28,31)
InChiKey	HIJMSZGHKQPPJS-UHFFFAOYSA-N
Appearance	Pale yellow solid

References

The ALK-5 inhibitor A-83-01 inhibits Smad signaling and epithelial-to-mesenchymal transition by transforming growth factor-beta.

Tojo et al (2005) Cancer Sci 96(11)
PubMedID 16271073

Brief report: combined chemical treatment enables Oct4-induced reprogramming from mouse embryonic fibroblasts.

Yuan et al (2011) 2011 29(3)
PubMedID 21425417

Generation of rat and human induced pluripotent stem cells by combining genetic reprogramming and chemical inhibitors.

Li et al (2009) Cell Stem Cell 4(1)
PubMedID 19097958

Chemical compound-based direct reprogramming for future clinical applications.

Takeda et al (2018) Biosci Rep 38(3)
PubMedID 29739872