



Analysis Name: GS.pco2
Analysis Creation Date: 2022-04-26
Build version: exported
Content version: 73620684 (Release Date: 2022-03-12)

Experiment Metadata

Name	Value
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Analysis Settings

Reference set: User Dataset
Relationship to include: Direct and Indirect
Includes Endogenous Chemicals
Optional Analyses: My Pathways My List

Filter Summary:

Consider only molecules and/or relationships where
(species = Rat OR Human OR Uncategorized OR Mouse) AND
(confidence = Experimentally Observed) AND
(tissues/cell lines = Activated helper T cells OR Activated Vd1 Gamma-delta T cells OR SF-539 OR Amygdala OR Effector memory cytotoxic T cells OR MDA-N OR Endothelial cells not otherwise specified OR Other Neurons OR Esophagus OR Salivary Gland OR Pheochromocytoma cell lines not otherwise specified OR Peritoneal macrophages OR Lung Cancer Cell Lines not otherwise specified OR Kidney Cancer Cell Lines not

otherwise specified OR CD56dim NK cells OR Mesenchymal stem cells OR Keratinocytes OR Subventricular Zone OR Cells not otherwise specified OR HepG2 OR TK-10 OR Ovary OR Neurons not otherwise specified OR HS 578T OR Fibroblasts OR Other Cells OR Smooth muscle cells not otherwise specified OR Monocytes not otherwise specified OR 3T3-L1 cells OR Other Ovarian Cancer Cell Lines OR Other Organ Systems OR SF-295 OR Other Smooth muscle cells OR Peripheral blood lymphocytes OR RKO OR Prostate Gland OR Other Cell Line OR Central memory helper T cells OR Effector memory helper T cells OR Cos-7 cells OR RAW 264.7 OR Other Bone marrow cells OR Microvascular endothelial cells OR Neutrophils OR Intraepithelial T lymphocytes OR SN12C OR Vd2 Gamma-delta T cells OR Other B lymphocytes OR Stromal cells OR RPMI-8266 OR OVCAR-5 OR Chondrocytes OR Forestomach OR Mononuclear leukocytes not otherwise specified OR Other Lymphocytes OR Other Prostate Cancer Cell Lines OR SW-620 OR Min6 OR Pre-B lymphocytes OR Other Melanoma Cell Lines OR Central memory cytotoxic T cells OR Megakaryocytes OR Plasma cells OR Hematopoietic progenitor cells OR Other Dendritic cells OR OVCAR-3 OR A375 OR SW-480 OR Dendritic cells not otherwise specified OR SK-MEL-28 OR Stomach OR Thalamus OR Activated CD56bright NK cells OR NCI-H23 OR PANC-1 OR J-774A.1 OR Other Lymphoma Cell Lines OR Other Tissues and Primary Cells OR Eosinophils OR SK-N-SH OR Purkinje cells OR Striatum OR P19 OR Activated CD56dim NK cells OR Langerhans cells OR NK cells not otherwise specified OR Other Teratocarcinoma Cell Lines OR PC-3 OR Granulocytes not otherwise specified OR Nucleus Accumbens OR UACC-257 OR Osteoblasts OR MCF7 OR Colon Cancer Cell Lines not otherwise specified OR Thymocytes OR K-562 OR Pyramidal neurons OR Epidermis OR Other Memory T lymphocytes OR Stem cells not otherwise specified OR UACC-62 OR Cell Line not otherwise specified OR Lymph node OR Placenta OR Bone marrow-derived macrophages OR Kidney cell lines not otherwise specified OR Cerebral Cortex OR INS-1 OR Cerebral Ventricles OR Corpus Callosum OR Pituitary Gland OR Large Intestine OR HeLa OR Myeloma Cell Lines not otherwise specified OR Vascular smooth muscle cells OR Sertoli cells OR Other Kidney cell lines OR BDCA-1+ dendritic cells OR Other Epithelial cells OR Murine NKT cells OR Th1 cells OR Memory T lymphocytes not otherwise specified OR Naive B cells OR Other Macrophages OR Microglia OR Other Mononuclear leukocytes OR Immune cell lines not otherwise specified OR NT2/D1 OR Plasmacytoid dendritic cells OR HOP-62 OR Cervical cancer cell line not otherwise specified OR CCRF-CEM OR CD34+ cells OR Effector T cells OR Pancreas OR Retina OR Immune cells not otherwise specified OR Thymus OR Caudate Nucleus OR Cornea OR A549-ATCC OR PC-12 cells OR Other Stem cells OR Lymphoma Cell Lines not otherwise specified OR Thyroid Gland OR Dermis OR NB4 OR Smooth Muscle OR Fibroblast cell lines not otherwise specified OR Other Kidney Cancer Cell Lines OR MDA-MB-361 OR Neuroblastoma Cell Lines not otherwise specified OR Spleen OR Substantia Nigra OR Mature monocyte-derived dendritic cells OR NCI-H332M OR U2OS OR BA/F3 OR Trigeminal Ganglion OR Myeloid dendritic cells OR PBMCs OR Hepatoma Cell Lines not otherwise specified OR Peripheral blood leukocytes not otherwise specified OR BT-474 OR HCC-2998 OR RXF-393 OR Other Cervical cancer cell line OR Epithelial cells not otherwise specified OR Monocyte-derived macrophage OR Other Monocytes OR Adipose OR Other Granulocytes OR Other NK cells OR Adipocytes OR Mast cells OR B lymphocytes not otherwise specified OR Bone marrow-derived dendritic cells OR Pro-B lymphocytes OR A498 OR Immature monocyte-derived dendritic cells OR SNB-75 OR Dorsal Root Ganglion

OR ACHN OR Macrophages not otherwise specified OR Th17 cells OR NIH/3T3 cells OR Putamen OR U266 OR LNCaP cells OR MDA-MB-231 OR Other Immune cells OR Cortical neurons OR T47-D OR Prostate Cancer Cell Lines not otherwise specified OR Small Intestine OR Other Macrophage Cancer Cell Lines OR Trachea OR Testis OR Other Osteosarcoma Cell Lines OR Blood platelets OR Other Immune cell lines OR Astrocytes OR Hep3B OR U87MG OR NCI-ADR-RES OR Other Leukemia Cell Lines OR IGROV1 OR Ventricular Zone OR Hypothalamus OR HEL OR Mammary Gland OR Calvaria OR 786-0 OR NCI-H522 OR U937 OR KM-12 OR Kidney OR Spinal Cord OR Other Fibroblast cell lines OR HUVEC cells OR Lung OR Lymphocytes not otherwise specified OR Caco2 cells OR Cerebellum OR Embryonic stem cells OR Natural T-regulatory cells OR 293 cells OR Bladder OR Ovarian Cancer Cell Lines not otherwise specified OR Gray Matter OR Memory B cells OR Splenocytes OR Liver OR Organ Systems not otherwise specified OR MG-63 OR Teratocarcinoma Cell Lines not otherwise specified OR Effector memory RA+ cytotoxic T cells OR Adrenal Gland OR HCT-15 OR Other T lymphocytes OR SK-MEL-5 OR Hepatocytes OR Nervous System not otherwise specified OR HMC-1 OR Hippocampus OR A2780 OR UO-31 OR Choroid Plexus OR NCI-H226 OR Granule cells OR Medulla Oblongata OR Brainstem OR SK-OV-3 OR Other Endothelial cells OR Olfactory Bulb OR Other Monocyte-derived dendritic cells OR HOP-92 OR Cytotoxic T cells OR Oocytes OR Other Pancreatic Cancer Cell Lines OR Other Neuroblastoma Cell Lines OR CAKI-1 OR SR OR Skeletal Muscle OR H460 OR MDA-MB-435 OR RBL-2H3 OR J774 OR Other Lung Cancer Cell Lines OR T lymphocytes not otherwise specified OR MOLT-4 OR Granulosa cells OR EKVX OR Melanoma Cell Lines not otherwise specified OR Swiss 3T3 cells OR Sciatic Nerve OR Melanocytes OR Bone marrow cells not otherwise specified OR Cartilage Tissue OR Lens OR White Matter OR COLO205 OR Macrophage Cancer Cell Lines not otherwise specified OR LOX IMVI OR MEF cells OR Crypt OR Vd1 Gamma-delta T cells OR Other Hepatoma Cell Lines OR Naive helper T cells OR Breast Cancer Cell Lines not otherwise specified OR HCT-116 OR Other Myeloma Cell Lines OR MALME-3M OR MDA-MB-468 OR Osteosarcoma Cell Lines not otherwise specified OR BDCA-3+ dendritic cells OR Pancreatic Cancer Cell Lines not otherwise specified OR Other Peripheral blood leukocytes OR BT-549 OR Granule Cell Layer OR Tissues and Primary Cells not otherwise specified OR Jurkat OR U251 OR Th2 cells OR HL-60 OR Activated Vd2 Gamma-delta T cells OR Other CNS Cell Lines OR Uterus OR CD4+ T-lymphocytes OR HuH7 OR OVCAR-4 OR OVCAR-8 OR Skin OR SK-MEL-2 OR Monocyte-derived dendritic cells not otherwise specified OR CNS Cell Lines not otherwise specified OR Leukemia Cell Lines not otherwise specified OR Heart OR THP-1 OR Beta islet cells OR DU-145 OR Other Breast Cancer Cell Lines OR Brain OR CD56bright NK cells OR Parietal Lobe OR Other Pheochromocytoma cell lines OR HT29 OR Other Colon Cancer Cell Lines OR Cardiomyocytes OR Peripheral blood monocytes OR M14 OR WEHI-231 OR Other Nervous System OR SF-268) AND (mol. types = biologic drug OR canonical pathway OR chemical - endogenous mammalian OR chemical - endogenous non-mammalian OR chemical - kinase inhibitor OR chemical - other OR chemical - protease inhibitor OR chemical drug OR chemical reagent OR chemical toxicant OR complex OR cytokine OR disease OR enzyme OR function OR fusion gene/product OR G-protein coupled receptor OR group OR growth factor OR ion channel OR kinase OR ligand-dependent nuclear receptor OR mature microRNA OR microRNA OR other OR peptidase OR phosphatase OR transcription regulator OR translation regulator OR transmembrane receptor OR transporter) AND

(data sources = An Open Access Database of Genome-wide Association Results OR BIND OR BioGRID OR Catalogue Of Somatic Mutations In Cancer (COSMIC) OR Chemical Carcinogenesis Research Information System (CCRIS) OR Clinical Genome Resource (ClinGen) OR ClinicalTrials.gov OR ClinVar OR Cognia OR DIP OR DrugBank OR Gene Ontology (GO) OR GVK Biosciences OR Hazardous Substances Data Bank (HSDB) OR HumanCyc OR Ingenuity Expert Findings OR Ingenuity ExpertAssist Findings OR IntAct OR Interactome studies OR MIPS OR miRBase OR miRecords OR Mouse Genome Database (MGD) OR Obesity Gene Map Database OR Online Mendelian Inheritance in Man (OMIM) OR TarBase OR TargetScan Human)

Top Canonical Pathways

Name	p-value	Overlap
EIF2 Signaling	1.48E-11	55.7 % 59/106
Oxidative Phosphorylation	4.15E-09	73.5 % 25/34
Mitochondrial Dysfunction	4.20E-07	55.9 % 33/59
Gluconeogenesis I	8.57E-06	90.9 % 10/11
Glycolysis I	4.36E-04	80.0 % 8/10

Top Upstream Regulators

Upstream Regulators

Name	p-value	Predicted Activation
YAP1	4.91E-21	Inhibited
torin1	1.03E-20	Activated
LARP1	7.90E-18	Activated
acyline	1.53E-14	

MLXIPL

2.52E-13

Inhibited

Causal Network

Name	p-value	Predicted Activation
LARP1	7.90E-18	Activated
MLXIPL	5.08E-17	Inhibited
RICTOR	3.17E-12	Activated
Lh	3.91E-12	Inhibited
FBXW7	4.92E-12	Activated

Top Diseases and Bio Functions**Diseases and Disorders**

Name	p-value range	# Molecules
Cancer	2.02E-02 - 8.14E-07	980
Organismal Injury and Abnormalities	2.04E-02 - 8.14E-07	1079
Tumor Morphology	2.02E-02 - 8.14E-07	90
Cardiovascular Disease	1.80E-02 - 1.22E-06	129
Developmental Disorder	1.80E-02 - 1.22E-06	136

Molecular and Cellular Functions

Name	p-value range	# Molecules
Cell Death and Survival	1.60E-02 - 8.14E-07	304
Cell Signaling	1.60E-02 - 1.32E-06	22
Post-Translational Modification	1.60E-02 - 1.32E-06	18
Protein Synthesis	1.37E-02 - 1.32E-06	198
Lipid Metabolism	1.61E-02 - 2.54E-04	19

Physiological System Development and Function

Name	p-value range	# Molecules
Cardiovascular System Development and Function	1.80E-02 - 6.40E-04	59
Endocrine System Development and Function	1.60E-02 - 1.01E-03	6
Organ Morphology	2.04E-02 - 1.01E-03	63
Tissue Morphology	2.04E-02 - 1.01E-03	58
Embryonic Development	1.80E-02 - 1.04E-03	56

Top Tox Functions

Assays: Clinical Chemistry and Hematology

Name	p-value range	# Molecules
Increased Levels of Red Blood Cells	1.60E-01 - 1.60E-01	11
Increased Levels of ALT	5.82E-01 - 1.73E-01	3

Increased Levels of Hematocrit	2.21E-01 - 2.21E-01	9
Increased Levels of Bilirubin	4.41E-01 - 2.52E-01	2
Decreased Levels of Albumin	4.41E-01 - 2.65E-01	4

Cardiotoxicity

Name	p-value range	# Molecules
Cardiac Dilation	1.00E00 - 7.87E-03	37
Cardiac Enlargement	1.00E00 - 7.87E-03	70
Cardiac Pulmonary Embolism	2.52E-01 - 1.60E-02	5
Cardiac Arrhythmia	1.00E00 - 4.26E-02	33
Cardiac Damage	1.00E00 - 5.70E-02	13

Hepatotoxicity

Name	p-value range	# Molecules
Hepatocellular carcinoma	1.00E00 - 4.38E-04	209
Liver Hyperplasia/Hyperproliferation	1.00E00 - 4.38E-04	688
Glutathione Depletion In Liver	1.00E00 - 1.06E-01	7
Liver Fibrosis	1.00E00 - 1.06E-01	33
Liver Cholestasis	5.82E-01 - 1.44E-01	13

Nephrotoxicity

Name	p-value range	# Molecules
Renal Dysplasia	2.92E-01 - 1.60E-02	4
Nephrosis	1.00E00 - 5.19E-02	15
Renal Hypoplasia	2.58E-01 - 5.19E-02	9
Renal Necrosis/Cell Death	1.00E00 - 5.19E-02	51
Renal Damage	1.00E00 - 5.62E-02	23

Top Regulator Effect Networks

ID	Regulators	Disease & Functions	Consistency Score
1	DDX3X,FAAH,IGF1R,LARP1,let-7,Lh,MLXIPL,MYC,MYCN (+3 more)	Cell death of osteosarcoma cells,Cleft lip (+1 more)	14.711
2	CKAP2L,ERBB2,KLF5,MED1,PRL,Rb,TBX2	Cleavage of cells,Cleft lip	2.46
3	RBL1	Cleavage of cells	-7.5

Top Networks

ID	Associated Network Functions	Score
1	Gene Expression, Protein Synthesis, Cellular Development	49
2	RNA Post-Transcriptional Modification, Cancer, Cell Death and Survival	46

3	Cancer, Gastrointestinal Disease, Organismal Injury and Abnormalities	44
4	Cellular Assembly and Organization, DNA Replication, Recombination, and Repair, Cell Cycle	44
5	Small Molecule Biochemistry, Nucleic Acid Metabolism, Metabolic Disease	44

Top Tox Lists

Name	p-value	Overlap
Mitochondrial Dysfunction	4.20E-07	55.9 % 33/59
Oxidative Stress	3.00E-02	47.4 % 9/19
Increases Liver Hepatitis	3.00E-02	47.4 % 9/19
Increases Renal Nephritis	5.04E-02	55.6 % 5/9
Recovery from Ischemic Acute Renal Failure (Rat)	5.19E-02	75.0 % 3/4

Top My Lists

Top My Pathways

Top Analysis-Ready Molecules

Expr Log Ratio

Molecules	Expr. Value	Chart
LRP6*	↑ 0.694	
NALCN*	↑ 0.599	
NXF1	↑ 0.593	
ZNF729*	↑ 0.586	
MPG	↑ 0.586	
LHCGR	↑ 0.586	
ZBTB24	↑ 0.584	
TRPC5*	↑ 0.582	
FKBP4*	↑ 0.580	
OTOF*	↑ 0.569	

Expr Log Ratio

Molecules	Expr. Value	Chart
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NME1	↓ -0.615	
Serpinb1b	↓ -0.607	
SERPINC1*	↓ -0.581	
INTS14*	↓ -0.580	
INTS5	↓ -0.575	
SSRP1	↓ -0.575	
CPAMD8*	↓ -0.573	
TAPT1*	↓ -0.572	
MTX2*	↓ -0.570	
TMPRSS6*	↓ -0.566	