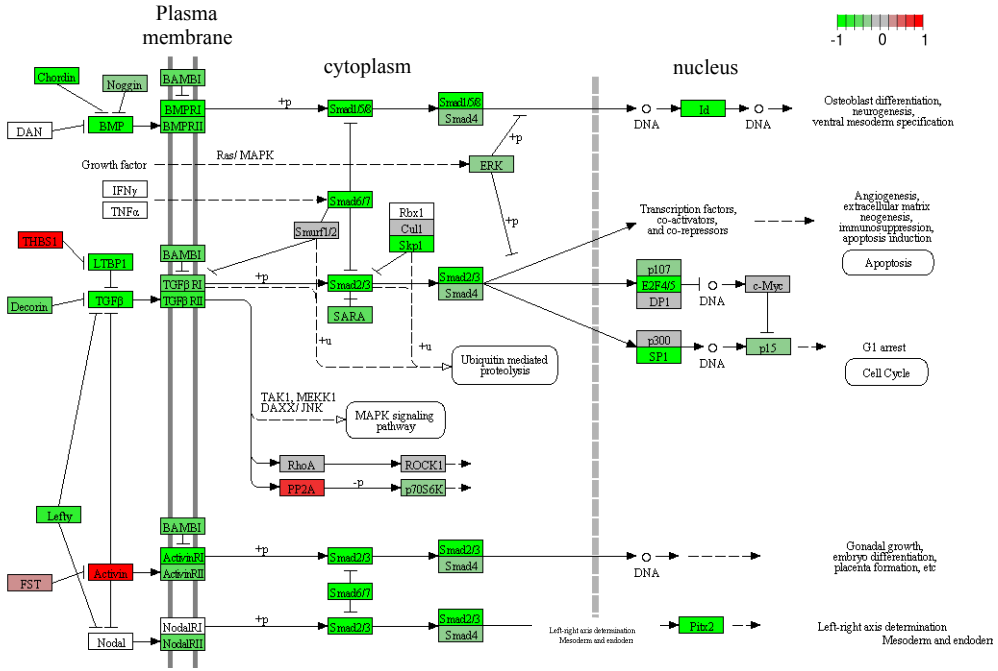
Plasma membrane
cytoplasm
nucleus
-1
0
1
Chordin
Noggin
BAMBI
BMPRI
BMPRII
DAN
BMP
+p
Smad1/5/8
Smad1/5/8
Smad4
DNA
Id
DNA
Osteoblast differentiation, neurogenesis, ventral mesoderm specification
+p
Growth factor
Ras/ MAPK
ERK
IFNγ
TNFα
Smad6/7
Rbx1
Cul1
Skp1
Smurf1/2
+p
Transcription factors, co-activators, and co-repressors
Angiogenesis, extracellular matrix neogenesis, immunosuppression, apoptosis induction
Apoptosis
THBS1
LTBP1
BAMBI
TGFβ RI
TGFβ RII
+p
Smad2/3
Smad2/3
Smad4
p107
E2F4/5
DP1
DNA
c-Myc
Decorin
TGFβ
SARA
+u
+u
Ubiquitin mediated proteolysis
p300
SP1
DNA
p15
G1 arrest
Cell Cycle
TAK1, MEKK1
DAXX/ JNK
MAPK signaling pathway
RhoA
ROCK1
PP2A
-p
p70S6K
Lefty
BAMBI
ActivinRI
ActivinRII
+p
Smad2/3
Smad2/3
Smad4
DNA
Gonadal growth, embryo differentiation, placenta formation, etc
FST
Activin
Smad6/7
NodalRI
NodalRII
+p
Smad2/3
Smad2/3
Smad4
Left-right axis determination
Mesoderm and endoderm
Pitx2
Left-right axis determination
Mesoderm and endoderm
Nodal

S5 Figure