



Analysis Name: rMATS\_WTvmUT\_P40Output\_SigASEs\_Interest - 2020-01-08 02:05 PM

Analysis Creation Date: 2020-01-08

Build version: exported

Content version: 49932394 (Release Date: 2019-11-14)

### Experiment Metadata

Name	Value
originalColumnNames	GeneID

### Analysis Settings

Reference set: Ingenuity Knowledge Base (Genes Only)

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 = Mouse) AND

(confidence = Experimentally Observed) AND

(tissues/cell lines = Vd1 Gamma-delta T cells OR HL-60 OR Langerhans cells OR Cerebral Cortex OR Immune cell lines not otherwise specified OR Megakaryocytes OR Cerebral Ventricles OR Stem cells not otherwise specified OR Cervical cancer cell line not otherwise specified OR Pituitary Gland OR KM-12 OR Retina OR Other Lymphocytes OR Mononuclear leukocytes not otherwise specified OR Plasmacytoid dendritic

cells OR Purkinje cells OR Vascular smooth muscle cells OR Microvascular endothelial cells OR U937 OR Intraepithelial T lymphocytes OR Tissues and Primary Cells not otherwise specified OR Kidney cell lines not otherwise specified OR BDCA-3+ dendritic cells OR COLO205 OR INS-1 OR LNCaP cells OR Other Immune cell lines OR Hep3B OR T47-D OR Myeloma Cell Lines not otherwise specified OR Other Macrophage Cancer Cell Lines OR MDA-MB-231 OR Osteosarcoma Cell Lines not otherwise specified OR U87MG OR Other Epithelial cells OR Smooth muscle cells not otherwise specified OR HeLa OR Prostate Cancer Cell Lines not otherwise specified OR PBMCs OR Other Cervical cancer cell line OR RXF-393 OR BT-474 OR UACC-257 OR Dermis OR Other Peripheral blood leukocytes OR Breast Cancer Cell Lines not otherwise specified OR Other Pancreatic Cancer Cell Lines OR Thyroid Gland OR Neurons not otherwise specified OR SR OR Other Nervous System OR Peripheral blood lymphocytes OR H460 OR Osteoblasts OR Other Bone marrow cells OR Other Lung Cancer Cell Lines OR Salivary Gland OR Endothelial cells not otherwise specified OR SNB-75 OR Effector memory cytotoxic T cells OR Activated Vd1 Gamma-delta T cells OR Microglia OR Activated Vd2 Gamma-delta T cells OR Choroid Plexus OR Effector T cells OR Mature monocyte-derived dendritic cells OR Peripheral blood monocytes OR Myeloid dendritic cells OR Other Macrophages OR Naive B cells OR Cardiomyocytes OR PANC-1 OR Teratocarcinoma Cell Lines not otherwise specified OR SK-MEL-28 OR SW-480 OR Spleen OR Pyramidal neurons OR Substantia Nigra OR Uterus OR CD56bright NK cells OR Parietal Lobe OR HCT-15 OR P19 OR UO-31 OR Epidermis OR Thymus OR A2780 OR CD56dim NK cells OR HMC-1 OR NCI-ADR-RES OR HEL OR Bladder OR Jurkat OR Other Prostate Cancer Cell Lines OR Other CNS Cell Lines OR NCI-H522 OR Other Cells OR Astrocytes OR Central memory helper T cells OR Smooth Muscle OR 293 cells OR Caco2 cells OR HuH7 OR Swiss 3T3 cells OR U266 OR Effector memory helper T cells OR Memory T lymphocytes not otherwise specified OR Hematopoietic progenitor cells OR HS 578T OR Chondrocytes OR Subventricular Zone OR MEF cells OR Other Hepatoma Cell Lines OR Amygdala OR Small Intestine OR HCT-116 OR Central memory cytotoxic T cells OR Pancreatic Cancer Cell Lines not otherwise specified OR Other Myeloma Cell Lines OR SF-295 OR Macrophage Cancer Cell Lines not otherwise specified OR Macrophages not otherwise specified OR Other Osteosarcoma Cell Lines OR MALME-3M OR MDA-MB-468 OR RAW 264.7 OR Sciatic Nerve OR Bone marrow-derived dendritic cells OR White Matter OR HOP-92 OR SK-OV-3 OR Lymph node OR BDCA-1+ dendritic cells OR HCC-2998 OR Other T lymphocytes OR NIH/3T3 cells OR Immature monocyte-derived dendritic cells OR Keratinocytes OR A498 OR CAKI-1 OR Pre-B lymphocytes OR Melanoma Cell Lines not otherwise specified OR Organ Systems not otherwise specified OR Activated CD56dim NK cells OR MDA-MB-435 OR Thymocytes OR Liver OR Mammary Gland OR Hepatocytes OR ACHN OR J774 OR Other Neuroblastoma Cell Lines OR Other B lymphocytes OR Hippocampus OR NK cells not otherwise specified OR THP-1 OR Other Breast Cancer Cell Lines OR Hypothalamus OR DU-145 OR Vd2 Gamma-delta T cells OR Leukemia Cell Lines not otherwise specified OR CNS Cell Lines not otherwise specified OR Adipocytes OR Eosinophils OR HT29 OR Embryonic stem cells OR Ovary OR HUVEC cells OR Other Tissues and Primary Cells OR Other Colon Cancer Cell Lines OR Lung OR Other Pheochromocytoma cell lines OR Stromal cells OR SF-268 OR M14 OR NCI-H226 OR WEHI-231 OR Splenocytes OR Beta islet cells OR Bone marrow cells not otherwise specified OR Lens OR Monocyte-derived dendritic cells not otherwise specified OR Nervous System not otherwise specified OR U251

OR SN12C OR RPMI-8266 OR Caudate Nucleus OR Other Memory T lymphocytes OR Melanocytes OR Naive helper T cells OR Immune cells not otherwise specified OR OVCAR-8 OR Other Melanoma Cell Lines OR OVCAR-4 OR SK-MEL-2 OR Bone marrow-derived macrophages OR A375 OR Brainstem OR Granule cells OR Cos-7 cells OR Sertoli cells OR Nucleus Accumbens OR Olfactory Bulb OR Ventricular Zone OR RBL-2H3 OR LOX IMVI OR Spinal Cord OR Granulosa cells OR Other Cell Line OR Skeletal Muscle OR BT-549 OR Putamen OR Other Monocyte-derived dendritic cells OR SF-539 OR Trigeminal Ganglion OR Other Immune cells OR Other Teratocarcinoma Cell Lines OR MDA-N OR Skin OR Placenta OR MOLT-4 OR Pheochromocytoma cell lines not otherwise specified OR K-562 OR Kidney Cancer Cell Lines not otherwise specified OR Brain OR Large Intestine OR EKVX OR TK-10 OR Peripheral blood leukocytes not otherwise specified OR Ovarian Cancer Cell Lines not otherwise specified OR Murine NKT cells OR Pancreas OR Granule Cell Layer OR J-774A.1 OR Granulocytes not otherwise specified OR Th2 cells OR NCI-H23 OR Lung Cancer Cell Lines not otherwise specified OR Other Lymphoma Cell Lines OR Cytotoxic T cells OR SK-N-SH OR B lymphocytes not otherwise specified OR MG-63 OR SK-MEL-5 OR CD34+ cells OR Other Mononuclear leukocytes OR T lymphocytes not otherwise specified OR Mast cells OR Cornea OR Other Stem cells OR Medulla Oblongata OR IGROV1 OR Fibroblasts OR HOP-62 OR OVCAR-5 OR Other Leukemia Cell Lines OR Striatum OR Gray Matter OR 786-0 OR NT2/D1 OR OVCAR-3 OR Adrenal Gland OR Peritoneal macrophages OR Testis OR Min6 OR SW-620 OR Forestomach OR 3T3-L1 cells OR Heart OR Th1 cells OR Other Fibroblast cell lines OR Monocytes not otherwise specified OR Trachea OR Other Organ Systems OR Activated helper T cells OR Other Monocytes OR Cell Line not otherwise specified OR Blood platelets OR Corpus Callosum OR Other Dendritic cells OR Plasma cells OR Other Ovarian Cancer Cell Lines OR Monocyte-derived macrophage OR Prostate Gland OR Crypt OR Cortical neurons OR Other Smooth muscle cells OR Pro-B lymphocytes OR RKO OR Cells not otherwise specified OR Mesenchymal stem cells OR Other NK cells OR Dorsal Root Ganglion OR Adipose OR Other Kidney cell lines OR Cartilage Tissue OR CD4+ T-lymphocytes OR Dendritic cells not otherwise specified OR PC-3 OR Natural T-regulatory cells OR U2OS OR Memory B cells OR MCF7 OR Thalamus OR MDA-MB-361 OR Stomach OR Effector memory RA+ cytotoxic T cells OR HepG2 OR Colon Cancer Cell Lines not otherwise specified OR Other Granulocytes OR Esophagus OR Oocytes OR UACC-62 OR Activated CD56bright NK cells OR Other Endothelial cells OR NB4 OR Lymphocytes not otherwise specified OR Hepatoma Cell Lines not otherwise specified OR Cerebellum OR A549-ATCC OR Epithelial cells not otherwise specified OR PC-12 cells OR Other Neurons OR Lymphoma Cell Lines not otherwise specified OR Other Kidney Cancer Cell Lines OR Fibroblast cell lines not otherwise specified OR CCRF-CEM OR Th17 cells OR Neuroblastoma Cell Lines not otherwise specified OR Calvaria OR NCI-H332M OR Kidney OR Neutrophils OR BA/F3) 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 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 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
<a href="#">Regulation of Actin-based Motility by Rho</a>	5.43E-03	4.7 % 4/86
<a href="#">Integrin Signaling</a>	6.70E-03	2.9 % 6/204
<a href="#">Regulation of Cellular Mechanics by Calpain Protease</a>	1.49E-02	4.8 % 3/63
<a href="#">ErbB2-ErbB3 Signaling</a>	1.55E-02	4.7 % 3/64
<a href="#">RhoA Signaling</a>	1.61E-02	3.4 % 4/118

### Top Upstream Regulators

#### Upstream Regulators

Name	p-value	Predicted Activation
<a href="#">COL6A1</a>	5.86E-03	
<a href="#">CELSR3</a>	8.32E-03	

<b>Pka catalytic subunit</b>	8.32E-03
<b>GABRD</b>	8.32E-03
<b>COL6A3</b>	8.32E-03

### Causal Network

Name	p-value	Predicted Activation
<b>COL6A1</b>	5.86E-03	
<b>Pka catalytic subunit</b>	8.32E-03	
<b>GABRD</b>	8.32E-03	
<b>COL6A3</b>	8.32E-03	
<b>ATP7A</b>	8.32E-03	

### Top Diseases and Bio Functions

#### Diseases and Disorders

Name	p-value range	# Molecules
<b>Neurological Disease</b>	4.99E-02 - 3.94E-04	21
<b>Connective Tissue Disorders</b>	4.81E-02 - 2.02E-03	10
<b>Developmental Disorder</b>	4.81E-02 - 2.02E-03	19
<b>Organismal Injury and Abnormalities</b>	4.81E-02 - 2.02E-03	32
<b>Skeletal and Muscular Disorders</b>	4.81E-02 - 2.02E-03	12

**Molecular and Cellular Functions**

Name	p-value range	# Molecules
<b>Cellular Movement</b>	3.23E-02 - 3.94E-04	11
<b>Cell Signaling</b>	4.81E-02 - 5.52E-04	5
<b>Post-Translational Modification</b>	4.81E-02 - 5.52E-04	6
<b>Cell Morphology</b>	4.81E-02 - 6.84E-04	24
<b>Cellular Function and Maintenance</b>	4.02E-02 - 1.10E-03	25

**Physiological System Development and Function**

Name	p-value range	# Molecules
<b>Organismal Functions</b>	4.79E-03 - 6.64E-05	6
<b>Nervous System Development and Function</b>	4.81E-02 - 3.94E-04	27
<b>Connective Tissue Development and Function</b>	4.81E-02 - 6.84E-04	15
<b>Embryonic Development</b>	4.81E-02 - 1.36E-03	34
<b>Organ Development</b>	4.82E-02 - 1.36E-03	30

**Top Tox Functions****Assays: Clinical Chemistry and Hematology**

Name	p-value range	# Molecules
<b>Increased Levels of Red Blood Cells</b>	2.15E-01 - 2.15E-01	2

**Cardiotoxicity**

Name	p-value range	# Molecules
<b>Cardiac Hypoplasia</b>	3.67E-02 - 3.67E-02	2
<b>Cardiac Damage</b>	7.88E-02 - 7.88E-02	1
<b>Cardiac Degeneration</b>	7.88E-02 - 7.88E-02	1
<b>Cardiac Proliferation</b>	8.40E-02 - 8.40E-02	2
<b>Cardiac Enlargement</b>	5.15E-01 - 1.25E-01	7

**Hepatotoxicity**

Name	p-value range	# Molecules
<b>Hepatocellular Peroxisome Proliferation</b>	5.59E-02 - 5.59E-02	1
<b>Hepatocellular carcinoma</b>	5.75E-01 - 7.12E-02	2
<b>Liver Hyperplasia/Hyperproliferation</b>	5.75E-01 - 7.12E-02	2
<b>Liver Cholestasis</b>	1.30E-01 - 1.30E-01	1
<b>Liver Steatosis</b>	2.92E-01 - 2.92E-01	4

**Nephrotoxicity**

Name	p-value range	# Molecules
<b>Glomerular Injury</b>	2.12E-01 - 4.81E-02	2
<b>Renal Necrosis/Cell Death</b>	4.81E-02 - 4.81E-02	1

## Top Regulator Effect Networks

## Top Networks

ID	Associated Network Functions	Score
1	Cell Signaling, Cell Morphology, Cellular Assembly and Organization	25
2	Cellular Assembly and Organization, Energy Production, Lipid Metabolism	21
3	Gene Expression, DNA Replication, Recombination, and Repair, Cellular Development	19
4	Cellular Development, Cellular Growth and Proliferation, Embryonic Development	19
5	Lipid Metabolism, Molecular Transport, Small Molecule Biochemistry	17

## Top Tox Lists



Name	p-value	Overlap
<b>Renal Proximal Tubule Toxicity Biomarker Panel (Rat)</b>	1.76E-02	8.0 % 2/25
<b>Cytochrome P450 Panel - Substrate is an Eicosanoid (Rat)</b>	4.02E-02	20.0 % 1/5
<b>Genes Upregulated in Response to Chronic Renal Failure (Rat)</b>	4.02E-02	20.0 % 1/5
<b>Cytochrome P450 Panel - Substrate is an Eicosanoid (Mouse)</b>	4.81E-02	16.7 % 1/6
<b>Cytochrome P450 Panel - Substrate is a Fatty Acid (Rat)</b>	8.64E-02	9.1 % 1/11

### Top My Lists

### Top My Pathways

### Top Analysis-Ready Molecules

### Expr Log Ratio

Molecules	Expr. Value	Chart
<b>ARMC3</b>	↑ 0.751	
<b>VRK1</b>	↑ 0.657	
<b>PPP4R2</b>	↑ 0.637	

SLC37A3	↑ 0.630
RPE*	↑ 0.616
PHKG2	↑ 0.612
RTL4	↑ 0.612
CDK2	↑ 0.601
EPB41L2	↑ 0.596
MECOM	↑ 0.592

### Expr Log Ratio

Molecules	Expr. Value	Chart
ALPK1*	↓ -0.923	
9330188P03Rik	↓ -0.863	
LSM7	↓ -0.788	
FLNC	↓ -0.778	
BCO2	↓ -0.762	
METTL25	↓ -0.667	
PROCA1	↓ -0.662	
Zfp862-ps	↓ -0.648	
COMMD7	↓ -0.640	
ADAMTSL5	↓ -0.640	