INGENUITY®
PATHWAY ANALYSIS

Analysis Name: TNBC3 vs. Clinical Control
Analysis Creation Date: 2016-02-13
Build version: 366632M
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Analysis Settings

Reference set: Ingenuity Knowledge Base (Genes Only)
Relationship to include: Direct and Indirect
Does not Include Endogenous Chemicals
Optional Analyses: My Pathways My List

Filter Summary:
Consider only relationships where
confidence = Experimentally Observed

Top Canonical Pathways

Name	p-value	Overlap
Hepatic Fibrosis / Hepatic Stellate Cell Activation	9.47E-09	29.0 % 53/183
Basal Cell Carcinoma Signaling	3.28E-08	38.9 % 28/72
Agranulocyte Adhesion and Diapedesis	5.43E-07	26.5 % 50/189
Axonal Guidance Signaling	6.89E-07	21.4 % 93/434
FXR/RXR Activation	1.07E-06	29.4 % 37/126

Top Upstream Regulators

Upstream Regulator	p-value of overlap	Predicted Activation
beta-estradiol	2.12E-20	
TGFB1	1.71E-19	Activated
progesterone	2.95E-19	Activated
dexamethasone	3.06E-19	Activated
TNF	6.88E-19	Activated

Top Diseases and Bio Functions

Diseases and Disorders

Name	p-value	#Molecules
Cancer	5.61E-07 - 7.51E-54	2469
Organismal Injury and Abnormalities	5.75E-07 - 7.51E-54	2520
Dermatological Diseases and Conditions	6.00E-08 - 4.04E-50	1283
Gastrointestinal Disease	2.89E-07 - 2.31E-37	2104
Reproductive System Disease	3.75E-07 - 2.26E-36	1420

Molecular and Cellular Functions

Name	p-value	#Molecules
Cellular Movement	5.84E-07 - 5.91E-30	643
Cellular Growth and Proliferation	3.53E-07 - 3.21E-20	1025
Cell Morphology	5.92E-07 - 2.31E-18	590
Cellular Development	3.53E-07 - 8.76E-18	874
Cell Death and Survival	4.49E-07 - 1.92E-14	818

Physiological System Development and Function

Name	p-value	#Molecules
Cardiovascular System Development and Function	4.51E-07 - 2.28E-22	493
Organismal Development	5.52E-07 - 2.28E-22	958
Embryonic Development	5.52E-07 - 2.15E-20	688
Tissue Development	5.52E-07 - 9.15E-17	981
Tissue Morphology	5.76E-07 - 1.77E-15	586

Top Tox Functions

Assays: Clinical Chemistry and Hematology

Name	p-value	#Molecules
Increased Levels of Alkaline Phosphatase	1.30E-01 - 1.56E-04	22
Decreased Levels of Albumin	1.30E-01 - 1.29E-03	15
Increased Levels of CRP	1.70E-02 - 1.70E-02	2
Increased Levels of LDH	3.82E-01 - 3.65E-02	6
Increased Levels of Creatinine	1.27E-01 - 7.83E-02	12

Cardiotoxicity

Name	p-value	#Molecules
Cardiac Congestive Cardiac Failure	1.30E-01 - 3.19E-10	40
Heart Failure	3.82E-01 - 3.19E-10	78
Cardiac Stenosis	5.03E-01 - 3.67E-07	22
Cardiac Arrythmia	4.77E-01 - 1.32E-06	55
Cardiac Hypertrophy	3.42E-01 - 9.28E-06	84

Hepatotoxicity

Name	p-value	#Molecules
Hepatocellular Carcinoma	5.93E-01 - 1.72E-13	973
Liver Hyperplasia/Hyperproliferation	5.93E-01 - 1.72E-13	1006
Liver Fibrosis	5.03E-01 - 4.88E-05	38
Liver Failure	2.95E-02 - 1.20E-04	13
Liver Proliferation	5.62E-01 - 4.12E-04	45

Nephrotoxicity

Name	p-value	#Molecules
Renal Hydronephrosis	2.44E-01 - 9.82E-07	30
Kidney Failure	4.28E-01 - 3.99E-06	60
Renal Atrophy	3.82E-01 - 1.38E-04	16
Renal Proliferation	6.24E-01 - 1.95E-04	53
Glomerular Injury	1.00E00 - 2.36E-04	53

Top Regulator Effect Networks

ID	Regulators	Diseases & Functions	Consistency Score
1	F2	recruitment of phagocytes	3.474
2	Jnk	recruitment of phagocytes	3.464

3	Pkc(s)	migration of tumor cell lines	3.328
4	LY294002	movement of vascular endothelial cells	3.207
5	kainic acid	cell movement of tumor cell lines	3.175

Top Networks

ID	Associated Network Functions	Score
1	Endocrine System Development and Function, Molecular Transport, Small Molecule Biochemistry	36
2	Cancer, Dermatological Diseases and Conditions, Organismal Injury and Abnormalities	36
3	Antimicrobial Response, Inflammatory Response, Endocrine System Disorders	33
4	Cell-To-Cell Signaling and Interaction, Cell Signaling, Nucleic Acid Metabolism	33
5	Cellular Assembly and Organization, DNA Replication, Recombination, and Repair, Post-Translational Modification	31

Top Tox Lists

Name	p-value	Overlap
FXR/RXR Activation	1.07E-06	29.4 % 37/126
Cardiac Hypertrophy	6.57E-06	20.9 % 84/402
LXR/RXR Activation	3.19E-05	26.8 % 33/123
Hepatic Fibrosis	4.45E-05	28.3 % 28/99
Positive Acute Phase Response Proteins	2.09E-04	40.0 % 12/30

Top Analysis-Ready Molecules

Exp Fold Change up-regulated

Molecules	Exp. Value	Exp. Chart
SCGB2A2	↑ 857.339	
MUCL1	↑ 482.912	
DES	↑ 378.412	
MTND4P24	↑ 321.575	

EGFL6	↑ 294.389
SLC7A4	↑ 245.262
MYOC	↑ 226.240
TNS4	↑ 217.705
SHISA3	↑ 215.800
STAC2	↑ 211.406

Exp Fold Change down-regulated

Molecules	Exp. Value	Exp. Chart
CPB1	↓ -4626.726	
TRH	↓ -4171.580	
MSMB	↓ -4017.221	
CALY	↓ -3177.261	
PRAME	↓ -1744.111	
BMPR1B	↓ -1625.243	
ADAM6	↓ -1335.680	
LINC01193	↓ -1319.504	
KCNJ3*	↓ -1200.292	
IL20	↓ -1060.654	