



Analysis Name: MM.lightcyan1

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
Oxidative Phosphorylation	4.86E-07	79.4 % 27/34
Mitochondrial Dysfunction	1.32E-06	67.8 % 40/59
FAT10 Signaling Pathway	6.13E-06	75.8 % 25/33
Fatty Acid -oxidation I	7.63E-06	88.9 % 16/18
TCA Cycle II (Eukaryotic)	1.85E-05	88.2 % 15/17

Top Upstream Regulators

Upstream Regulators

Name	p-value	Predicted Activation
CLPP	8.58E-11	Inhibited
pirinixic acid	6.91E-10	Activated
miR-9-5p (and other miRNAs w/seed CUUUGGU)	3.86E-09	Inhibited

SMYD1	2.22E-08	
metribolone	4.19E-08	Activated

Causal Network

Name	p-value	Predicted Activation
NDUFV1	5.78E-13	Activated
Perm1	4.13E-11	Activated
POU2F1	4.27E-11	
2-amino-2-norbornanecarboxylic acid	7.84E-11	
L-leucine	7.90E-11	

Top Diseases and Bio Functions

Diseases and Disorders

Name	p-value range	# Molecules
Metabolic Disease	2.85E-02 - 1.91E-07	540
Organismal Injury and Abnormalities	3.20E-02 - 1.91E-07	1599
Hereditary Disorder	2.85E-02 - 8.70E-06	721
Neurological Disease	3.18E-02 - 8.70E-06	744
Skeletal and Muscular Disorders	2.85E-02 - 8.70E-06	593

Molecular and Cellular Functions

Name	p-value range	# Molecules
Lipid Metabolism	3.03E-02 - 5.82E-05	286
Small Molecule Biochemistry	3.03E-02 - 5.82E-05	426
Cell Death and Survival	2.34E-02 - 2.35E-04	215
Cellular Compromise	7.09E-03 - 2.35E-04	27
Free Radical Scavenging	2.85E-02 - 3.43E-04	120

Physiological System Development and Function

Name	p-value range	# Molecules
Tissue Morphology	3.18E-02 - 2.35E-04	160
Organ Development	3.20E-02 - 3.45E-04	136
Reproductive System Development and Function	3.18E-02 - 3.45E-04	78
Behavior	4.58E-03 - 3.85E-04	28
Hematological System Development and Function	2.85E-02 - 2.51E-03	44

Top Tox Functions

Assays: Clinical Chemistry and Hematology

Name	p-value range	# Molecules
Increased Levels of Red Blood Cells	2.01E-02 - 2.01E-02	18
Increased Levels of ALT	5.04E-02 - 5.04E-02	3

Increased Levels of Creatinine	4.72E-01 - 1.48E-01	8
Increased Levels of Potassium	2.33E-01 - 2.06E-01	5
Increased Levels of Hematocrit	2.68E-01 - 2.68E-01	12

Cardiotoxicity

Name	p-value range	# Molecules
Cardiac Dilation	1.00E00 - 3.13E-03	56
Cardiac Enlargement	1.00E00 - 3.13E-03	98
Heart Failure	1.00E00 - 6.10E-02	59
Cardiac Regeneration	3.70E-01 - 6.56E-02	4
Cardiac Congestive Cardiac Failure	3.09E-01 - 8.42E-02	27

Hepatotoxicity

Name	p-value range	# Molecules
Liver Steatosis	5.55E-01 - 6.28E-05	69
Liver Cholestasis	1.00E00 - 8.61E-04	26
Liver Inflammation/Hepatitis	1.00E00 - 3.48E-02	55
Liver Hyperplasia/Hyperproliferation	1.00E00 - 3.55E-02	999
Hepatocellular carcinoma	1.00E00 - 5.04E-02	268

Nephrotoxicity

Name	p-value range	# Molecules
Nephrosis	1.00E00 - 8.35E-04	39
Glomerular Injury	1.00E00 - 5.27E-03	57
Renal Dilation	1.37E-01 - 1.86E-02	4
Renal Enlargement	1.00E00 - 5.04E-02	8
Renal Necrosis/Cell Death	1.00E00 - 6.56E-02	72

Top Regulator Effect Networks

ID	Regulators	Disease & Functions	Consistency Score
1	CLPP,CPT1B,Esrra,HSF2,LARP1,Lh,MYC,MYCN,NFE2L1 (+4 more)	Cell death of osteosarcoma cells (+3 more)	19.625
2	C1QTNF1,CLUH,CYP19A1,GABARAP,GABARAPL1,GABARAPL2 (+2 more)	Accumulation of lipid,Degeneration of cerebellum (+2 more)	9.798
3	BCL6,ESRRA,ESRRG,GCK,KLF15,Perm1,PPARA,PPARD (+3 more)	Microvesicular hepatic steatosis	9.354
4	ESRRA,KLF15,MAP4K4,PNPLA2,PPARGC1A,SLC27A2	Catabolism of lipid (+1 more)	6.548
5	BCL6,CFTR,FOXO1,NAMPT,RORC	Concentration of fatty acid (+1 more)	4.828

Top Networks

ID	Associated Network Functions	Score
1	Gene Expression, Protein Synthesis, Cancer	44

2	Cellular Assembly and Organization, Cell-To-Cell Signaling and Interaction, Reproductive System Development and Function	44
3	Connective Tissue Disorders, Developmental Disorder, Hereditary Disorder	41
4	Molecular Transport, Hereditary Disorder, Immunological Disease	41
5	Cellular Assembly and Organization, Cellular Function and Maintenance, Amino Acid Metabolism	41

Top Tox Lists

Name	p-value	Overlap
Mitochondrial Dysfunction	1.32E-06	67.8 % 40/59
Fatty Acid Metabolism	3.44E-06	70.2 % 33/47
Aryl Hydrocarbon Receptor Signaling	7.07E-04	59.6 % 31/52
LPS/IL-1 Mediated Inhibition of RXR Function	9.28E-04	54.2 % 45/83
Oxidative Stress	1.81E-02	63.2 % 12/19

Top My Lists


Name	p-value	Overlap
FAO	4.53E-04	69.0 % 20/29
MuscleDevelopment	1.71E-01	43.9 % 25/57
MyogenesisMuscleDevelopment	1.71E-01	43.9 % 25/57
FAoxidationSM	2.99E-01	46.7 % 7/15
MuscleCellProliferation	3.72E-01	40.5 % 17/42


Top My Pathways

Name	p-value	Overlap
FAO	1.91E-04	73.1 % 19/26
MuscleCellProliferation	2.28E-01	50.0 % 7/14
quantity of photoreceptors 2	3.09E-01	66.7 % 2/3
BloodVesselDevelop	1.00E00	33.3 % 5/15
TGF- Signaling	1.00E00	25.0 % 8/32

Top Analysis-Ready Molecules

Expr Log Ratio

Molecules	Expr. Value	Chart
MUC4*	↑ 0.917	

CPN2	↑ 0.909	
TRPA1*	↑ 0.903	
EZR*	↑ 0.902	
RHBDL2	↑ 0.891	
UBA1*	↑ 0.880	
USP5*	↑ 0.876	
PAK1*	↑ 0.873	
WIF1	↑ 0.870	
DNAH5*	↑ 0.868	

Expr Log Ratio

Molecules	Expr. Value	Chart
CROCC*	↓ -0.670	
PSG9*	↓ -0.664	
PLIN2	↓ -0.641	
ACE*	↓ -0.621	
GRIK2*	↓ -0.608	
DPEP3*	↓ -0.606	
CBFB*	↓ -0.605	

NPHS1*	↓ -0.605	
IRF2BP1	↓ -0.605	
ATP2B2*	↓ -0.602	