

SMALL MOLECULES, BIG IMPACT

Target Key Signaling Pathways in Your Research

Small molecules are used as tools to modulate signaling pathways and understand cell biology. Whether you're looking to regulate stem cell biology or better understand the mechanism of cancers, the right small molecules can transform a research project. STEMCELL Technologies offers >200 small molecules that are being widely used in high-impact research. In this brochure, explore our range of small molecules for targeting key signaling pathways in a variety of research areas or cell types.

For a complete listing of available small molecules, as well as additional size formats, and to see how they are being used in high-impact studies, please visit www.stemcell.com/smallmolecules.

Why Use Our Small Molecules?

HIGH PURITY. >95% purity ensures low lot-to-lot variability in activity.

VARIETY. Choose from over 200 small molecules in a variety of sizes, from 1 mg to 1 g.

SIMPLE. More stable and cost-effective than growth factors.

SUPPORT. Get help when you need it, from our dedicated team of research scientists and product and scientific support staff.

Discover Small Molecules by Research Area

Research Area or Cell Type	List of Small Molecules
Pluripotent Stem Cells	www.stemcell.com/PSC-Small-Molecules
Immunology	www.stemcell.com/Immunology-Small-Molecules
Cancer	www.stemcell.com/Cancer-Small-Molecules
Autophagy	www.stemcell.com/Autophagy-Small-Molecules
Disease Modeling	www.stemcell.com/Disease-Modeling-Small-Molecules
Neuroscience	www.stemcell.com/Neuroscience-Small-Molecules
Epithelial Cells	www.stemcell.com/Epithelial-Small-Molecules
Hematopoietic Stem and Progenitor Cells	www.stemcell.com/HSPC-Small-Molecules
Mesenchymal Stem and Progenitor Cells	www.stemcell.com/MSC-Small-Molecules

Discover Small Molecules Targeting the Following Signaling Pathways

Explore specific products for each pathway in the tables below:

Activin / Nodal /TGFβ/ BMP Pathway	mTOR Pathway	PI3K/AKT Pathway
Epigenetics	NF-κB Pathway	Receptor and Protein Tyrosine Kinase Pathways
Jak/STAT Pathway	Notch Pathway	RHO/ROCK Pathway
Hedgehog Pathway	Nuclear Receptors	WNT Pathway
MAPK Pathway	P53 Pathway	Other Small Molecules

To learn more and for a complete listing, including additional size formats, visit www.stemcell.com/small-molecules.

Activin/ Nodal/ TGF β / BMP Pathway

Product	Target	Catalog #
A 83-01	Inhibits ALK4, ALK5, ALK7	72024
D4476	Inhibits CK1, ALK5, p38 MAPK	74012
DMH1	Inhibits ALK2	73634
Dorsomorphin	Inhibits ALK2, ALK3, ALK6, AMPK	72102
IDE1	Activates SMAD2	72514
IDE2	Activates SMAD2	72524
LDN193189	Inhibits ALK1, ALK2, ALK3, ALK6	72147
LY364947	Inhibits ALK5	72592
RepSox	Inhibits ALK5	73794
RepSox (Hydrochloride)	Inhibits ALK5	72392
SB431542 (Hydrate)	Inhibits ALK5, ALK4, ALK7	72234
SIS3	Inhibits SMAD3	73964

Epigenetics

Product	Target	Catalog #
(-)-Epigallocatechin Gallate	Inhibits DNA methyltransferases (DNMTs)	73644
3-Deazaneplanocin A	Inhibits histone EZH2 lysine methyltransferase	72322
5-Azacytidine	Inhibits DNMTs	72012
AGK2	Inhibits SIRT2 histone deacetylase	73054

Epigenetics (cont'd)

Product	Target	Catalog #
Anacardic Acid	Inhibits histone acetyltransferase (HAT)	73194
BIX01294	Inhibits G9a histone methyltransferase	72042
CAY10603	Inhibits histone deacetylase (HDAC) 6	73582
Chaetocin	Inhibits histone methyltransferases SU(VAR)3-9	73592
EX527	Inhibits SIRT1 histone deacetylase	73654
Garcinol	Inhibits HATs- p300 and PCAF	72452
JIB-04	Inhibits Jumonji histone demethylase	73212
O6-Benzylguanine	Inactivates O6-alkylguanine-DNA Alkyltransferase	73762
RG108	Inhibits DNMTs	72212
RSC-133	Inhibits DNMTs	73392
SAHA	Inhibits HDAC1, HDAC3	73902
Sirtinol	Inhibits Sir2p, SIRT1, SIRT2	73824
Sodium Butyrate	Inhibits histone deacetylases	72242
Splitomicin	Inhibits Sir2p	73842
Trichostatin A	Inhibits HDAC1, HDAC6	72282
Valproic Acid (Sodium Salt)	Inhibits HDAC1	72292
Zebularine	Inhibits DNMTs	72902

JAK/STAT Pathway

Product	Target	Catalog #
AG-490	Inhibits EGFR, HER2, JAK2, JAK3, STAT5a/b	72932
Ruxolitinib	Inhibits JAK1, JAK2	73402
TG101348	Inhibits JAK2, JAK3, FLT3, RET	73472
WHI-P131	Inhibits JAK3, VEGFR, EGFR	73542
WHI-P154	Inhibits JAK3, VEGFR, EGFR	73552
STAT5 Inhibitor	Inhibits STAT5	73852
JAK Inhibitor I	Inhibits JAK1, JAK2, JAK3	74024

Hedgehog Pathway

Product	Target	Catalog #
Cyclopamine	Inhibits Smoothened (SMO)	72072
Purmorphamine	Activates SMO	72202
GSA 10	Activates SMO	73174
SAG	Activates SMO	73414
SANT-1	Inhibits SMO	100-0538
GANT61	Inhibits GLI	73692
GANT 58	Inhibits GLI1	73984
HPI-1	Inhibits Hedgehog pathway	72492
SANT-1	Inhibits SMO	100-0539

MAPK Pathway

Product	Target	Catalog #
AZ628	Inhibits RAF, VEGFR2, DDR2, LYN, FLT1, FMS	72982
AZD6244	Inhibits MEK1, MEK2	72992
BI-D1870	Inhibits RSK	72714
BIRB-796	Inhibits p38 MAP kinase (MAPK)	72682
D4476	Inhibits CK1, ALK5, p38 MAPK	74012
Dabrafenib	Inhibits v600 mutant B-RAF	73072
LY2228820	Inhibits p38 MAPK	74164
PD0325901	Inhibits MEK	72182
PD98059	Inhibits MEK1, MEK2	72172
Pluripotin	Inhibits RasGAP, ERK1	72812
PLX4032	Inhibits B-RAF	73334
Refametinib	Inhibits MEK1, MEK2	73374
Reversine	Inhibits MEK1, Aurora kinase inhibitor, non-muscle myosin II	72612
SB202190	Inhibits p38 MAPK	72632
SB203580	Inhibits p38 MAPK	72222
SP600125	Inhibits JNK1, JNK2, JNK3	72642
U-0126	Inhibits MEK1, MEK2	73522

mTOR Pathway

Product	Target	Catalog #
A769662	Activates AMPK	72922
AICAR	Activates AMPK	72704
AZD8055	Inhibits mTOR	73002
Everolimus	Inhibits mTOR, FKBP-12	73122
FK-866	Inhibits nicotinamide phosphoribosyltransferase	100-0264
GSK621	Agonist of AMPK	100-0266
Ku-0063794	Inhibits mTORC1, mTORC2	73232
Oleuropein	Antagonist of PPAR γ	100-0258
Metformin	Activates AMPK	73252
Quercetin	Inhibits PI3K, SRC kinases	73932
Rapamycin	Inhibits FKBP-12	73362
SBI-0206965	Inhibits ULK1, ULK2 kinases	100-0270
Torin 1	Inhibits mTORC1, mTORC2	73492
Torin 2	Inhibits mTOR	100-0260

NF- κ B Pathway

Product	Target	Catalog #
Butein	Stabilizes I κ B	73464
CAY10512	Inhibits NF- κ B	73022
Genistein	Inhibits tyrosine kinase and topoisomerase II, activates PPAR γ	72004
Indomethacin	Inhibits COX-1, COX-2	73942
QNZ	Inhibits NF- κ B	73352
Quercetin	Inhibits PI3K, SRC kinases	73932
(S)-MG132	Activates I κ B	73264
Troglitazone	Activates PPAR γ	73892

Notch Pathway

Product	Target	Catalog #
Compound E	Inhibits Notch receptor, amyloid precursor protein	73954
DAPT	Inhibits γ -secretase	72082
DBZ	Inhibits γ -secretase	73092
LY411575	Inhibits γ -secretase	72794

Nuclear Receptors

Product	Target	Catalog #
4-Octyl Itaconate	Activates retinoic acid receptor (RAR), retinoid X receptor	74192
9-cis Retinoic Acid	Activates RAR, retinoid X receptor	72382
All-Trans Retinoic Acid	Activates RAR	72262
AM580	Inhibits RAR α	72964
BMS 493	Activates pan-retinoic acid receptor	73974
Calcitriol	Activates Vitamin D receptor	72412
CD437	Activates RAR	72722
Dexamethasone	Activates glucocorticoid receptor	72092
EC23	Activates RAR	73102
Raloxifene	Modulates selective estrogen receptor	72854
Rosiglitazone	Activates PPAR γ	72622
Stauprimide	Inhibits NME2 localization	72652
Tamoxifen	Modulates selective estrogen receptor, estrogen-related receptor	72662
TTNPB	Activates RAR	72892

p53 Pathway

Product	Target	Catalog #
Cyclic Pifithrin-a	Inhibits p53	72062
Doxorubicin	Inhibits DNA topoisomerase II	100-0559
Pifithrin-mu	Inhibits p53	72804
(±)-Nutlin-3	Inhibits MDM2	73754

PI3K/AKT Pathway

Product	Target	Catalog #
3-Methyladenine	Inhibits the PI3K/AKT pathway	74222
1-Oleoyl Lysophosphatidic Acid	Agonist of lysophosphatidic acid (LPA)1, LPA2	72694
AKT Inhibitor VIII	Inhibits AKT	72942
AKT Inhibitor X	Inhibits AKT	72952
Cl-Amidine	Inhibits protein-arginine deiminase (PAD)	100-0518
GDC-0941	Inhibits Class I PI3Ks	73152
(±)-Flurbiprofen	Inhibits COX-1, COX-2	73924
KU0060648	Inhibits DNA-dependent protein kinase	74062
LY294002	Inhibits PI3K	72152
Pluripotin	Inhibits RasGAP, ERK1	72812
Quercetin	Inhibits PI3K, SRC kinases	73932
Torin 2	Inhibits mTOR	100-0260
Vps34-IN1	Inhibits Vps34	100-0255
Wortmannin	Inhibits PI3K, PLKs	73562

Receptor and Protein Tyrosine Kinase Pathways

Product	Target	Catalog #
AG-490	Inhibits EGFR, HER2, JAK2, JAK3, STAT5a/b	72932
Dasatinib	Inhibits ABL, SRC, LCK, YES	73082
Gefitinib	Inhibits EGFR	73162
Genistein	Inhibits tyrosine kinase and topoisomerase II, activates PPAR γ	72002
Gö6983	Inhibits protein kinase C (PKC)	72462
GW2580	Inhibits CSF-1 Phosphorylation	72472
HA-100	Inhibits PKA, PKC, PKG	72482
Imatinib	Inhibits ABL, PDGFR, KIT	72532
(-)-Indolactam V	Activates PKC	72314
Lapatinib	Inhibits EGFR, HER2	73242
Nilotinib	Inhibits BCR/ABL, ABL	73302
PD173074	Inhibits FGFR	72164
Phorbol 12-myristate 13-acetate	Activates PKC	74044
PP1	Inhibits LCK, FYN, HCK, SRC	73112
Pyrintegrin	Activates Integrin, FGFR, IGFR, HER2	72844
Quercetin	Inhibits PI3K, SRC kinases	73934
R428	Inhibits receptor tyrosine kinase Axl	100-0566
SU11274	Inhibits MET	73432
SU5402	Inhibits VEGFR2, FGFR1, PDGFRB	73914
SU5416	Inhibits VEGFR2, PDGFR, c-KIT, RET, FLT-3, ABL, ALK	73442
Tivantinib	Inhibits MET	73484
Vandetanib	Inhibits VEGFR1, KDR, FLT-4, EGFR, FGFR, ABL, RET, SRC	73532

RHO/ROCK Pathway

Product	Target	Catalog #
1-Oleoyl Lysophosphatidic Acid	Agonist of LPA1, LPA2	72694
Fasudil	Inhibits ROCK2	73662
GSK429286A	Inhibits ROCK1, ROCK2	73182
Rho Kinase Inhibitor IV	Inhibits ROCK2	73804
Thiazovivin	Inhibits ROCK	72252
Y-27632 (Dihydrochloride)	Inhibits ROCK1, ROCK2	72302

WNT Pathway

Product	Target	Catalog #
BIO	Inhibits GSK3	72032
BIO-Acetoxime	Inhibits GSK3	73322
CHIR98014	Inhibits GSK3	73042
CHIR99021	Inhibits GSK3 α , GSK3 β	72052
IQ-1	Inhibits protein phosphatase PP2A	72774
IWP-2	Inhibits Porcupine	72122
IWP-3	Inhibits Porcupine	72544
IWP-4	Inhibits Porcupine	72552
IWR-1-endo	Stabilizes AXIN2	72562
Kenpaullone	Inhibits GSK3 β	72782
KY02111	Inhibits WNT pathway	72582
SB216763	Inhibits GSK3 α , GSK3 β	72872
Trolox	Vitamin E analog	100-0572
TWS119	Inhibits GSK3 β	73512
XAV939	Inhibits TNKS1, TNKS2	72672

Other Small Molecules

Product	Target	Catalog #
(+)-Bay K8644	Blocks L-type calcium channels	72362
(-)-Blebbistatin	Inhibits non-muscle myosin II ATPase	72402
Bleomycin	Antibiotic with antitumor properties	100-0550
8-Bromo-cAMP	Activates cAMP-dependent kinase	73602
Brefeldin A	Inhibits Sec7-containing guanine-exchange factor	73012
Camostat	Inhibits transmembrane serine protease	100-0552
CAY10585	Inhibits hypoxia-inducible factor-1 α	72432
CFTR(inh)-172	Inhibits cystic fibrosis transmembrane conductance regulator (CFTR)	100-0554
CH223191	Agonist of aryl hydrocarbon receptor (AHR)	72732
Cl-Amidine	Inhibits PAD	100-0518
Cytochalasin D	Inhibits actin polymerization	100-0556
Dibutyl-cAMP	Activates cAMP-dependent protein kinases	73884
16,16-Dimethyl Prostaglandin E2	Inhibits 15-hydroxy PGDH	72372
Doxorubicin	Inhibits DNA topoisomerase II	100-0558
Doxycycline (Hyclate)	Tetracyclin-like antibiotic	72742
EHNA	Inhibits adenosine deaminase, PDE2	72442
Eltrombopag	Agonist of thrombopoietin receptor	100-0251
Erastin	Inhibits cystine transporter, induces ferroptosis	100-0544
Fluprostenol	Activates prostaglandin F2 α receptor	73674
Forskolin	Activates adenylyl cyclase	100-0249
G418	Antibiotic for selecting transfected mammalian cells	03812
Gatifloxacin	Inhibits bacterial DNA gyrase, topoisomerase IV	72752
GlyH-101	Inhibits CFTR	100-0530
ID-8	Inhibits DYRK pathway	72502
IBMX	Inhibits cyclic nucleotide phosphodiesterases	72762

Other Small Molecules (cont'd)

Product	Target	Catalog #
Ionomycin	Calcium ionophore	73724
ISCK03	Inhibits c-KIT	73734
Latrunculin A	Inhibits actin polymerization	100-0562
Ascorbic Acid	Antioxidant, reducing agent	72132
L-Buthionine-(S,R)-sulfoximine	Inhibits γ -glutamylcysteine synthetase	100-0560
Mifepristone	Antagonist of progesterone, glucocorticoid receptor	100-0564
Mitomycin C	Alkylating agent	73274
MK0457	Inhibits aurora kinase A	73282
2-NBDG	Fluorescent glucose analog	100-0546
Nicotinamide	Supplement for differentiation of ES and iPS cells	07154
(2R)-Octyl- α -hydroxyglutarate	Inhibits α -ketoglutarate-dependent dioxygenases	100-0514
Paclitaxel	Inhibits microtubule formation	73312
Prostaglandin E2	Activates prostaglandin receptors EP1, EP2, EP3, EP4	72194
PluriSIn-1	Inhibits stearyl-CoA desaturase	72822
Puromycin	Inhibits protein synthesis	73342
Purvalanol A	Inhibits cyclin-dependent kinases (CDKs)	73774
R848	Agonist of TLR7, TLR8	73782
Resveratrol	Inhibits COX-1	72862
Rolipram	Inhibits type 4 cyclic nucleotide phosphodiesterases	73382
Sinomenine	Anti-inflammatory	72882
StemRegenin 1	Antagonist of AHR	72342
Stem Regenin 1 (Hydrochloride)	Antagonist of AHR	72352
(S)-MG132	Inhibits ubiquitin-proteasome, NF- κ B pathway; Activates I κ B	73262
STO-609	Inhibits calcium/calmodulin-dependent kinase kinases	73862
SU9516	Inhibits CDK1, CDK2	73452
Thapsigargin	Inhibits sarco-endoplasmic reticulum Ca ²⁺ -ATPases	100-0569

Other Small Molecules (cont'd)

Product	Target	Catalog #
3,3',5-Triiodo-L-thyronine (Sodium Salt Hydrate)	Agonist of TR α , TR β	100-0548
Trolox	Vitamin E analog	100-0572
Tunicamycin	Inhibits N-acetylglucosamine phosphotransferase	100-0570
UM729	Enhances HSC self-renewal in vitro	72332
Uridine	Nucleoside for RNA synthesis	100-0540
XL413	Inhibits cell division cycle 7 kinase	100-0542
(Z)-4-Hydroxytamoxifen	Modulates selective estrogen receptor, estrogen-related receptor	74054
Zoledronic acid	Inhibits farnesyl diphosphate synthase	73572
Z-VAD-FMK	Inhibits caspases	100-0534

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