



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
IKKalpha
NfYb
c_Myb

Adhesion

Integrin
ILK
FAK
Src
Nectin3
Ncd5
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
Bax
Bax
Cyto_C
SMAC
IAPs
Casp9
Casp3

DNA_Fragmentation

CAD

Time