

Small Molecules

For Cancer Research

Small Molecules, Big Impact

Small molecules are increasingly being used as tools to understand mechanisms of cancer. Whether the aim is to identify signaling nodes essential for tumorigenic phenotypes, or to test combinatorial small molecule strategies in vitro, small molecules can transform a research project. Target key pathways in cancer biology with small molecules from STEMCELL Technologies that are widely used in high impact research. For a complete listing of the small molecules available, please visit www.stemcell.com/smallmolecules.

Why Use Small Molecules?

- Can be cell permeable and affect signaling pathways within the cell
- More stable and cost effective than growth factors
- Chemically defined: High purity and low lot-to-lot variability in activity
- Finely tune effects by varying concentration

Product Listing:

PRODUCT NAME	TARGET(S)	APPLICATIONS	CATALOG #
Activin / Nodal / TGFβ / BMP Pathway			
Dorsomorphin	Inhibits ALK2, ALK3, ALK6	Inhibits cell proliferation, survival, migration	72102
LDN193189	Inhibits ALK2, ALK3, ALK6	Inhibits cell proliferation, survival	72142
LY364947	Inhibits ALK5	Inhibits cell migration, invasion	72592
SB431542	Inhibits ALK5, ALK4, ALK7	Inhibits cell proliferation, migration, invasion	72232
Epigenetics			
3-Deazaneplanocin A	Inhibits EZH2 Lysine Methyltransferase	Inhibits cell proliferation, survival, migration	72322
5-Azacytidine	Inhibits DNA Methyltransferase	Inhibits cell proliferation, survival	72012
BIX 01294	Inhibits G9a Histone Methyltransferase	Inhibits cell proliferation, survival, migration, invasion	72042
Garcinol	Inhibits HATs- p300 and PCAFI	Inhibits cell proliferation, survival	72452
JIB-04 <i>(Coming Soon!)</i>	Inhibits Jumonji Histone Demethylase	Inhibits cell proliferation, survival	73212
RG108	Inhibits DNA Methyltransferase (DNMT1)	Inhibits cell proliferation, survival, invasion; Demethylates and activates epigenetically-silenced tumor suppressor genes	72212
Sodium Butyrate	Inhibits Histone Deacetylase (HDAC1)	Inhibits cell proliferation, survival	72242
Tranylcypromine	Inhibits Lysine-Specific Demethylase 1 (LSD1)	Inhibits cell proliferation, survival, migration, invasion	72272
Trichostatin A	Inhibits Histone Deacetylase (HDAC1)	Inhibits cell proliferation, survival, migration, invasion	72282
Valproic Acid	Inhibits Histone Deacetylase (HDAC1)	Inhibits cell proliferation, survival	72292
Zebularine	Inhibits DNA Methyltransferase	Inhibits cell proliferation, survival	72902
JAK / STAT Pathway			
AG-490 <i>(Coming Soon!)</i>	Inhibits JAK2	Inhibits cell proliferation, survival, migration, invasion	72932
Ruxolitinib <i>(Coming Soon!)</i>	Inhibits JAK1, JAK2	Inhibits cell proliferation, survival	73402
TG101348 <i>(Coming Soon!)</i>	Inhibits JAK2, FLT3, RET	Inhibits cell proliferation, survival	73472
WHI-P131 <i>(Coming Soon!)</i>	Inhibits JAK3, VEGFR, EGFR	Inhibits cell proliferation, survival, migration	73542
WHI-P154 <i>(Coming Soon!)</i>	Inhibits JAK3, VEGFR, EGFR	Inhibits cell proliferation, survival, migration	73552
Hedgehog Pathway			
Cyclopamine	Inhibits Smoothened	Inhibits cell migration, invasion	72072
Purmorphamine	Activates Smoothened	Increases cell migration, invasion	72202



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713 • INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

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Product Listing (continued):

MAPK Pathway			
AZ628 <i>(Coming Soon!)</i>	Inhibits RAF, VEGFR2, DDR2, Lyn, Flt1, FMS	Inhibits cell proliferation, survival	72982
AZD6244 <i>(Coming Soon!)</i>	Inhibits MEK1, MEK2	Inhibits cell proliferation, survival	72992
BI-D1870	Inhibits RSK	Inhibits cell proliferation, survival	72712
BIRB-796	Inhibits p38 MAPK	Enhances effects by chemotherapeutics on cell growth or cell death	72682
Dabrafenib <i>(Coming Soon!)</i>	Inhibits Mutant BRAF	Inhibits cell proliferation, survival	73072
Fluoxetine <i>(Coming Soon!)</i>	Inhibits Serotonin Transporter	Inhibits cell proliferation, survival	73142
PD0325901	Inhibits MEK1, MEK2	Inhibits cell proliferation, survival, invasion	72182
PD98059	Inhibits MEK1, MEK2	Inhibits cell proliferation, survival, migration, invasion	72172
Pluripotin	Inhibits RasGAP1 and ERK	Increases tumor formation and expression of cancer stem cell surface markers	72812
PLX4032 <i>(Coming Soon!)</i>	Inhibits Mutant BRAF	Inhibits cell proliferation, survival	73332
Refametinib <i>(Coming Soon!)</i>	Inhibits MEK1, MEK2	Inhibits cell proliferation	73372
Reversine	Inhibits MEK1	Inhibits cell proliferation, survival	72612
SB202190	Inhibits p38 MAPK	Modulates cell proliferation, survival	72632
SB203580	Inhibits p38 MAPK	Modulates cell proliferation, survival	72222
SP600125	Inhibits JNK	Inhibits cell proliferation, survival	72642
Trametinib <i>(Coming Soon!)</i>	Inhibits MEK1, MEK2	Inhibits cell proliferation, survival	73502
U0126 <i>(Coming Soon!)</i>	Inhibits MEK1, MEK2	Inhibits cell proliferation, survival, migration, invasion	73522
mTOR Pathway			
A769662 <i>(Coming Soon!)</i>	Activates AMPK	Modulates cell survival	72922
AICAR	Activates AMPK	Modulates cell proliferation, survival, migration, invasion	72702
AZD8055 <i>(Coming Soon!)</i>	Inhibits mTOR	Inhibits cell proliferation	73002
Everolimus <i>(Coming Soon!)</i>	Inhibits mTOR	Inhibits cell proliferation, survival, migration, invasion	73122
Ku-0063794 <i>(Coming Soon!)</i>	Inhibits mTOR	Inhibits cell proliferation	73232
Metformin <i>(Coming Soon!)</i>	Activates AMPK	Inhibits cell proliferation, survival, migration, invasion	73252
Rapamycin <i>(Coming Soon!)</i>	Inhibits FKBP12	Inhibits cell proliferation, survival, migration, invasion	73362
Torin 1 <i>(Coming Soon!)</i>	Inhibits mTOR	Inhibits cell proliferation, survival, migration, invasion	73492
NF-κB Pathway			
CAY10512 <i>(Coming Soon!)</i>	Inhibits NF-κB		73022
QNZ <i>(Coming Soon!)</i>	Inhibits NF-κB		73352
Notch Pathway			
DAPT	Inhibits γ-Secretase	Inhibits cell proliferation, survival, migration	72082
DBZ <i>(Coming Soon!)</i>	Inhibits γ-Secretase	Inhibits cell proliferation, survival	73092
Nuclear Receptors			
9-cis Retinoic Acid	Activates RAR and RXR	Inhibits cell proliferation	72382
All-Trans Retinoic Acid	Activates RAR	Inhibits cell proliferation, migration, invasion	72262
AM580 <i>(Coming Soon!)</i>	Inhibits RARα	Inhibits cell proliferation, survival	72962
Calcitriol	Activates Calcitriol / Vitamin D Receptor	Inhibits cell proliferation	72412
CD437	Activates RAR	Inhibits cell survival	72722
Dexamethasone	Activates Glucocorticoid Receptor	Modulates cell survival	72092
EC23 <i>(Coming Soon!)</i>	Activates RAR		73102

Small Molecules for Cancer Research

Raloxifene	Selective Estrogen Receptor Modulator (SERM)	Inhibits cell proliferation, survival, migration, invasion	72852
Rosiglitazone	PPAR γ Agonist	Inhibits cell proliferation	72622
Tamoxifen	Selective Estrogen Receptor Modulator (SERM)	Inhibits cell proliferation, survival, migration, invasion	72662
TTNPB	Retinoic Acid Receptor (RAR) Agonist	Inhibits cell proliferation, survival	72892
p53 Pathway			
Cyclic Pifithrin- α	Inhibits p53	Inhibits cell proliferation	72062
Pifithrin- μ	Inhibits p53	Inhibits cell proliferation, survival	72802
PI3K / AKT Pathway			
1-Oleoyl Lysophosphatidic Acid	GPCRs	Promotes cell proliferation, invasion, metastases	72692
Akt Inhibitor VIII <i>(Coming Soon!)</i>	Inhibits AKT	Inhibits cell survival	72942
Akt Inhibitor X <i>(Coming Soon!)</i>	Inhibits AKT	Inhibits cell survival	72952
Fluoxetine <i>(Coming Soon!)</i>	Inhibits Serotonin Transporter	Inhibits cell proliferation, survival	73142
GDC-0941 <i>(Coming Soon!)</i>	Inhibits PI3K	Inhibits cell proliferation, survival, migration	73152
KP372-1 <i>(Coming Soon!)</i>	Inhibits AKT	Inhibits cell proliferation, survival	73222
LY294002	Inhibits PI3K	Inhibits cell survival	72152
Pluripotin	Inhibits RasGAP1 and ERK	Increases tumor formation and expression of cancer stem cell surface markers	72812
Wortmannin <i>(Coming Soon!)</i>	Inhibits PI3K	Inhibits cell proliferation, survival, migration, invasion	73562
Receptor and Protein Tyrosine Kinase Pathways			
Crizotinib <i>(Coming Soon!)</i>	Inhibits Met	Inhibits cell proliferation, survival, migration, invasion	73062
Dasatinib <i>(Coming Soon!)</i>	Inhibits Src Family Kinases, c-ABL	Inhibits cell proliferation, survival, migration, invasion	73082
FAK Inhibitor 14 <i>(Coming Soon!)</i>	Inhibits FAK	Inhibits cell proliferation, survival, migration, invasion	73132
Gefitinib <i>(Coming Soon!)</i>	Inhibits EGFR	Inhibits cell proliferation, survival, migration, invasion	73162
GW2580	Inhibits CSF-1 Phosphorylation	Inhibits recruitment of tumor associated macrophages or tumor infiltrating myeloid cells	72472
Imatinib	Inhibits c-ABL, PDGFR, c-KIT	Inhibits cell proliferation, survival, migration, invasion	72532
Lapatinib <i>(Coming Soon!)</i>	Inhibits EGFR, HER2	Inhibits cell proliferation, survival, migration, invasion	73242
Nilotinib <i>(Coming Soon!)</i>	Inhibits c-ABL	Inhibits cell proliferation, survival	73302
PD173074	Inhibits FGFR1	Inhibits cell proliferation, survival	72162
PP1 <i>(Coming Soon!)</i>	Inhibits Src Family Kinases	Inhibits cell proliferation, survival, migration, invasion	73112
SU11274 <i>(Coming Soon!)</i>	Inhibits Met	Inhibits cell proliferation, survival, migration, invasion	73432
SU5416 <i>(Coming Soon!)</i>	Inhibits VEGFR2, PDGFR, c-KIT, RET, Flt-3, c-ABL, ALK	Inhibits cell proliferation, survival	73442
Tivantinib <i>(Coming Soon!)</i>	Inhibits Met	Inhibits cell proliferation, survival, migration, invasion	73482
Vandetanib <i>(Coming Soon!)</i>	Inhibits VEGFR, EGFR, c-ABL, RET, Src	Inhibits cell proliferation, survival, migration, invasion; Inhibits angiogenesis	73532
RHO / ROCK Pathway			
1-Oleoyl Lysophosphatidic Acid	GPCRs	Promotes cell proliferation, invasion, metastases	72692
GSK429286A <i>(Coming Soon!)</i>	Inhibits ROCK		73182
Thiazovivin	Inhibits ROCK		72252
Y-27632	Inhibits ROCK	Modulates cell migration, invasion	72302
WNT Pathway			
BIO	Inhibits GSK3	Inhibits cell proliferation, migration, invasion, survival	72032
CHIR98014 <i>(Coming Soon!)</i>	Inhibits GSK3	Promotes cell survival	73042
CHIR99021	Inhibits GSK3	Inhibits cell proliferation, survival	72052

Product Listing (continued):

IWP-2	Inhibits Porcupine	Inhibits cell proliferation, migration, invasion	72122
IWP-3	Inhibits Porcupine		72542
IWP-4	Inhibits Porcupine		72552
IWR-1-endo	Stabilizes AXIN2	Inhibits cell proliferation	72562
SB216763	Inhibits GSK3	Modulates cell proliferation, survival	72874
TWS119 <i>(Coming Soon!)</i>	Inhibits GSK3	Inhibits cell proliferation, survival	73512
XAV939	Inhibits TNKS1, TNKS2	Inhibits cell proliferation, survival, migration, invasion	72672
Other Small Molecules			
(-)-Blebbistatin	Inhibits Non-Muscle Myosin II ATPase	Inhibits cell migration, invasion	72402
(+)-Bay K8644	L-type Calcium Channel Blocker	Inhibits cell proliferation, survival	72362
(S)-MG132 <i>(Coming Soon!)</i>	Inhibits Proteasome	Inhibits cell proliferation, survival	73262
16,16-Dimethyl Prostaglandin E2	PGE2 Analog	Promotes cell survival	72372
Brefeldin A <i>(Coming Soon!)</i>	Inhibits Sec7-Containing GEFs	Inhibits cell survival, migration	73012
CH223191	Aryl Hydrocarbon Receptor (AhR) Antagonist	Inhibits cell growth	72732
Doxycycline	Tetracyclin-Like Antibiotic	Used to regulate inducible gene expression in cell lines or animal models	72742
EHNA	Inhibits Adenosine Deaminase and PDE2	Inhibits cell proliferation, migration, invasion	72442
Forskolin	Activates Adenylyl Cyclase	Inhibits cell proliferation, survival	72112
Gatifloxacin	Inhibits Bacterial DNA Gyrase	Inhibits cell proliferation	72752
L-Ascorbic Acid	Antioxidant, Reducing Agent	Modulates cell proliferation	72132
Mitomycin C <i>(Coming Soon!)</i>	Alkylating Agent	Inhibits cell proliferation, survival	73272
MK0457 <i>(Coming Soon!)</i>	Inhibits Aurora Kinase	Inhibits cell proliferation, survival	73282
Paclitaxel <i>(Coming Soon!)</i>	Binds Tubulin	Inhibits cell proliferation, survival	73312
PluriSIn-1	Inhibits Stearoyl-CoA Desaturase (SCD1)	Inhibits cell proliferation; Inhibits survival of undifferentiated cancer cells	72822
Puromycin <i>(Coming Soon!)</i>	Aminonucleoside Antibiotic	Inhibits cell survival	73342
Resveratrol	Inhibits COX-1	Inhibits cell proliferation, survival	72862
Rolipram <i>(Coming Soon!)</i>	Inhibits PDE4	Inhibits cell proliferation, survival	73382
Sinomenine	Anti-Inflammatory	Inhibits cell proliferation, survival	72882
StemRegenin 1	Aryl Hydrocarbon Receptor (AhR) Antagonist	Promotes survival and maintenance of leukemic stem cells when used with UM729	72342
Stem Regenin 1 (Hydrochloride)	Aryl Hydrocarbon Receptor (AhR) Antagonist	Promotes survival and maintenance of leukemic stem cells when used with UM729	72342
SU9516 <i>(Coming Soon!)</i>	Inhibits CDKs	Inhibits cell proliferation, survival	73452
UM729 - Exclusive	Pyrimido-Indole Derivative	Promotes survival and maintenance of leukemic stem cells when used with AhR antagonist SR1	72332
Zoledronic acid <i>(Coming Soon!)</i>	Inhibits Prenylation of GTPases	Inhibits cell proliferation, survival, migration, invasion; Inhibits angiogenesis	73572