



Contact\_Inhibition

Can\_Stretch

CIP

Nonmigrating

Slow\_Migrating

Fast\_Migrating

Migration\_SW

Epithelial

Hybrid\_EM

Mesenchymal

EMT

Before\_RP

Post\_RP

Restriction\_SW

G0\_G1

G2

SAC

Phase\_SW

Quiescence

CellCycle

Cell\_Cycle\_Process

Survival

Apoptosis

Apoptotic\_SW

Neighbors

CellDensity\_High  
CellDensity\_Low

Matrix

COL1\_3  
Elastin  
Laminin\_5a  
Collagen\_4  
Basement\_Membrane  
Fibronectin  
MMP2  
MMP7  
MMP9  
ECM  
Stiff\_ECM

Transforming\_env

TGFb\_ext  
SHH\_ext  
Self\_Loop

TGF\_beta - TGF\_sig

TGF\_bRII  
TGF\_bRI  
SMAD2\_3\_4  
ILK\_Rictor  
HMGGA2  
p15  
DUSP4  
Runx1

Hedgehog - SHH\_ON

SHH\_secr  
PTCH1  
SMO  
SUFU  
GLI\_H  
GLI\_H  
GLI3R  
HHIP  
CEBP\_alpha

GrowthFactor\_Env

GF  
GF\_High

GF\_Basal\_MAPK

RTK  
Shc  
Grb2  
SOS  
Ras  
RAF  
MEK  
ERK  
MCRIP1  
mTORC2  
PI3K  
PIP3  
PDK1  
AKT\_B

GF\_PI3K

p110\_H  
PI3K\_H  
AKT\_H  
FoxO3  
PLCgamma  
IP3  
Ca2p  
Nedd4L

GF\_mTOR

TSC2  
PRAS40  
DAG  
Rheb  
mTORC1  
S6k  
h\_4EBP1  
eIF4E

GF\_connect

GSK3  
FoxO1  
p21\_mRNA  
IKKa  
NfYb  
c\_Myb

Adhesion

Integrin  
ILK  
FAK  
Src  
Nectin3  
Nect5  
SPRY2  
J\_Ecadherin  
J\_bcatenin  
J\_acatenin

CIP - Can\_Stretch

FocalAdhesions  
Stress\_Fibers  
YAP  
TRIO  
WT1  
TAZ  
Ecadherin\_mRNA\_H  
ApicalBasal\_Pol  
N\_bcatenin  
Mst1\_2  
Lats1\_2  
AMOT  
miR\_29c  
PTEN\_c

Migration\_SW - Fast\_Migrating

Merlin  
IQGAP1\_LeadingE  
Rassf1a  
RhoA  
Horizontal\_Pol  
Rac1  
Rac1\_H  
PAK1  
Migration  
Fast\_Migration

EMT - Mesenchymal

SNAI1  
LEF1  
Twist  
SNAI2  
ZEB1  
N\_bcatenin\_H  
ZEB1\_H  
b\_catenin\_TCF4  
ZEB2  
HMGGA1  
TGFb\_secr  
miR\_34  
miR\_200\_b  
miR\_200\_c  
Ecadherin\_mRNA

Restriction\_SW - Before\_RP

p21  
pRB  
p27Kip1  
Myc  
CyclinD1  
E2F1  
CyclinE

Origin\_Licensing

ORC  
Cdc6  
Cdr1  
Pre\_RC  
geminin

Phase\_SW - G0\_G1

CyclinA\_mRNA  
Emi1  
FoxM1  
Cdc25A  
CyclinA  
Wee1  
UbcH10  
CyclinB  
Cdc25B  
Plk1  
Cdc25C  
Cdk1  
pAPC  
Cdc20  
Cdh1

Cell\_Cycle\_Process - Quiescence

Replication  
ATR  
CHK1  
f4N\_DNA  
U\_Kinetochores  
Mad2  
A\_Kinetochores  
Plk1\_H  
Ect2  
Cytokinesis

TRAIL

Trail

Apoptotic\_SW - Survival

DR4\_5  
Casp8  
Casp2  
MCL1  
BCLXL  
BCL2  
BAD  
Bik  
Bim  
Bid  
Bak  
Bax  
Cyto\_C  
SMAC  
IAPs  
Casp9  
Casp3

DNA\_Fragmentation

CAD

Time