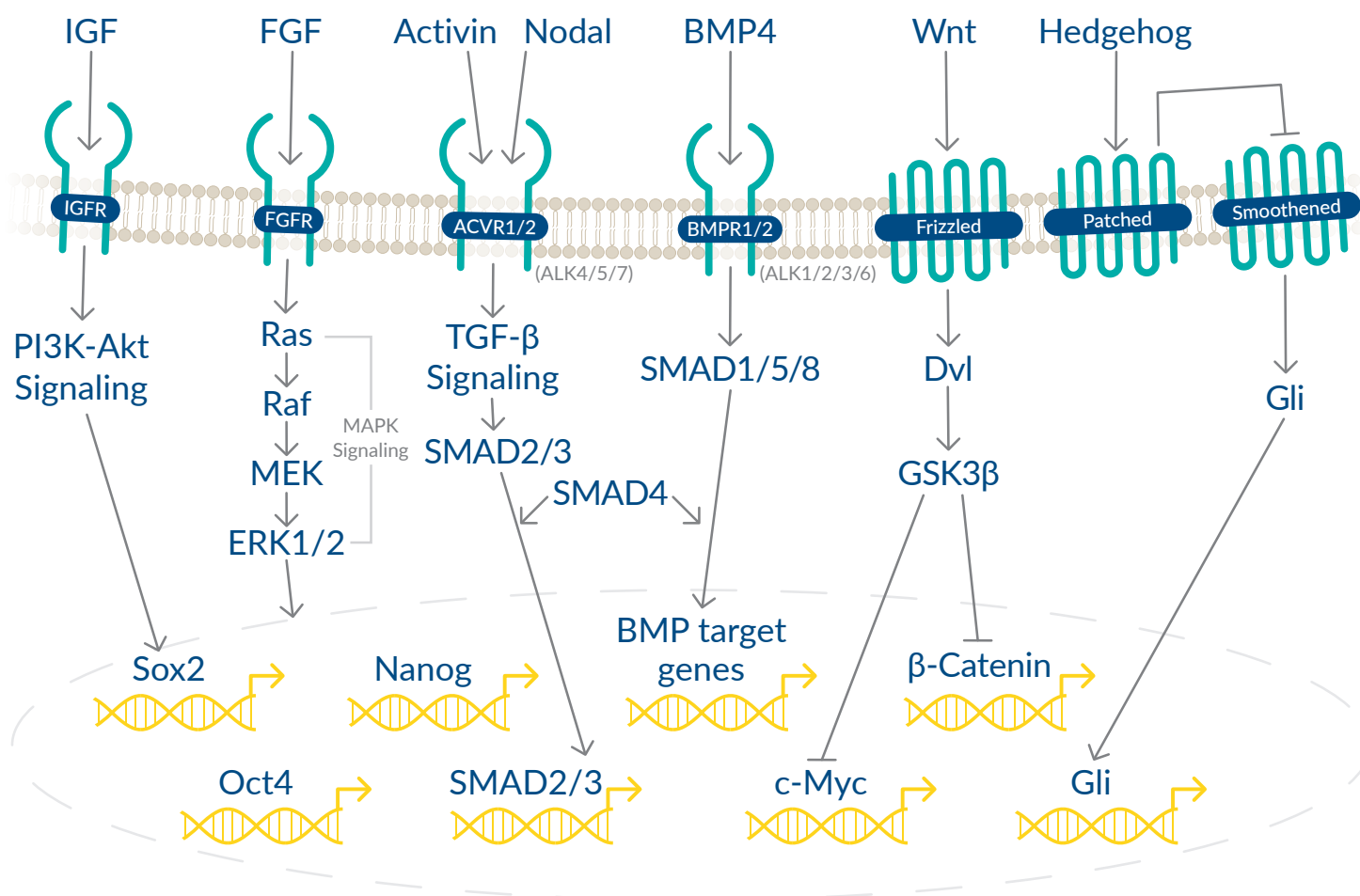


Stem Cell Research

Cayman offers small molecule inducers of stem cell differentiation, stimulators of stem cell renewal and proliferation, and reprogrammers of differentiated cells back to pluripotent cells. This product line includes activators and inhibitors of the TGF- β , Wnt, MAPK, and Hedgehog signaling pathways and modulators of the key pluripotency genes Oct4, Sox2, and Nanog.



Signaling Pathways Regulating Pluripotency of Stem Cells



Wnt/ β -Catenin Pathway

Item No.	Product Name	Summary
16733	1-Azakenpaullone	Inhibits GSK3 β (IC ₅₀ = 18 nM)
16728	AZD 2858	Inhibits GSK3 β (K _i = 4.9 nM)
13123	BIO	Reversibly inhibits GSK3 α and GSK3 β (IC ₅₀ s = 5 nM for both)
13122	CHIR99021	Selectively inhibits GSK3 α and GSK3 β (IC ₅₀ s = 10 and 6.7 nM, respectively)
20573	CP21R7	Selectively inhibits GSK3 β
16153	IQ-1	Alters signaling through Wnt/ β -catenin to maintain pluripotency
13951	IWP-2	Impairs Wnt pathway activity <i>in vitro</i> (IC ₅₀ = 27 nM)

Wnt/ β -Catenin Pathway *Continued*

Item No.	Product Name	Summary
13952	IWP-2-V2	Less potent IWP-2 derivative used to determine which structural features of IWP-2 are essential for impairing Wnt/ β -catenin pathway activity
13953	IWP-3	Impairs Wnt pathway activity <i>in vitro</i> (IC_{50} = 40 nM)
13954	IWP-4	Impairs Wnt pathway activity <i>in vitro</i> (IC_{50} = 25 nM)
22729	IWP-12	Inhibits cell-autonomous Wnt signaling (IC_{50} = 15 nM)
14315	KY 02111	Promotes the differentiation of human pluripotent stem cells by inhibiting Wnt signaling
16726	Sotrastaurin	Inhibits GSK3 α and GSK3 β (IC_{50} s = 229 and 172 nM, respectively)
15398	Stauprimide	Inhibits the nuclear localization of NME2, which results in the suppression of c-Myc, a key regulator of pluripotency
10011251	TWS119	Inhibits GSK3 β (IC_{50} = 30 nM)
13033	Valproic Acid (sodium salt)	Inhibits GSK3

Activin/Nodal/TGF- β Pathway

Item No.	Product Name	Summary
9001799	A 83-01	Inhibits ALK4/5/7 (IC_{50} s = 45, 12, and 7.5 nM, respectively) to block the phosphorylation of SMAD2/3
14794	ALK5 Inhibitor II	Induces stem cell pluripotency by replacing the reprogramming transcription factor Sox2 <i>via</i> inhibition of the TGF- β signaling pathway and induction of Nanog transcription
13816	IDE1	Induces differentiation by activating the TGF- β signaling pathway (EC_{50} = 125.5 nM <i>in vitro</i>)
13817	IDE2	Induces differentiation by activating the TGF- β signaling pathway (EC_{50} = 223 nM <i>in vitro</i>)
13031	SB-431542	Selectively inhibits ALK5 (IC_{50} = 94 nM), suppressing stem cell renewal and promoting differentiation
11793	SB-505124	Inhibits ALK5 (IC_{50} = 47 nM), suppressing downstream SMAD2/3 activation

BMP4 Pathway

Item No.	Product Name	Summary
16679	DMH1	Inhibits the kinase activity of ALK2 (IC_{50} = 13-108 nM)
11967	Dorsomorphin	Inhibits the BMP type 1 receptors ALK2, ALK3, and ALK6
16678	K02288	Prevents BMP4-induced SMAD1/5/8 pathway activation <i>in vitro</i> (IC_{50} = 100 nM) without affecting TGF- β signaling
11802	LDN-193189	Inhibits SMAD1/5/8 phosphorylation by BMP type I receptors
17698	LDN-212854	Inhibits ALK2 (IC_{50} = 1.3 nM)
17640	ML-347	Inhibits ALK1 and ALK2 (IC_{50} s = 46 and 32 nM, respectively); inhibits BMP4 signaling (IC_{50} = 152 nM)

Stem Cell Small Molecule Screening Library (96-Well)

Item No. 9001827

- Contains >140 small molecules in two 96-well plates
- Includes compounds that induce differentiation, maintain self-renewal and proliferation, or improve the reprogramming efficiency of various stem cell populations



Need a custom small molecule stem cell modulator? We can make it for you!

Email us at sales@caymanchem.com to discuss a custom synthesis project

Hedgehog Pathway

Item No.	Product Name	Summary
11321	Cyclopamine	Inhibits signaling through the hedgehog pathway at the level of Smo
16164	GSA 10	A Smo agonist that promotes differentiation
9001369	Nat-20(S)-yne	A Smo agonist with a terminal alkyne group, which can be used in click chemistry reactions
10009634	Purmorphamine	A Smo agonist that promotes differentiation
11914	SAG	A Smo agonist ($EC_{50} = 3 \text{ nM}$) that inhibits hedgehog signaling at high concentrations ($>1 \text{ } \mu\text{M}$)

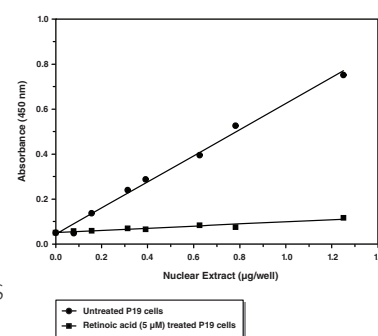
FGFR/MAPK Pathway

Item No.	Product Name	Summary
10006726	PD 98059	Prevents the activation of MAPKK1 by Raf ($IC_{50} = 2\text{-}7 \text{ } \mu\text{M}$)
13032	PD 173074	Selective inhibitor of FGFR tyrosine kinase activity, blocking autophosphorylation of FGFR1 ($IC_{50} = 21.5 \text{ nM}$)
13034	PD 0325901	Potent MEK inhibitor that suppresses phosphorylation of ERK
13067	SB 203580	Inhibitor of p38 MAPK that specifically blocks its kinase activity
10009557	SC-1	Inhibits RasGAP and ERK1 (K_d s = 98 and 212 nM, respectively), promoting self-renewal and blocking differentiation

Study Oct4 Activation in Cells

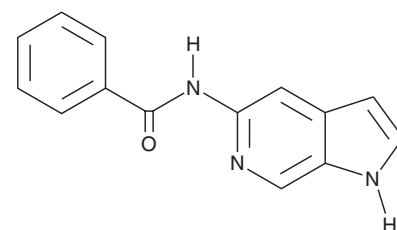
Oct4 Transcription Factor Assay Kit - Item No. 601080

- A sensitive, non-radioactive method of detecting Oct4 from whole cell lysates
- 96-well plate format
- Capture the transcription factor using a specific dsDNA sequence bound to the plate
- Detect the dsDNA-bound transcription factor with specific antibodies in an ELISA format

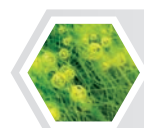


Oct4 Activating Compounds

Item No.	Product Name	Item No.	Product Name
14102	OAC1	19935	O4I1
14103	OAC2	19135	O4I2
14104	OAC3		



OAC1



To view a complete list of our stem cell research products, visit us online at www.caymanchem.com



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