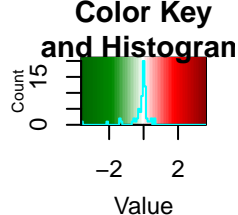
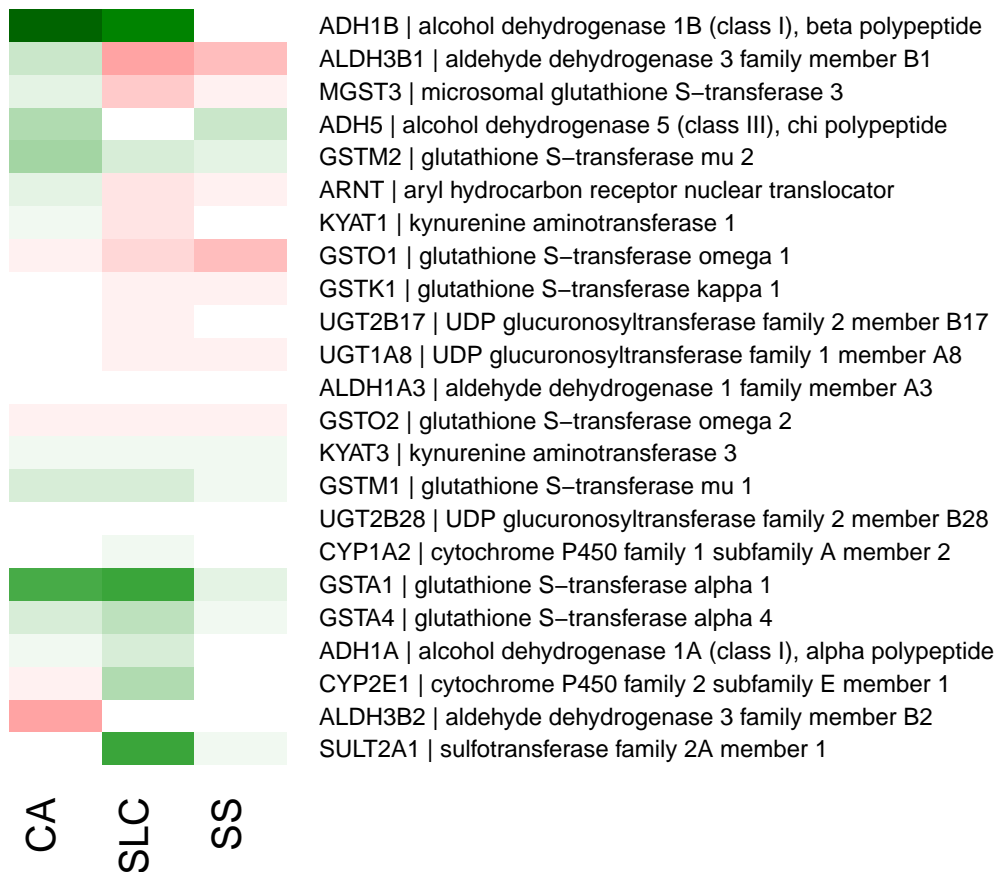


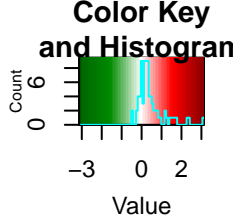
Gene-level heatmap for 66 pathways



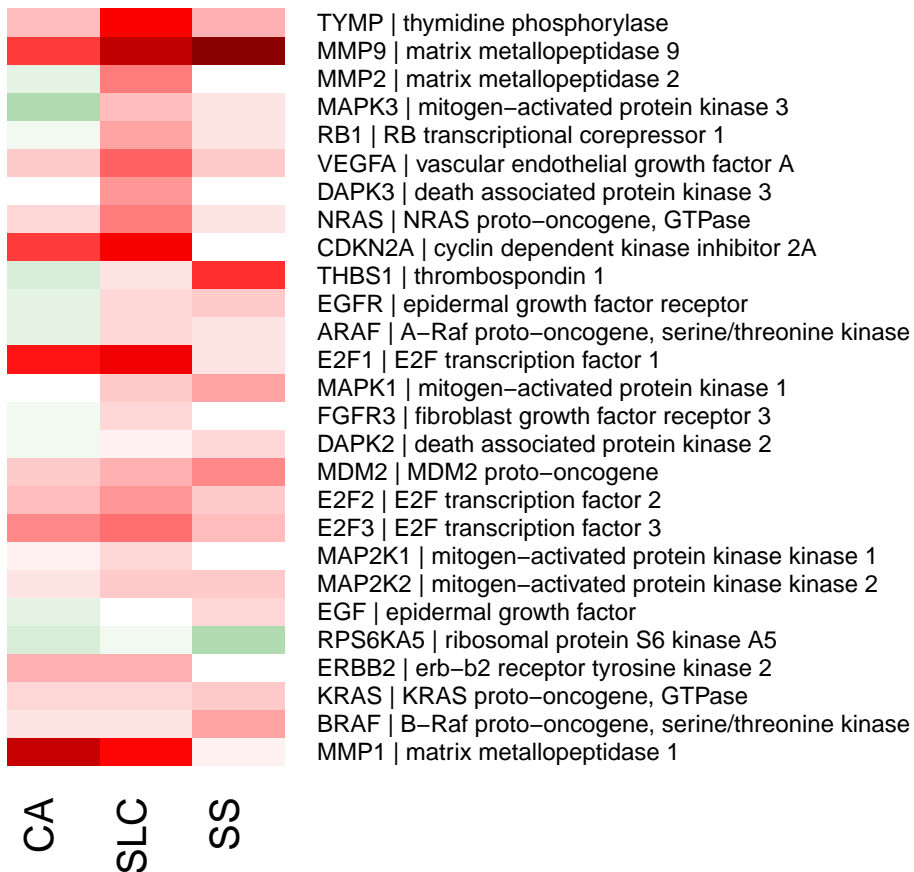
Chemical carcinogenesis hsa05204



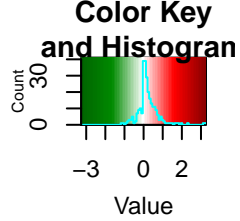
Cancer



Bladder cancer hsa05219

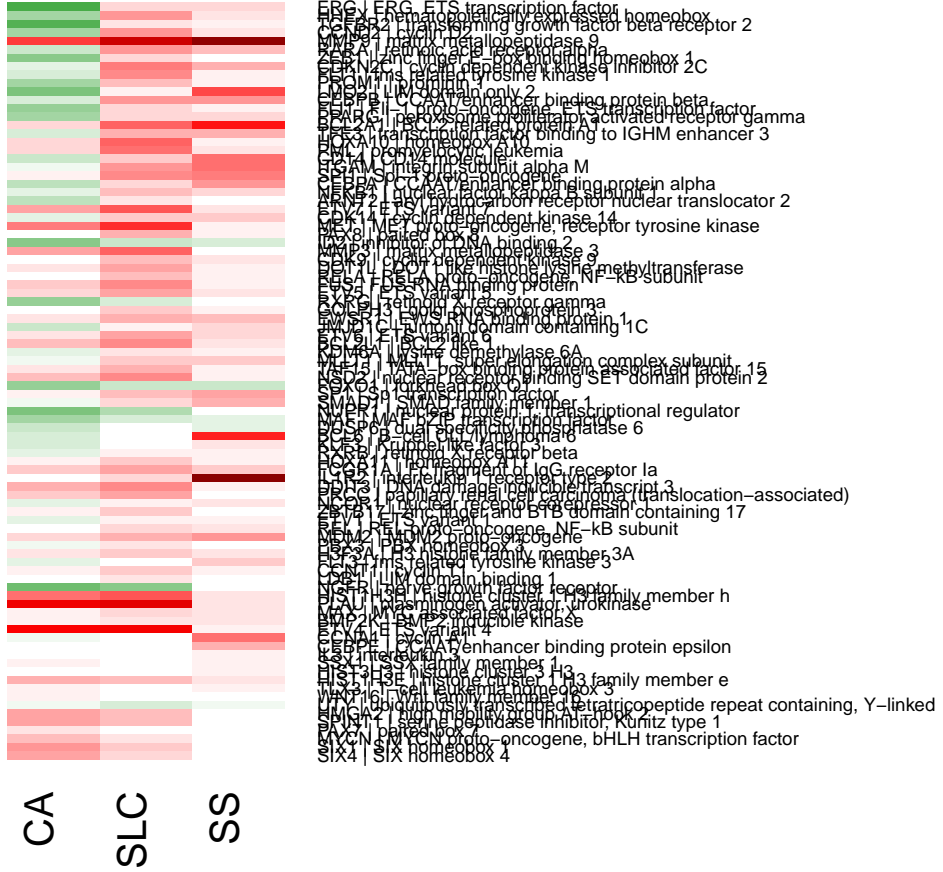


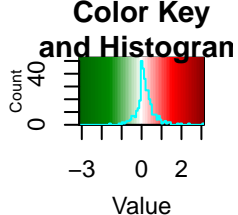
Cancer



Transcriptional misregulation in cancer

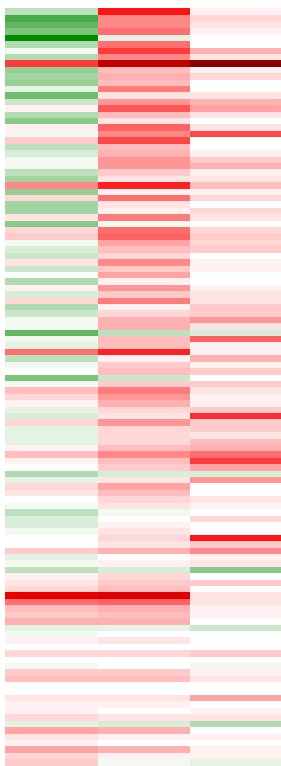
hsa05202





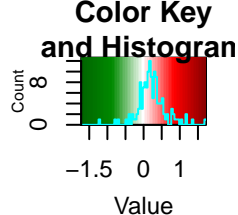
Proteoglycans in cancer

hsa05205

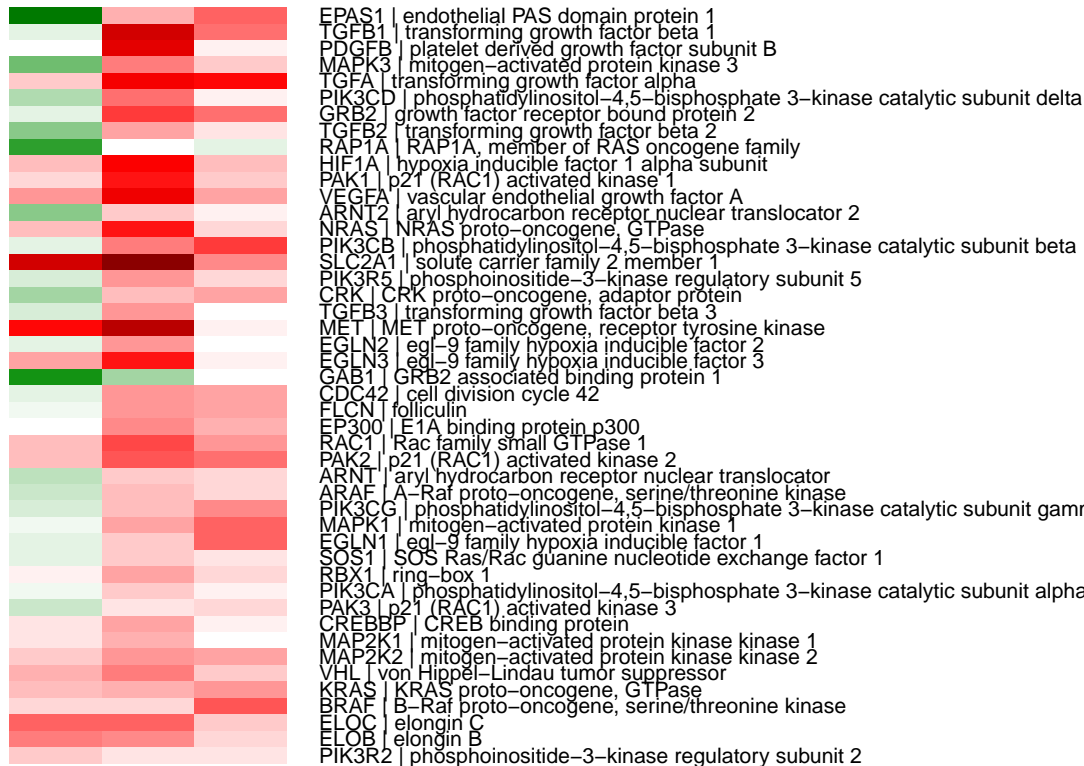


BTGA5 | integrin subunit alpha 5
BTGA6 | integrin subunit alpha 6
BTGA7 | integrin subunit alpha 7
BTGA8 | transforming growth factor beta 1
BTGA9 | mitogen-activated protein kinase 2
BTGA10 | insulin-like growth factor receptor
BTGA11 | protein kinase C beta
BTGA12 | protein kinase C delta
BTGA13 | epidermal growth factor receptor
BTGA14 | epidermal growth factor receptor
BTGA15 | epidermal growth factor receptor
BTGA16 | epidermal growth factor receptor
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BTGA18 | epidermal growth factor receptor
BTGA19 | epidermal growth factor receptor
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BTGA99 | epidermal growth factor receptor
BTGA100 | epidermal growth factor receptor

Cancer



Renal cell carcinoma hsa05211

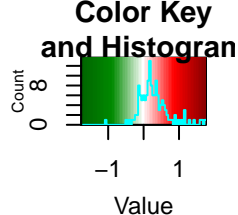


CA

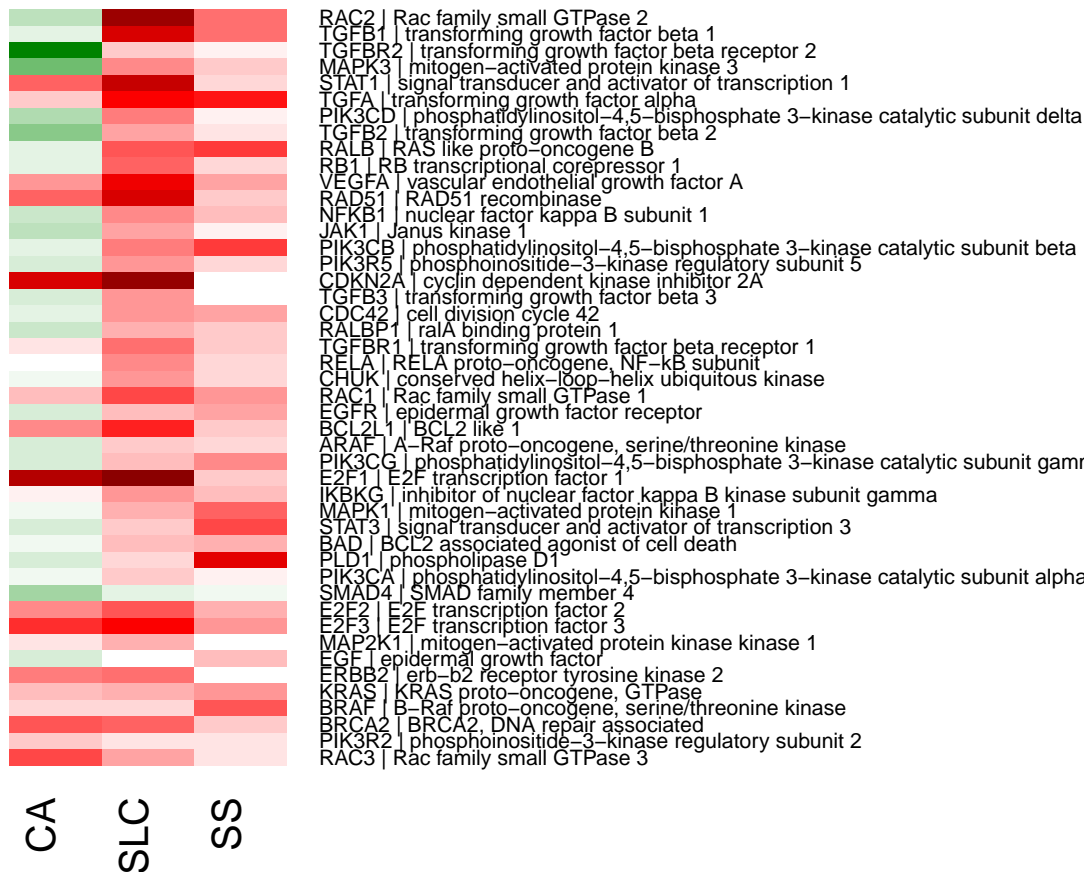
SLC

SS

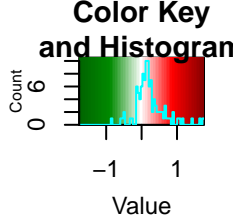
Cancer



Pancreatic cancer hsa05212



Cancer



Glioma hsa05214



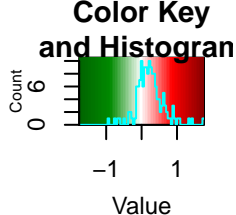
CA

SLC

SS

PDGFB | platelet derived growth factor subunit B
 PRKCB | protein kinase C beta
 MAPK3 | mitogen-activated protein kinase 3
 SHC1 | SHC adaptor protein 1
 TGFA | transforming growth factor alpha
 PIK3CD | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
 GRB2 | growth factor receptor bound protein 2
 PLCG2 | phospholipase C gamma 2
 CAMK2G | calcium/calmodulin dependent protein kinase II gamma
 RB1 | RB transcriptional corepressor 1
 NRAS | NRAS proto-oncogene, GTPase
 PIK3CB | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
 PIK3R5 | phosphoinositide-3-kinase regulatory subunit 5
 CDKN2A | cyclin dependent kinase inhibitor 2A
 EGFR | epidermal growth factor receptor
 ARAF | A-Raf proto-oncogene, serine/threonine kinase
 PIK3CG | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma
 PTEN | phosphatase and tensin homolog
 E2F1 | E2F transcription factor 1
 MAPK1 | mitogen-activated protein kinase 1
 SOS1 | SOS Ras/Rac guanine nucleotide exchange factor 1
 PIK3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
 MDM2 | MDM2 proto-oncogene
 E2F2 | E2F transcription factor 2
 SHC3 | SHC adaptor protein 3
 E2F3 | E2F transcription factor 3
 MAP2K1 | mitogen-activated protein kinase kinase 1
 MAP2K2 | mitogen-activated protein kinase kinase 2
 EGF | epidermal growth factor
 SHC2 | SHC adaptor protein 2
 SHC4 | SHC adaptor protein 4
 PRKCG | protein kinase C gamma
 KRAS | KRAS proto-oncogene, GTPase
 BRAF | B-Raf proto-oncogene, serine/threonine kinase
 PIK3R2 | phosphoinositide-3-kinase regulatory subunit 2
 CALML3 | calmodulin like 3

Cancer



Prostate cancer hsa05215



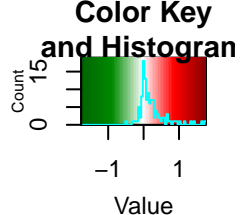
CA

SLC

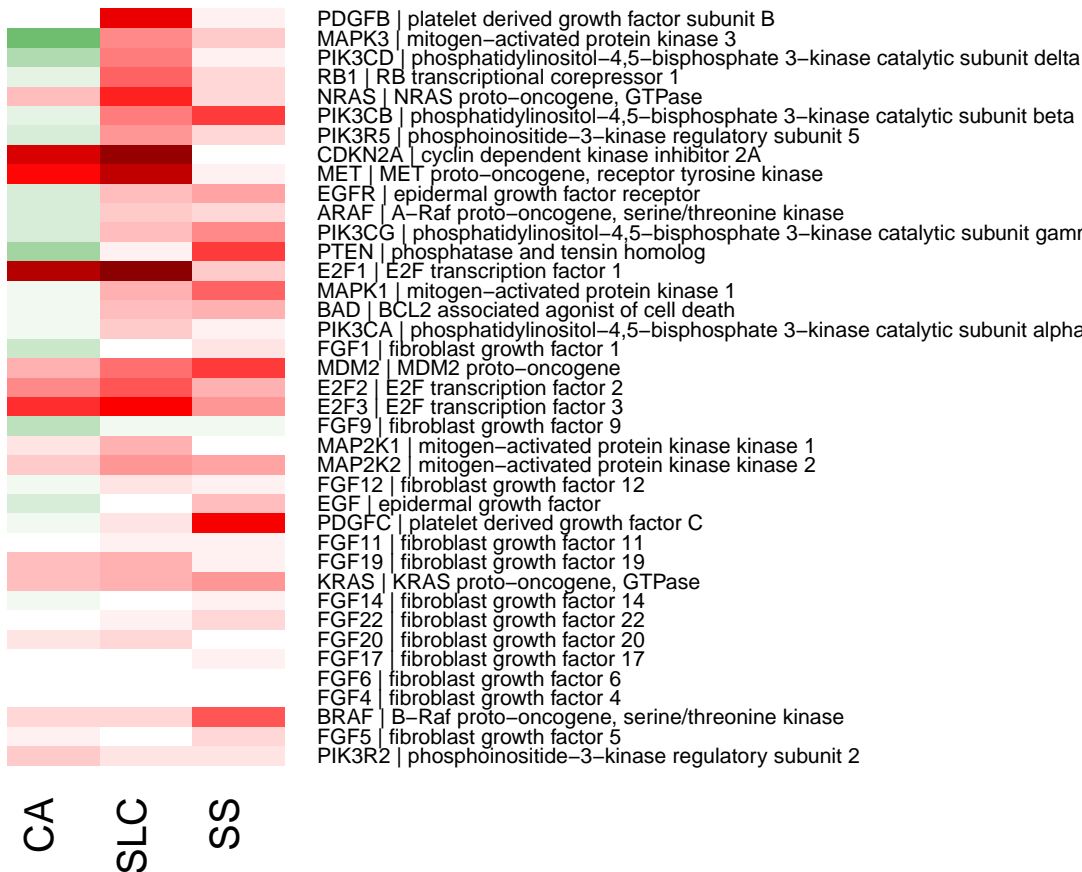
SS

TCF7L1 | transcription factor 7 like 1
 PDGFB | platelet derived growth factor subunit B
 NFKB1A | NF-kB inhibitor alpha
 MAPK3 | mitogen-activated protein kinase 3
 TGF- α | transforming growth factor alpha
 BCL2 | BCL2, apoptosis regulator
 PIK3CD | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
 CTNNB1 | catenin beta 1
 GRB2 | growth factor receptor bound protein 2
 TCF7L2 | transcription factor 7 like 2
 POU1F1 | transcriptional corepressor 1
 NFKB1 | nuclear factor kappa B subunit 1
 NRAS | NRAS proto-oncogene, GTPase
 PIK3CB | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
 PIK3R5 | phosphoinositide-3-kinase regulatory subunit 5
 CREB3 | cAMP responsive element binding protein 3
 CREB3L2 | cAMP responsive element binding protein 3 like 2
 RELA | RELA proto-oncogene, NF-kB subunit
 E2F1 | E2F transcription factor 1
 E1A | E1A binding protein p300
 CHUK | conserved helix-loop-helix ubiquitous kinase
 EGFR | epidermal growth factor receptor
 ARAF | A-Raf proto-oncogene, serine/threonine kinase
 PIK3CG | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma
 PTEN | phosphatase and tensin homolog
 E2F1 | E2F transcription factor 1
 IKKKG | inhibitor of nuclear factor kappa B kinase subunit gamma
 FOXO1 | forkhead box O1
 MAPK1 | mitogen-activated protein kinase 1
 SOS1 | SOS Ras/Rac guanine nucleotide exchange factor 1
 BAD | BCL2 associated agonist of cell death
 CCNE1 | cyclin E1
 CDK2 | cyclin dependent kinase 2
 PIK3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
 CREB5 | cAMP responsive element binding protein 5
 MDM2 | MDM2 proto-oncogene
 E2F1 | E2F transcription factor 1
 E2F2 | E2F transcription factor 2
 GSK3B | glycogen synthase kinase 3 beta
 PIK3R4 | phosphoinositide dependent protein kinase 1
 OREBP | CREB binding protein
 E2F3 | E2F transcription factor 3
 MAP2K1 | mitogen-activated protein kinase kinase 1
 MAP2K2 | mitogen-activated protein kinase kinase 2
 EGF | epidermal growth factor
 PDGFC | platelet derived growth factor C
 ERBB2 | erb-b2 receptor tyrosine kinase 2
 CCNE2 | cyclin E2
 KRAS | KRAS proto-oncogene, GTPase
 BRAF | B-Raf proto-oncogene, serine/threonine kinase
 PIK3R2 | phosphoinositide-3-kinase regulatory subunit 2

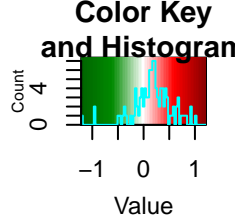
Cancer



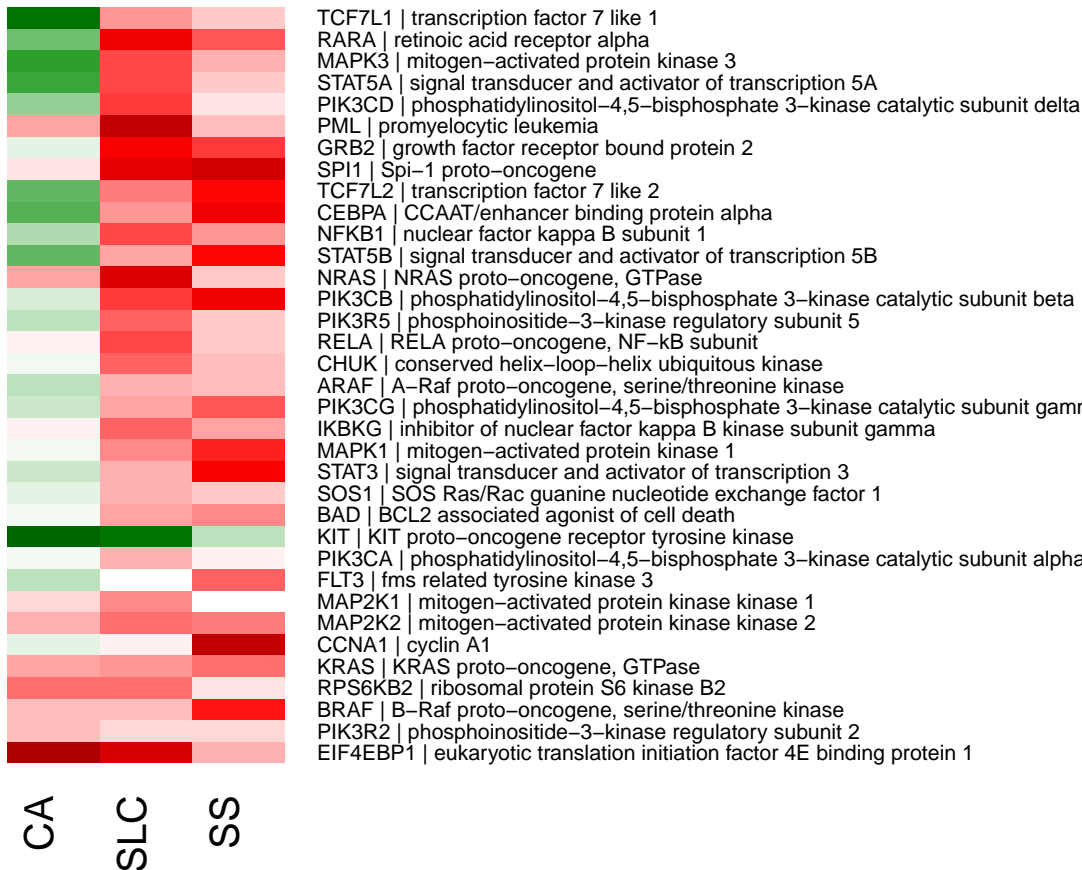
Melanoma hsa05218



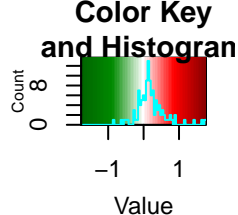
Cancer



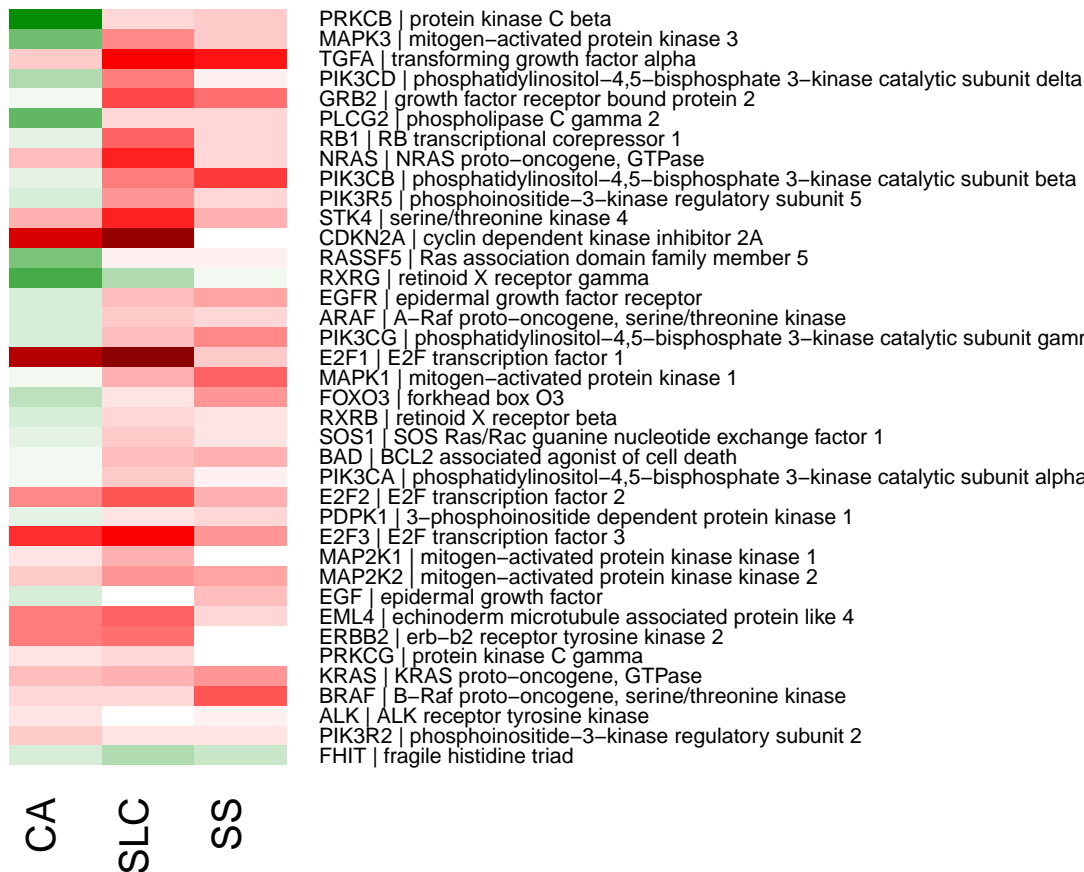
Acute myeloid leukemia hsa05221



Cancer



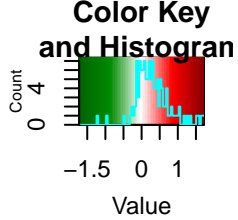
Non-small cell lung cancer hsa05223



Cancer

Central carbon metabolism in cancer

hsa05230



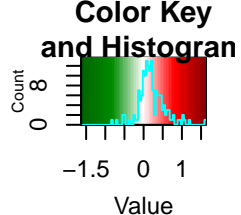
CA

SLC

SS

HKDC1 | hexokinase domain containing 1
 MAPK3 | mitogen-activated protein kinase 3
 PIK3CD | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
 HIF1A | hypoxia inducible factor 1 alpha subunit
 SLC1A5 | solute carrier family 1 member 5
 SLC16A3 | solute carrier family 16 member 3
 NRAS | NRAS proto-oncogene, GTPase
 PIK3CB | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
 SLC2A1 | solute carrier family 2 member 1
 HK2 | hexokinase 2
 PIK3R5 | phosphoinositide-3-kinase regulatory subunit 5
 MET | MET proto-oncogene, receptor tyrosine kinase
 EGFR | epidermal growth factor receptor
 SIRT6 | sirtuin 6
 PIK3CG | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma
 PTEN | phosphatase and tensin homolog
 G6PD | glucose-6-phosphate dehydrogenase
 TIGAR | TP53 induced glycolysis regulatory phosphatase
 MAPK1 | mitogen-activated protein kinase 1
 FGFR3 | fibroblast growth factor receptor 3
 HK3 | hexokinase 3
 KIT | KIT proto-oncogene receptor tyrosine kinase
 PIK3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
 PKM | pyruvate kinase M1/2
 SCO2 | SCO2, cytochrome c oxidase assembly protein
 FLT3 | fms related tyrosine kinase 3
 PGAM1 | phosphoglycerate mutase 1
 MAP2K1 | mitogen-activated protein kinase kinase 1
 MAP2K2 | mitogen-activated protein kinase kinase 2
 NTRK3 | neurotrophic receptor tyrosine kinase 3
 PFKM | phosphofructokinase, muscle
 SIRT3 | sirtuin 3
 ERBB2 | erb-b2 receptor tyrosine kinase 2
 LDHA | lactate dehydrogenase A
 KRAS | KRAS proto-oncogene, GTPase
 IDH1 | isocitrate dehydrogenase (NADP(+)) 1, cytosolic
 PIK3R2 | phosphoinositide-3-kinase regulatory subunit 2
 PDHA1 | pyruvate dehydrogenase E1 alpha 1 subunit
 PDHB | pyruvate dehydrogenase E1 beta subunit
 GLS2 | glutaminase 2
 SLC7A5 | solute carrier family 7 member 5

Cancer



Choline metabolism in cancer

hsa05231



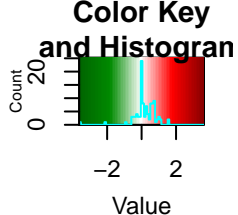
CA

SLC

SS

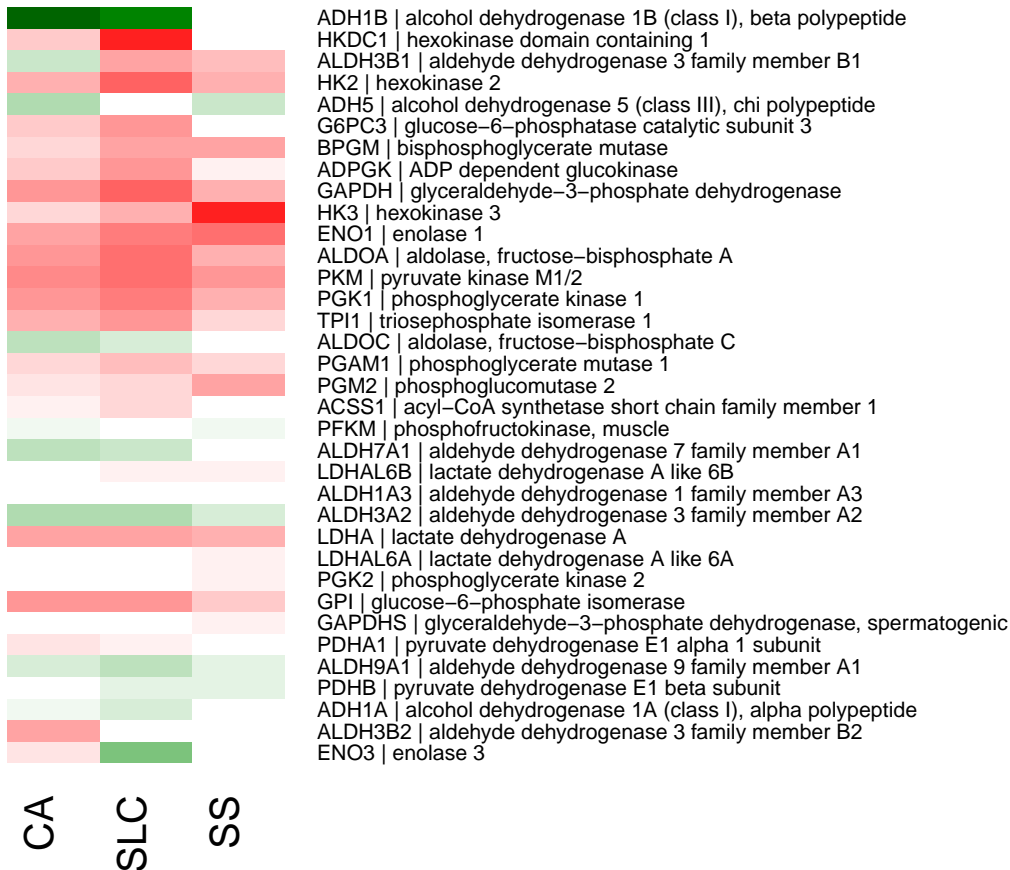
RAC2 | Rac family small GTPase 2
 DC2A4 | solute carrier family 44 member 4
 RGCB | protein kinase C beta
 SLC22A4 | solute carrier family 22 member 4
 MAPK3 | mitogen-activated protein kinase 3
 PIP5K1B | phosphatidylinositol-4-phosphate 5-kinase type 1 beta
 A2G4A | phospholipase A2 group IVA
 SLC44A1 | solute carrier family 44 member 1
 GRK3CD | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
 GRB2 | growth factor receptor bound protein 2
 HIF1A | hypoxia inducible factor 1 alpha subunit
 KIF5A | kinesin family class I member 5A
 WASF2 | WAS protein family member 2
 WAS | Wiskott-Aldrich syndrome
 PI3K3CB | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
 PI3K3R5 | phosphoinositide-3-kinase regulatory subunit 5
 SLC44A3 | solute carrier family 44 member 3
 GPCPD1 | glycerophosphocholine phosphodiesterase 1
 SLC44A5 | solute carrier family 44 member 5
 HEB | Ras homolog m QRC1 binding
 RAC1 | Rac family small GTPase 1
 EGFR | epidermal growth factor receptor
 DGKH | diacylglycerol kinase eta
 PI3K3CG | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma
 SP1 | transcription factor
 MAPK1 | mitogen-activated protein kinase 1
 PI3K3D | phosphoinositide 3-kinase
 SOS1 | SOS Ras/Rac guanine nucleotide exchange factor 1
 PI3K3A | phosphatidylinositol-4-phosphate 5-kinase type 1 alpha
 PI3K3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
 DGKG | diacylglycerol kinase gamma
 PDK1 | 3-phosphoinositide dependent protein kinase 1
 MAP2K1 | mitogen-activated protein kinase kinase 1
 MAP2K2 | mitogen-activated protein kinase kinase 2
 EGF | epidermal growth factor
 WASL | Wiskott-Aldrich syndrome like
 SLC22A5 | solute carrier family 22 member 5
 DGKI | diacylglycerol kinase iota
 WASE1 | WAS protein family member 1
 PDGEC | platelet derived growth factor C
 PCYT1B | phosphate cytidylyltransferase 1, choline, beta
 PRKCG | protein kinase C gamma
 KRAS | KRAS proto-oncogene, GTPase
 RPS6KB2 | ribosomal protein S6 kinase B2
 ESCR2 | ESC complex subunit 2
 PI3K3R2 | phosphoinositide-3-kinase regulatory subunit 2
 EIF4EBP1 | eukaryotic translation initiation factor 4E binding protein 1
 LYPLA1 | lysophospholipase I
 RAC3 | Rac family small GTPase 3

Cancer

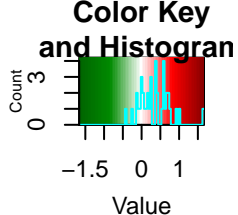


Glycolysis / Gluconeogenesis

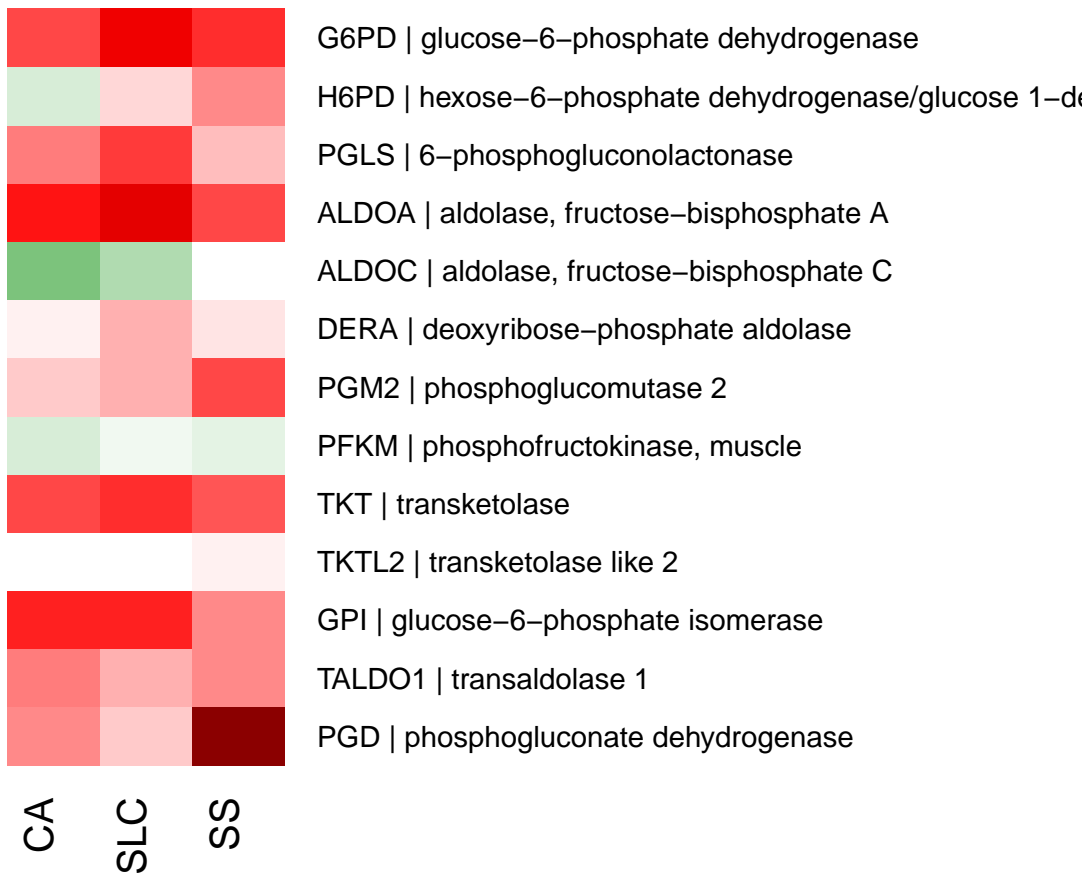
hsa00010



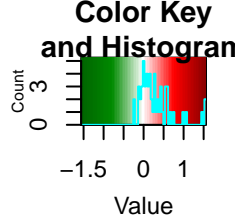
Carbohydrate metabolism



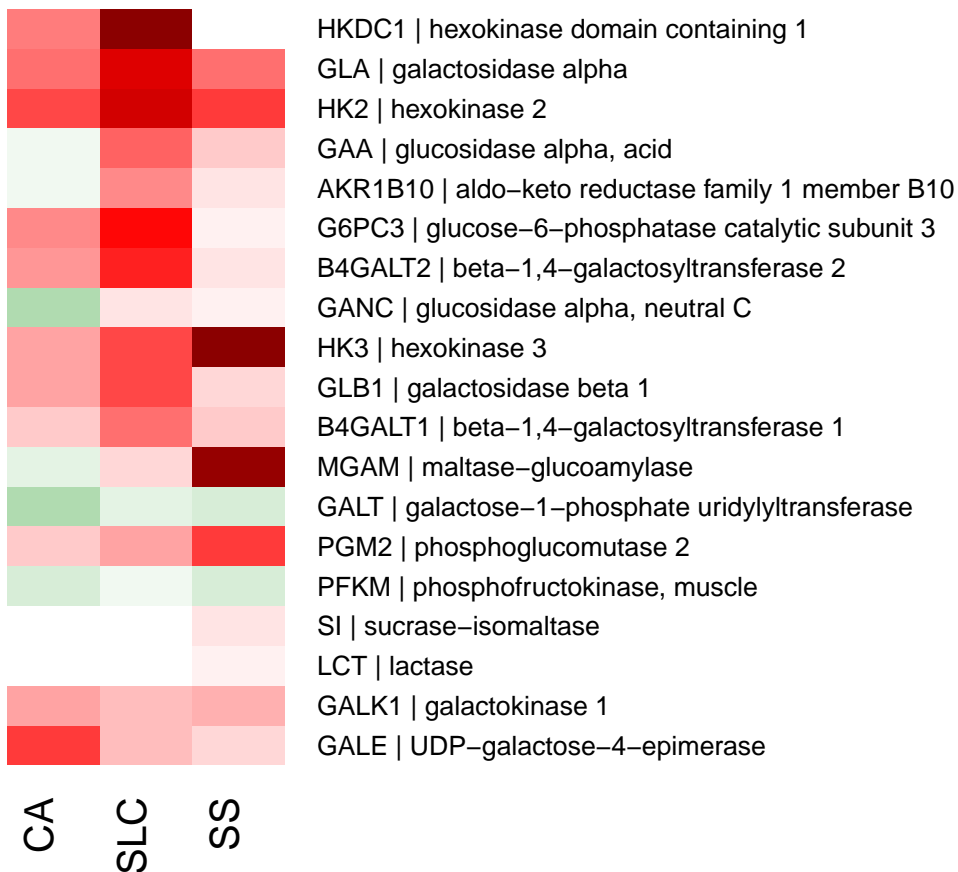
Pentose phosphate pathway hsa00030



Carbohydrate metabolism

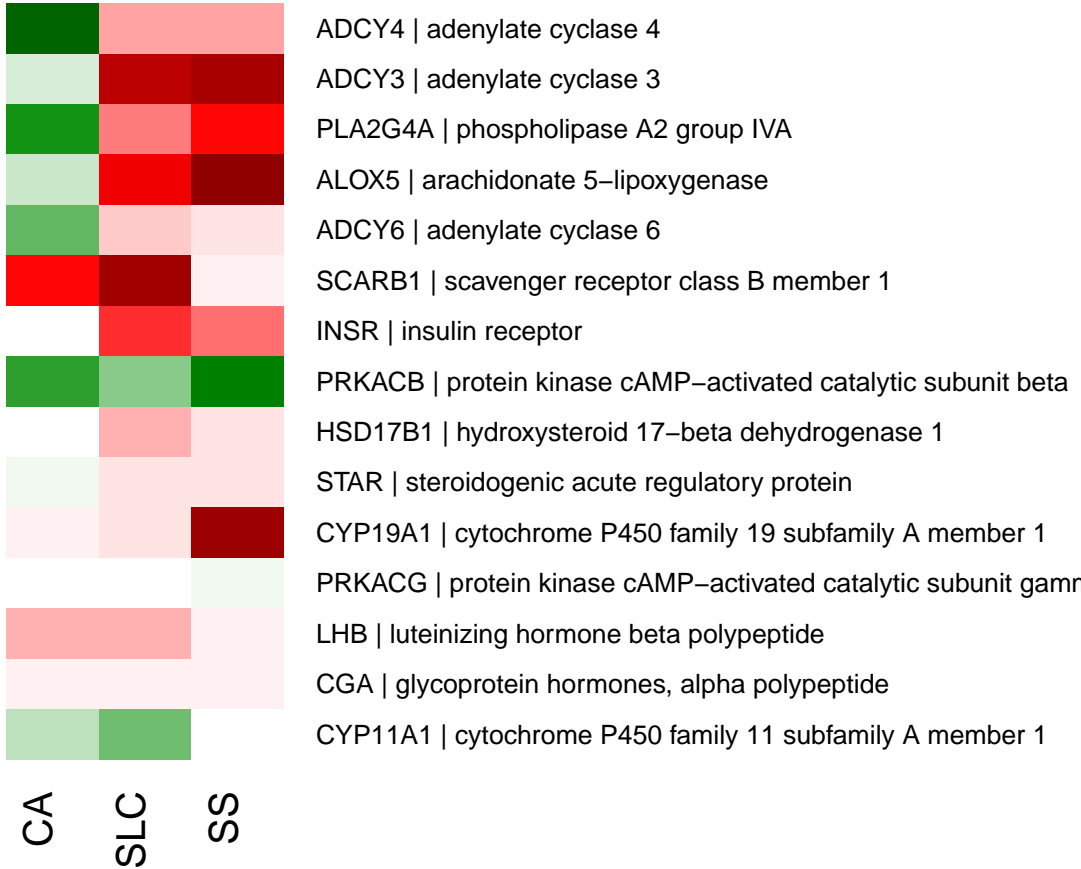
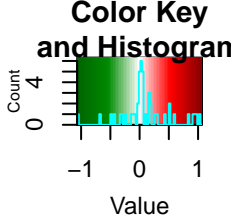


Galactose metabolism hsa00052

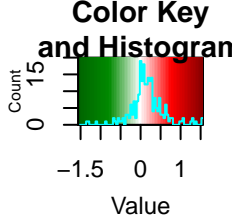


Carbohydrate metabolism

Ovarian steroidogenesis hsa04913

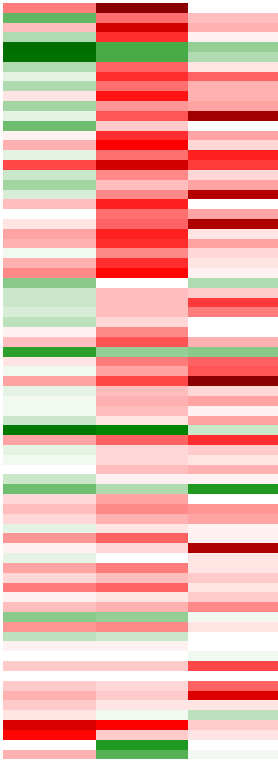


Endocrine system



Insulin signaling pathway

hsa04910



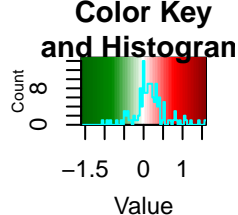
CA

SLC

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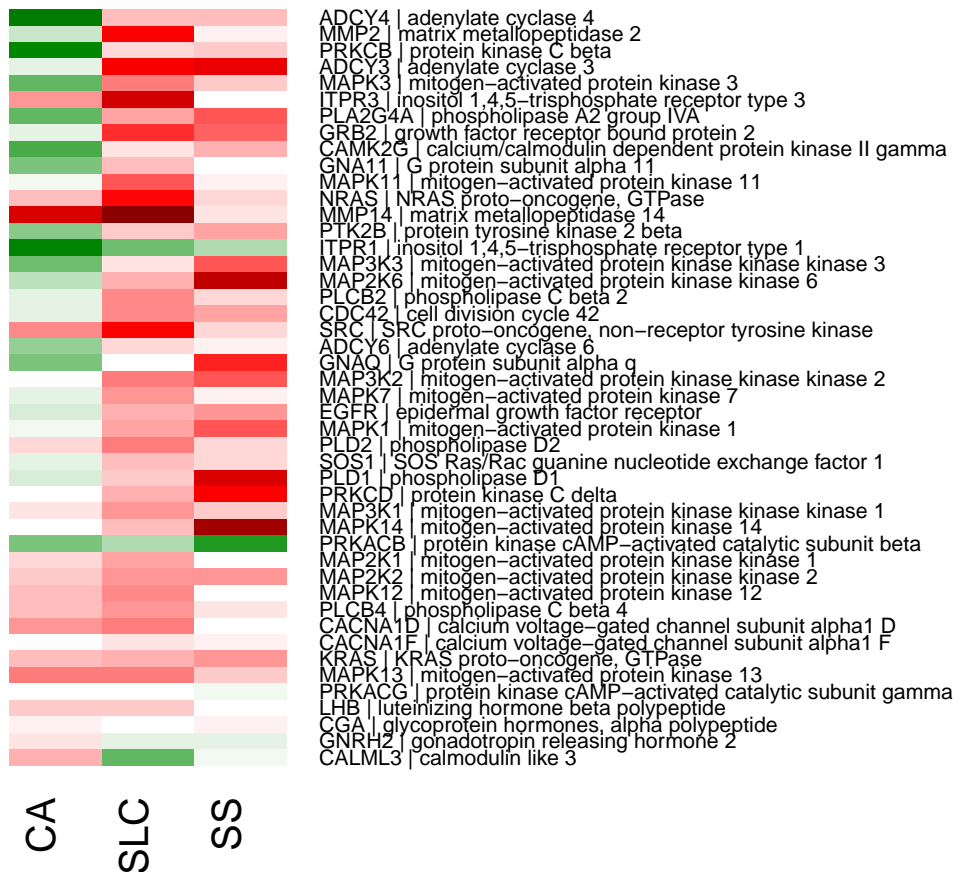
- HKDC1 | hexokinase domain containing 1
- MAPK3 | mitogen-activated protein kinase 3
- SH2B1 | SH2 domain containing protein 1
- SH2B2 | SH2 domain containing protein 2
- SH2B3 | SH2 domain containing protein 3
- SH2B4 | SH2 domain containing protein 4
- SH2B5 | SH2 domain containing protein 5
- SH2B6 | SH2 domain containing protein 6
- SH2B7 | SH2 domain containing protein 7
- SH2B8 | SH2 domain containing protein 8
- SH2B9 | SH2 domain containing protein 9
- SH2B10 | SH2 domain containing protein 10
- SH2B11 | SH2 domain containing protein 11
- SH2B12 | SH2 domain containing protein 12
- SH2B13 | SH2 domain containing protein 13
- SH2B14 | SH2 domain containing protein 14
- SH2B15 | SH2 domain containing protein 15
- SH2B16 | SH2 domain containing protein 16
- SH2B17 | SH2 domain containing protein 17
- SH2B18 | SH2 domain containing protein 18
- SH2B19 | SH2 domain containing protein 19
- SH2B20 | SH2 domain containing protein 20
- SH2B21 | SH2 domain containing protein 21
- SH2B22 | SH2 domain containing protein 22
- SH2B23 | SH2 domain containing protein 23
- SH2B24 | SH2 domain containing protein 24
- SH2B25 | SH2 domain containing protein 25
- SH2B26 | SH2 domain containing protein 26
- SH2B27 | SH2 domain containing protein 27
- SH2B28 | SH2 domain containing protein 28
- SH2B29 | SH2 domain containing protein 29
- SH2B30 | SH2 domain containing protein 30
- SH2B31 | SH2 domain containing protein 31
- SH2B32 | SH2 domain containing protein 32
- SH2B33 | SH2 domain containing protein 33
- SH2B34 | SH2 domain containing protein 34
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- SH2B36 | SH2 domain containing protein 36
- SH2B37 | SH2 domain containing protein 37
- SH2B38 | SH2 domain containing protein 38
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- SH2B43 | SH2 domain containing protein 43
- SH2B44 | SH2 domain containing protein 44
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- SH2B51 | SH2 domain containing protein 51
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- SH2B69 | SH2 domain containing protein 69
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- SH2B86 | SH2 domain containing protein 86
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- SH2B92 | SH2 domain containing protein 92
- SH2B93 | SH2 domain containing protein 93
- SH2B94 | SH2 domain containing protein 94
- SH2B95 | SH2 domain containing protein 95
- SH2B96 | SH2 domain containing protein 96
- SH2B97 | SH2 domain containing protein 97
- SH2B98 | SH2 domain containing protein 98
- SH2B99 | SH2 domain containing protein 99
- SH2B100 | SH2 domain containing protein 100

Endocrine system



GnRH signaling pathway

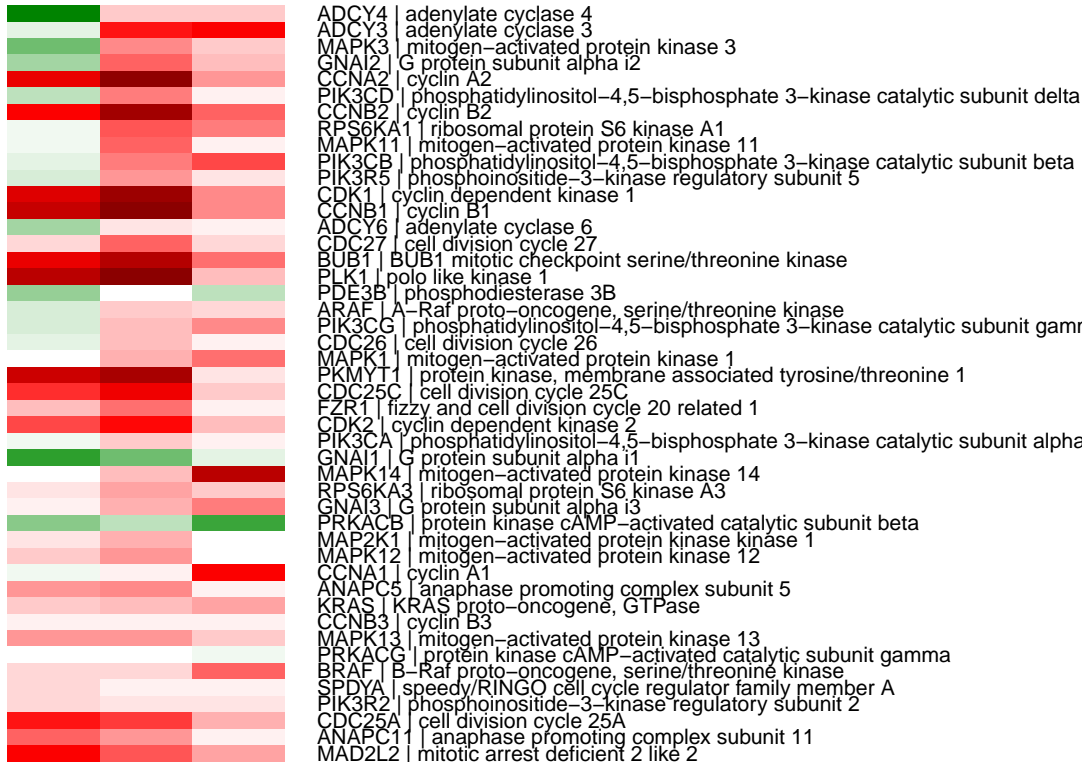
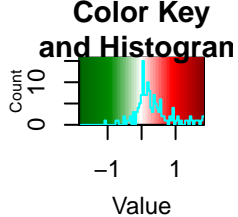
hsa04912



Endocrine system

Progesterone-mediated oocyte maturation

hsa04914

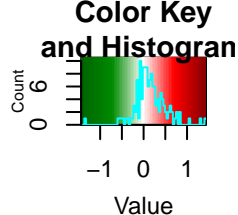


CA

SLC

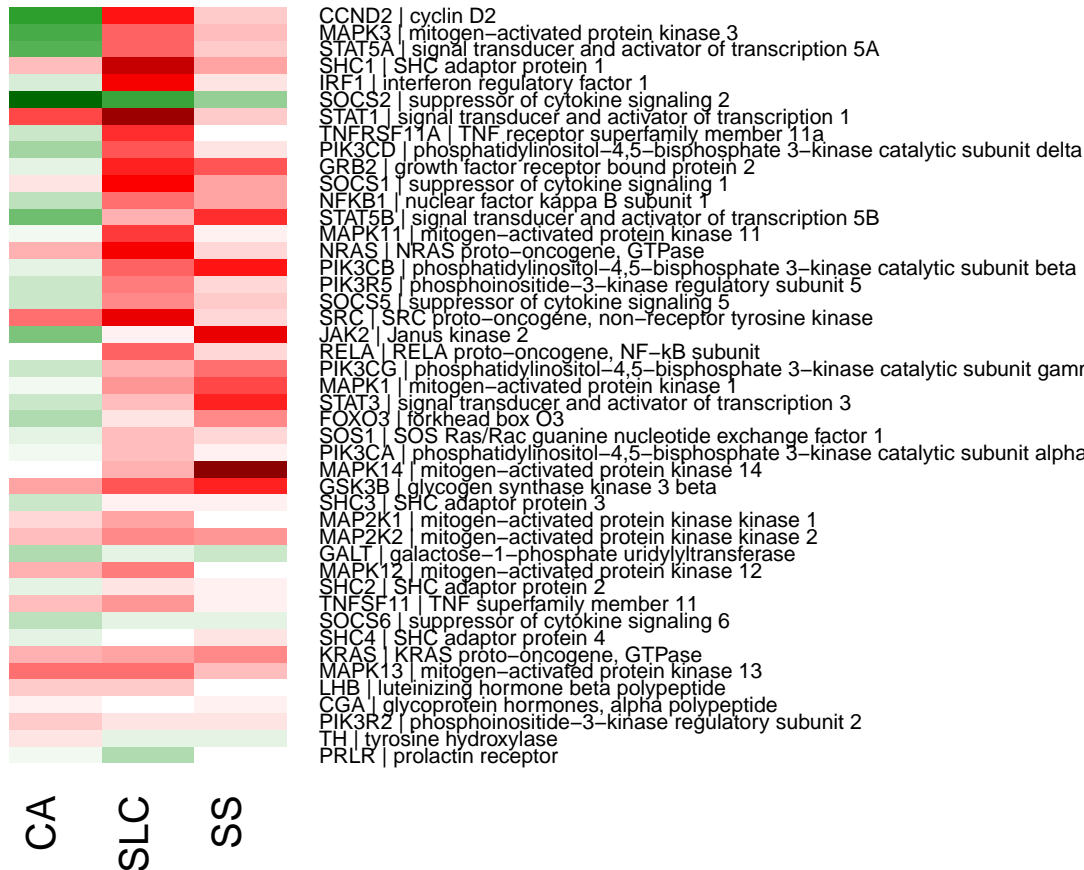
SS

Endocrine system

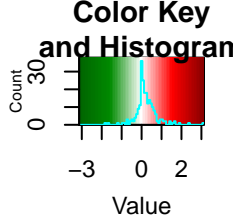


Prolactin signaling pathway

hsa04917

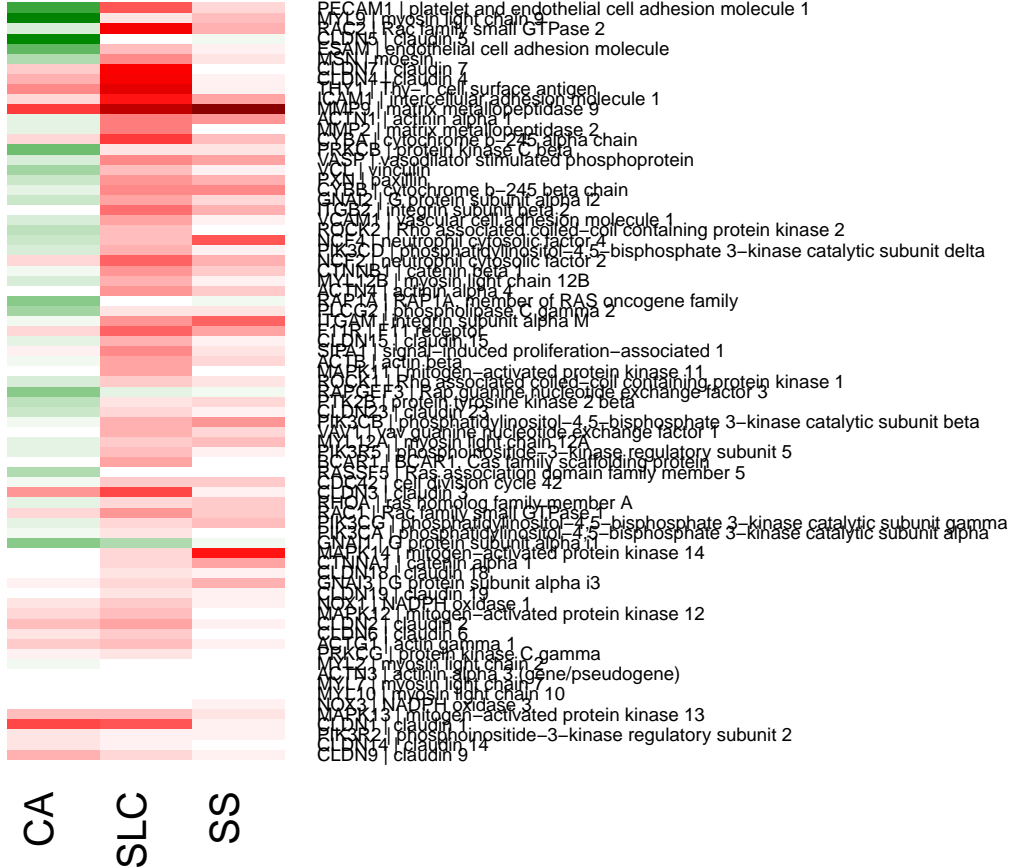


Endocrine system

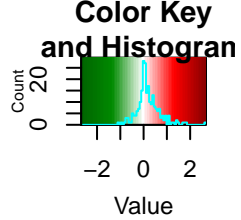


Leukocyte transendothelial migration

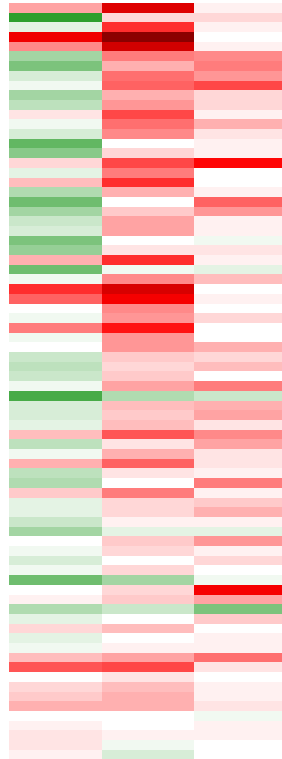
hsa04670



Immune system



Platelet activation hsa04611



CA

SLC

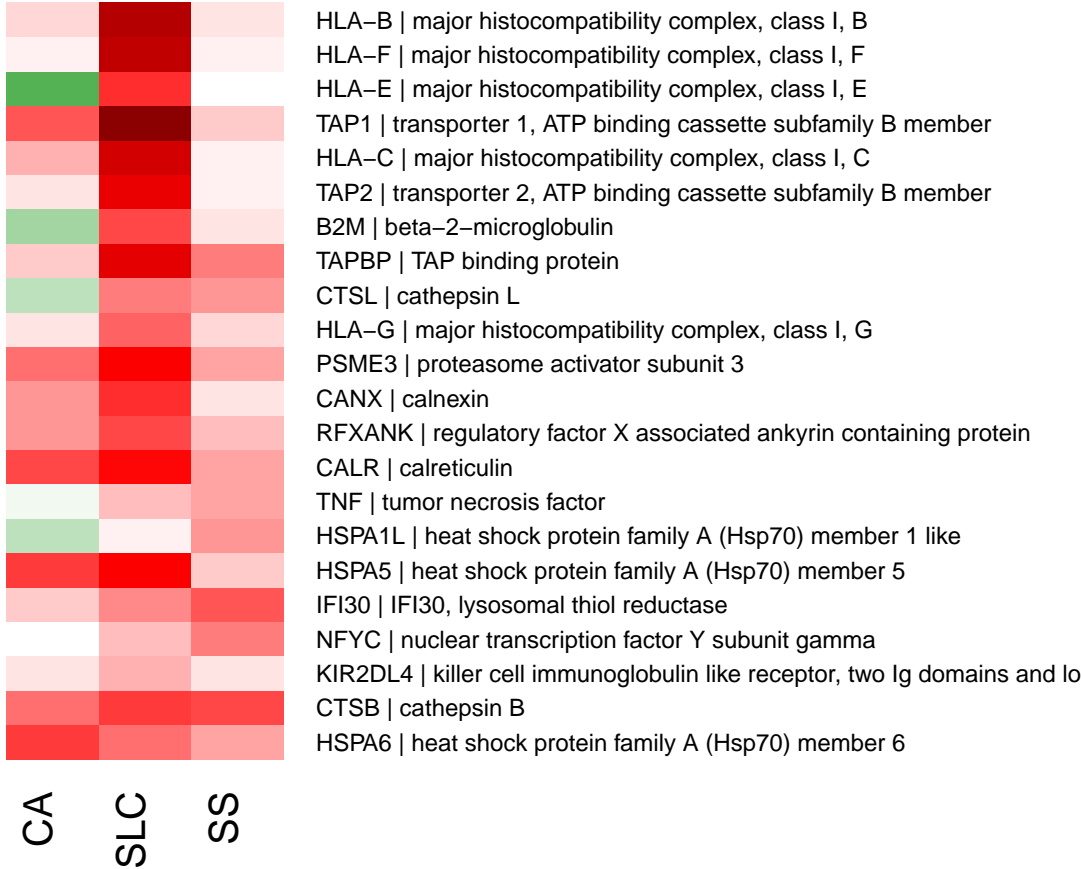
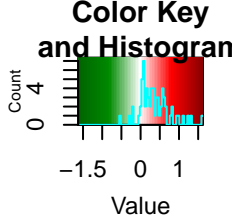
SS

COL1A2 | collagen type I alpha 2 chain
ADP1A1 | adenosine diphosphate
ADP1A2 | adenosine diphosphate
ADP1A3 | adenosine diphosphate
ADP1A4 | adenosine diphosphate
ADP1A5 | adenosine diphosphate
ADP1A6 | adenosine diphosphate
ADP1A7 | adenosine diphosphate
ADP1A8 | adenosine diphosphate
ADP1A9 | adenosine diphosphate
ADP1A10 | adenosine diphosphate
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ADP1A97 | adenosine diphosphate
ADP1A98 | adenosine diphosphate
ADP1A99 | adenosine diphosphate
ADP1A100 | adenosine diphosphate

Immune system

Antigen processing and presentation

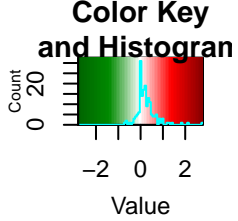
hsa04612



Immune system

Toll-like receptor signaling pathway

hsa04620



CA

SLC

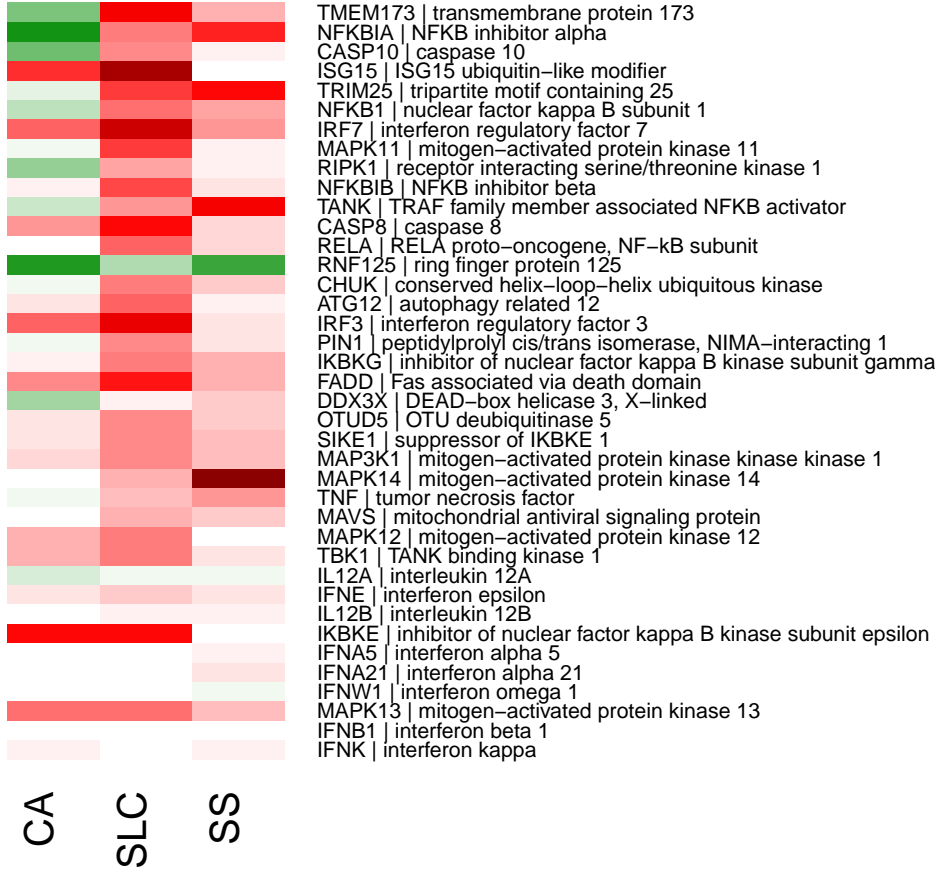
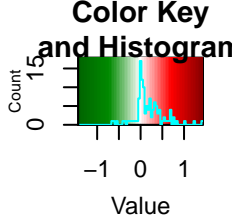
SS

- CXCL9 | C-X-C motif chemokine ligand 9
- NF-κB1 | nuclear factor kappa B
- NF-κB1 | NF-κB inhibitor alpha
- MAP3K8 | mitogen-activated protein kinase kinase kinase 8
- MAP3K3 | mitogen-activated protein kinase 3
- LY96 | lymphocyte antigen 96
- STAT1 | signal transducer and activator of transcription 1
- PIK3CD | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
- SPP1 | secreted phosphoprotein 1
- NFκB1 | nuclear factor kappa B subunit 1
- TLR3 | toll like receptor 3
- IRF7 | interferon regulatory factor 7
- MAPK11 | mitogen-activated protein kinase 11
- PIK3CB | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
- PIK3R5 | phosphoinositide-3-kinase regulatory subunit 5
- IL1B | interleukin 1 beta
- FNAR2 | interferon alpha and beta receptor subunit 2
- MAP2K6 | mitogen-activated protein kinase kinase 6
- CICAP1 | toll like receptor adaptor molecule 1
- CASP8 | caspase 8
- RELA | RELA proto-oncogene, NF-κB subunit
- CBLIK1 | conserved helix-loop-helix ubiquitous kinase
- IRF3 | interferon regulatory factor 3
- RAC1 | Rac family small GTPase 1
- TLR1 | toll like receptor 1
- PIK3CG | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma
- IKKγ | inhibitor of nuclear factor kappa B kinase subunit gamma
- TLR2 | toll like receptor 2
- MAPK1 | mitogen-activated protein kinase 1
- FADD | Fas associated via death domain
- FNAR1 | interferon alpha and beta receptor subunit 1
- CD80 | CD80 molecule
- MAP3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
- MAPK14 | mitogen-activated protein kinase 14
- TLR6 | toll like receptor 6
- TNF | tumor necrosis factor
- TLR8 | toll like receptor 8
- MAP2K2 | mitogen-activated protein kinase kinase 2
- MAPK12 | mitogen-activated protein kinase 12
- TAK1 | TAK1 binding kinase 1
- TIRAP | TIR domain-containing adaptor protein
- IL12A | interleukin 12A
- IL12B | interleukin 12B
- MYD88 | myeloid differentiation primary response 88
- IRAK4 | interleukin 1 receptor associated kinase 4
- TLR9 | toll like receptor 9
- IKKε | inhibitor of nuclear factor kappa B kinase subunit epsilon
- IFNA5 | interferon alpha 5
- IFNA21 | interferon alpha 21
- MAPK13 | mitogen-activated protein kinase 13
- IFNB1 | interferon beta
- CD14 | CD14 molecule
- PIK3R2 | phosphoinositide-3-kinase regulatory subunit 2

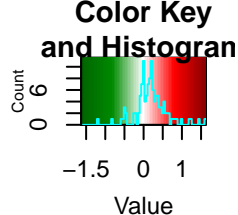
Immune system

RIG-I-like receptor signaling pathway

hsa04622

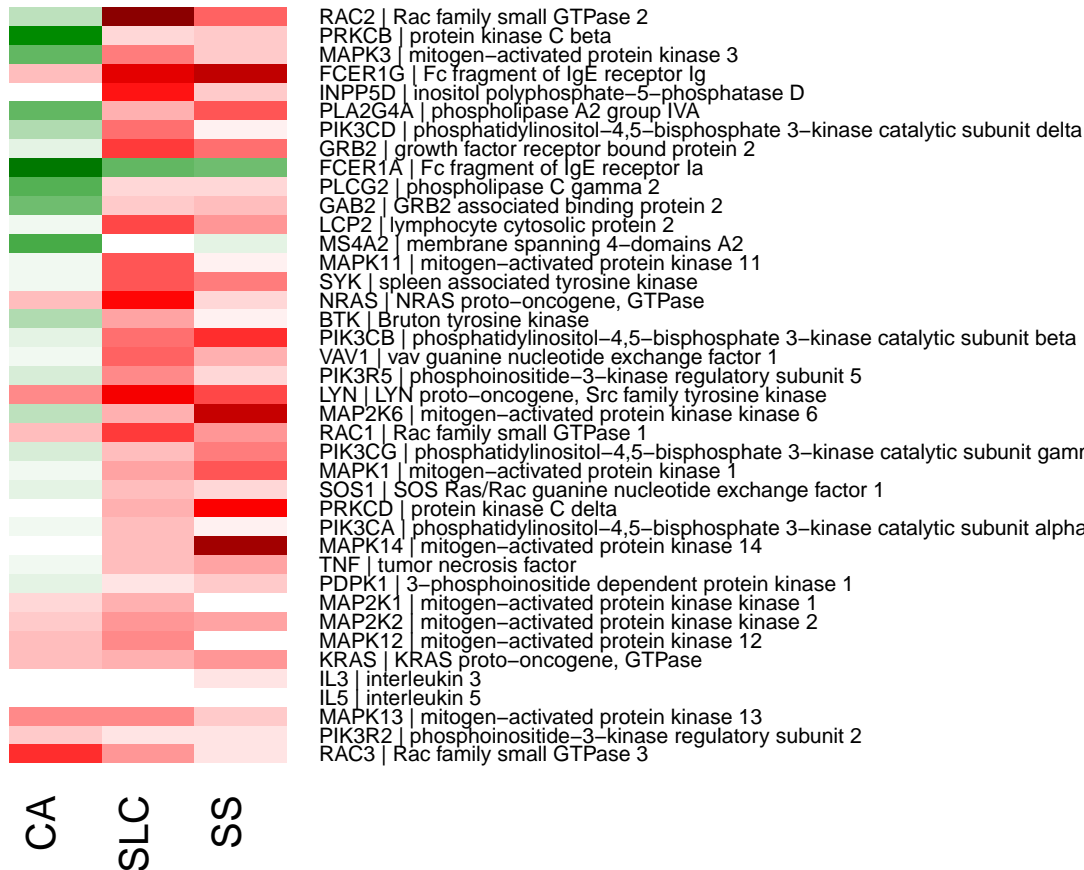


Immune system



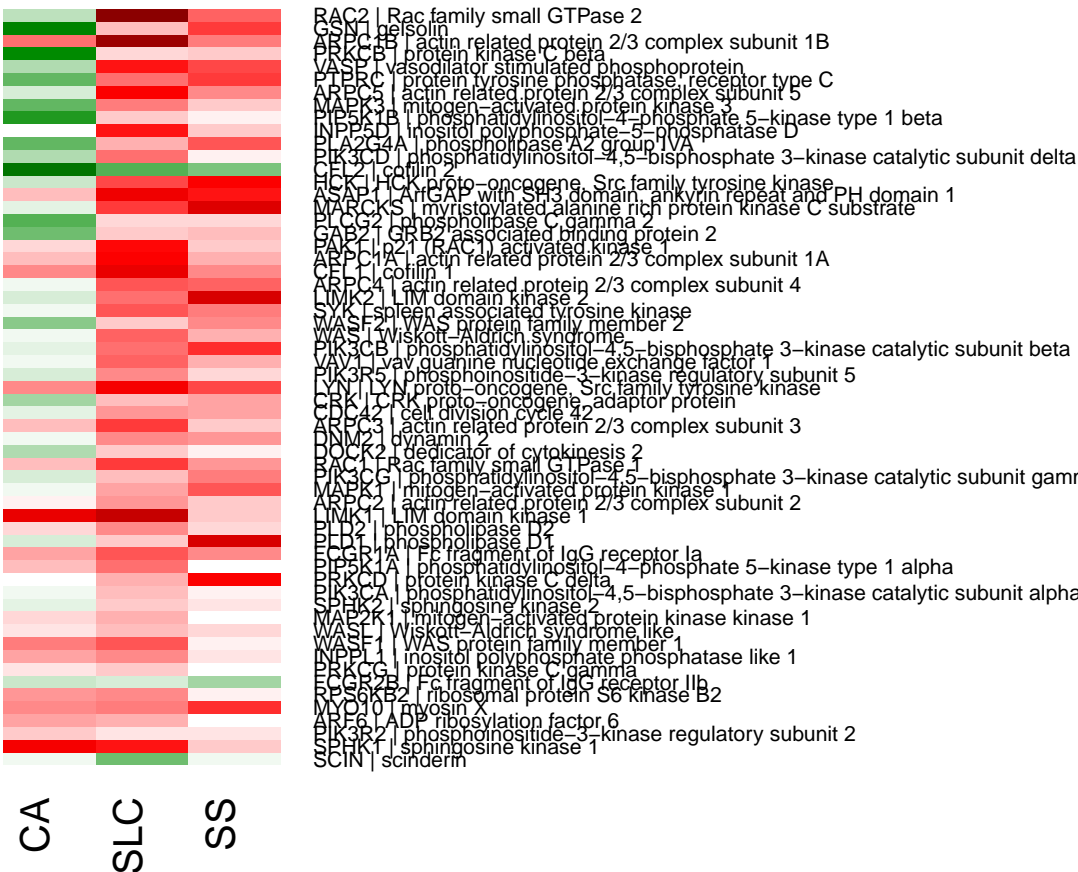
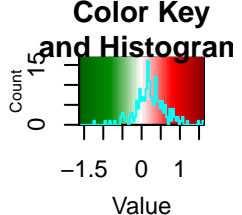
Fc epsilon RI signaling pathway

hsa04664



Immune system

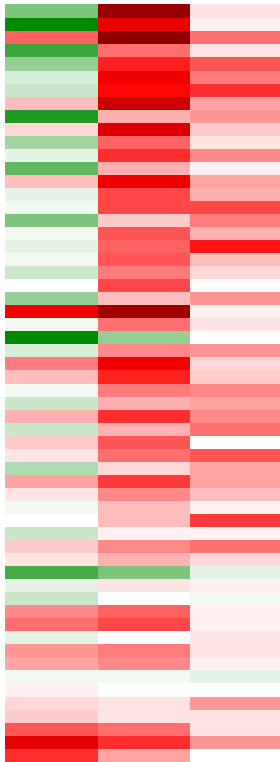
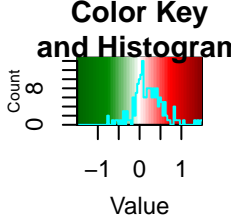
Fc gamma R-mediated phagocytosis hsa04666



Immune system

Bacterial invasion of epithelial cells

hsa05100



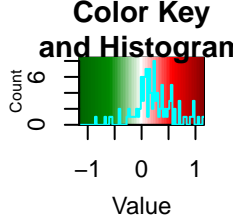
CA

SLC

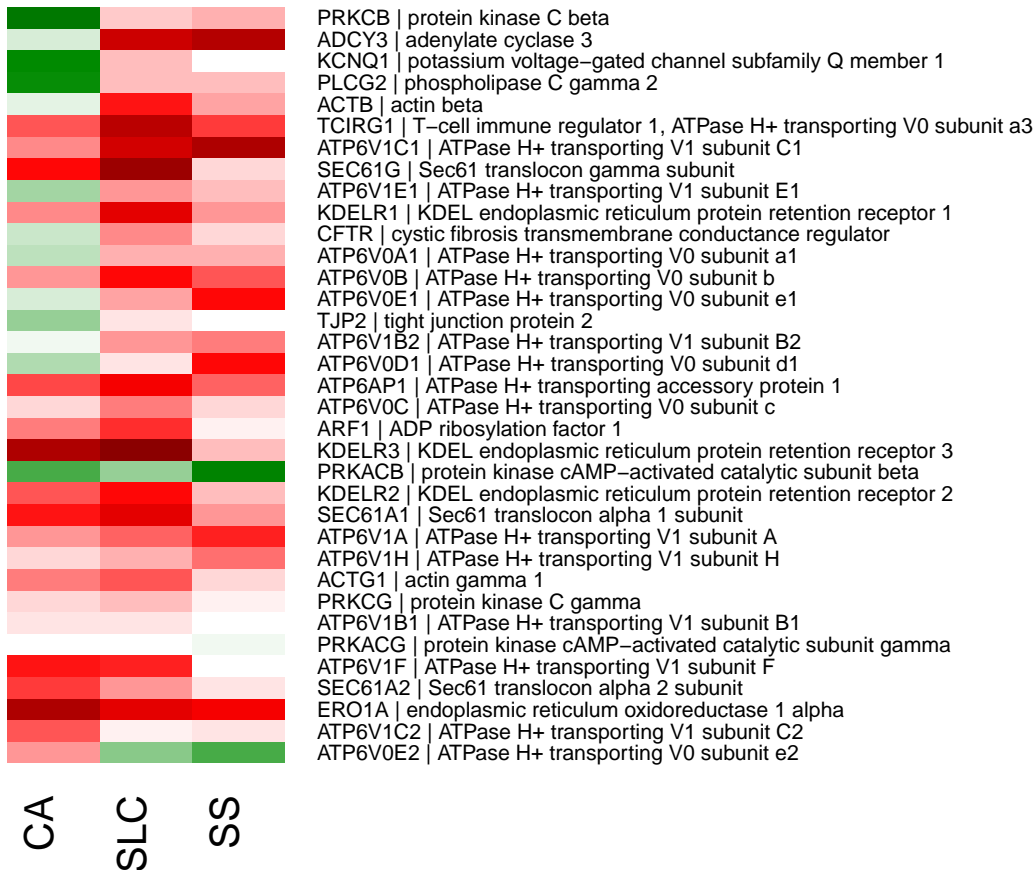
SS

ITGA5 | integrin subunit alpha 5
 PAV1 | pavelin
 ARPC1B | actin related protein 2/3 complex subunit 1B
 VCL | vinculin
 PXN | paxillin
 ARPC5 | actin related protein 2/3 complex subunit 5
 SHC1 | SHC adaptor protein 1
 LK1 | integrin linked kinase
 EN1 | fibronectin 1
 PIK3CD | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
 CENPB | catenin beta 1
 DOCK1 | mediator of cytokinesis 1
 ARPC1A | actin related protein 2/3 complex subunit 1A
 ACTB | actin beta
 ARPC4 | actin related protein 2/3 complex subunit 4
 WASF2 | WAS protein family member 2
 WASL | Wiskott-Aldrich syndrome
 PIK3CB | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
 LIC3B | hematopoietic cell-specific Lyn substrate 1
 PIK3B5 | phosphoinositide-3-kinase regulatory subunit 5
 BCAR1 | BCAR1, Cas family scaffolding protein
 CEK1 | CEK proto-oncogene, adaptor protein
 MEK1 | MEK1 proto-oncogene, receptor tyrosine kinase
 SEPT2 | septin 2
 GAB1 | GRB2 associated binding protein 1
 CDC42 | cell division cycle 42
 SRC | SRC proto-oncogene, non-receptor tyrosine kinase
 ARPC3 | actin related protein 2/3 complex subunit 3
 DNMC3 | dynamin 2
 HOA1 | ras homolog family member A
 BACT1 | Rac family small GTPase 1
 PIK3CG | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma
 CNM1 | dynamin 1
 CLIP1 | clathrin light chain B
 CLTB | clathrin light chain B
 CLTC | clathrin heavy chain
 ARPC2 | actin related protein 2/3 complex subunit 2
 PIK3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
 SHCN1 | catenin alpha
 SHC3 | SHC adaptor protein 3
 LMO2 | engulfment and cell motility 2
 WASL | Wiskott-Aldrich syndrome like
 ARHGAP10 | Rho GTPase activating protein 10
 DNMC3 | SHC adaptor protein 2
 CNM3 | dynamin 3
 CLTA | clathrin light chain A
 WASF1 | WAS protein family member 1
 SHC4 | SHC adaptor protein 4
 ALPG3 | actin gamma 1
 CEV3 | septin 3
 SEPT12 | septin 12
 CLTCL1 | clathrin heavy chain like 1
 PIK3R2 | phosphoinositide-3-kinase regulatory subunit 2
 LMO3 | engulfment and cell motility 3
 MAO3 | mitotic arrest deficient 2 like 2
 SEPT3 | septin 3

Infectious disease

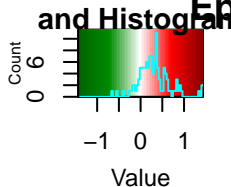


Vibrio cholerae infection hsa05110



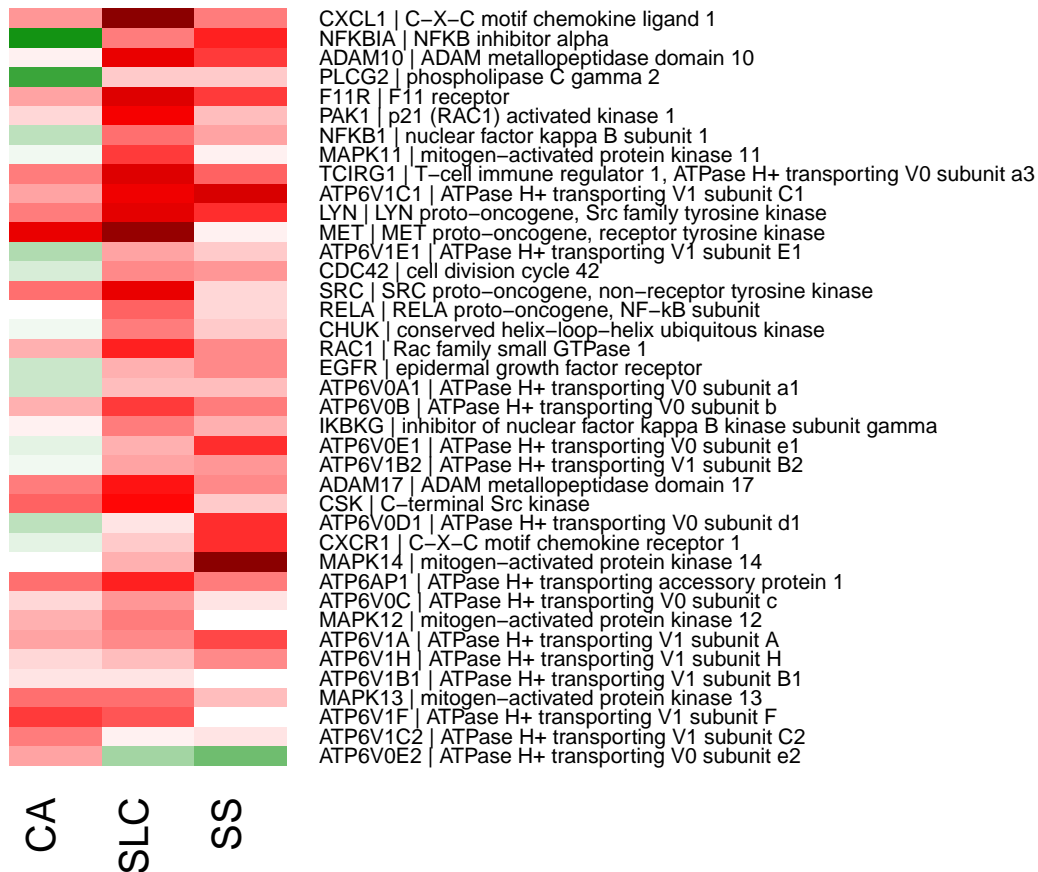
Infectious disease

Color Key and Histogram

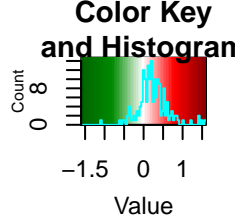


Epithelial cell signaling in *Helicobacter pylori* infection

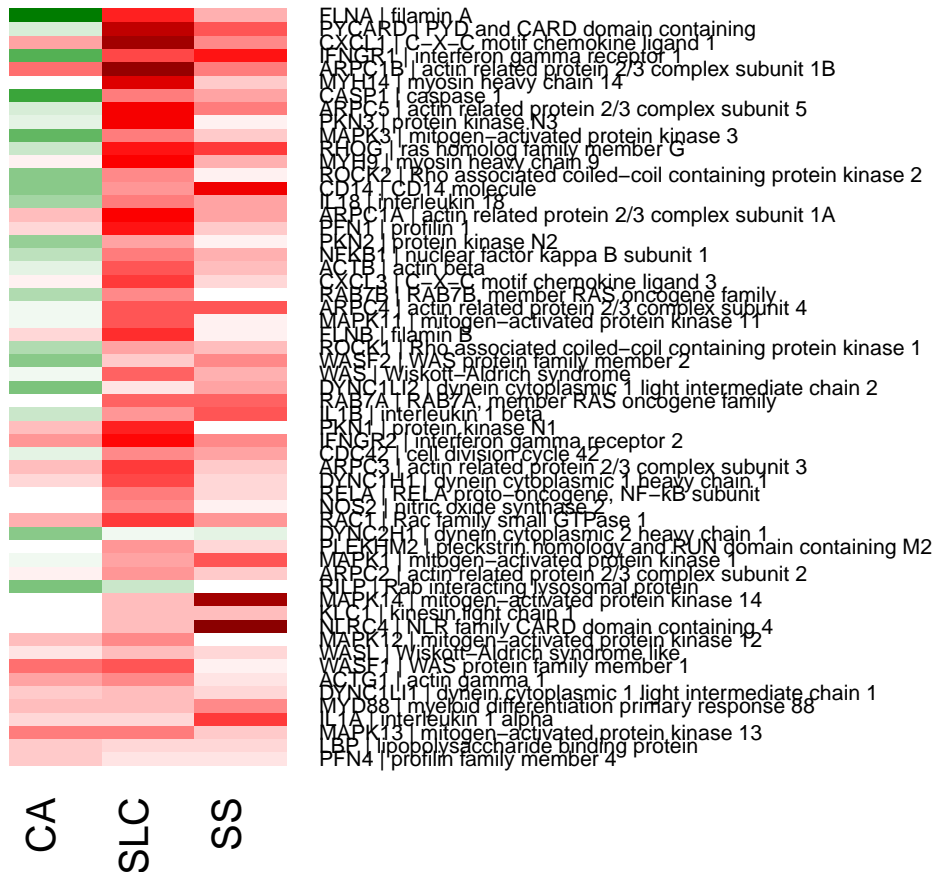
hsa05120



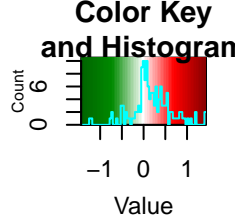
Infectious disease



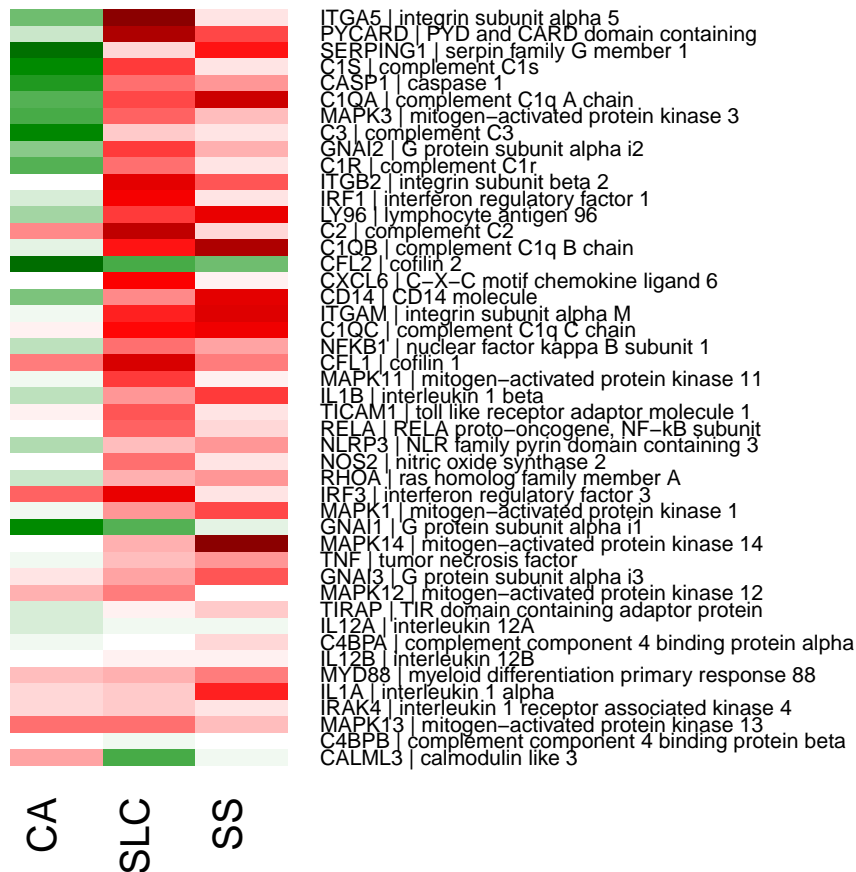
Salmonella infection hsa05132



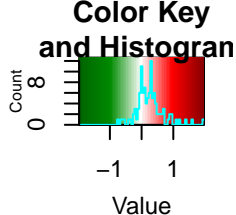
Infectious disease



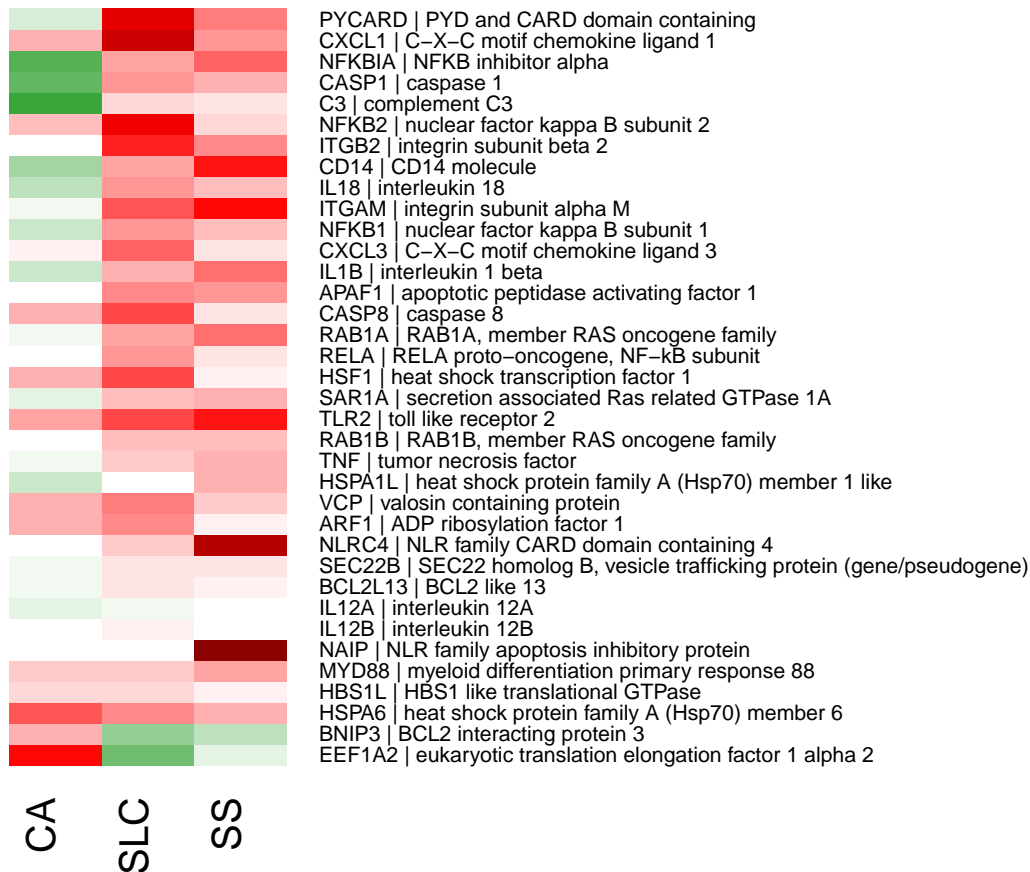
Pertussis hsa05133



Infectious disease



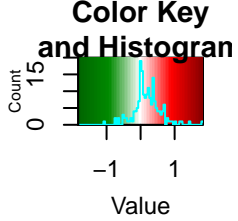
Legionellosis hsa05134



Infectious disease

Chagas disease (American trypanosomiasis)

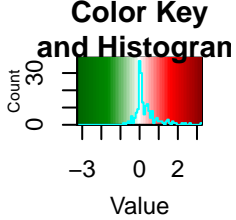
hsa05142



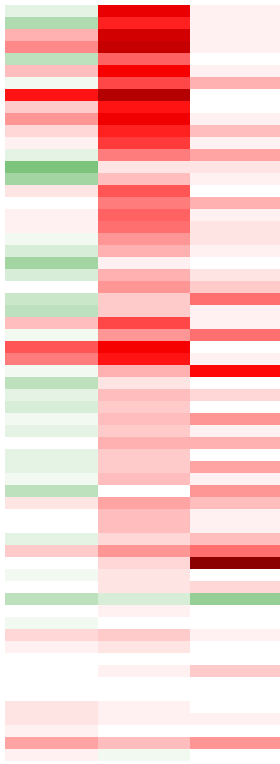
CA
SLC
SS

- SERPINE1 | serpin family E member 1
- IGFBP3 | transforming growth factor beta receptor 2
- IFNGR1 | interferon gamma receptor 1
- NFKBIA | NF-kB inhibitor alpha
- ACE1 | angiotensin I converting enzyme
- MAPK3 | mitogen-activated protein kinase 3
- C3 | complement C3
- GNAI2 | G protein subunit alpha i2
- CD35 | complement C3b receptor
- IGFBP2 | transforming growth factor beta 2
- CTOC1 | complement C3d, C chain
- GNAI1 | G protein subunit alpha i1
- MAPK11 | nuclear factor kappa B subunit 11
- INERSE1A | TNF receptor subfamily member 1A
- FAS | Fas cell surface death receptor
- CASP8 | CASP8 and FADD like apoptosis regulator
- ULK3 | phosphatidylinositol-3-kinase catalytic subunit beta
- PPP2CB | protein phosphatase 2 catalytic subunit beta
- IGFBP1 | transforming growth factor beta 3
- IL12B | interleukin 12 beta
- PLCB2 | phospholipase beta
- TICAM1 | toll like receptor adaptor molecule 1
- CASP8 | caspase 8
- GNAI3 | G protein subunit alpha i3
- IGFBP1 | transforming growth factor beta receptor 1
- REL A | REL A proto-oncogene, NF-kB subunit
- NOS2 | nitric oxide synthase 2
- ULK1 | conserved helix-loop-helix ubiquitous kinase
- ULK3 | phosphatidylinositol-3-kinase catalytic subunit gamma
- IKKGB | inhibitor of nuclear factor kappa B kinase subunit gamma
- TLR2 | toll like receptor
- MAPK1 | mitogen-activated protein kinase 1
- FADD | Fas associated via death
- ULK3 | phosphatidylinositol-3-kinase catalytic subunit alpha
- GNAI1 | G protein subunit alpha i1
- MAPK14 | mitogen-activated protein kinase 14
- CAR1 | calreticulin
- INF1 | interferon inducible factor
- GNAI3 | G protein subunit alpha i3
- MAPK12 | mitogen-activated protein kinase 12
- PPP2R2A | protein phosphatase 2 regulatory subunit Balpha
- PLCB4 | phospholipase C beta 4
- IL12B | interleukin 12 beta
- MYD88 | myeloid differentiation primary response, 88
- IKKAP1 | interleukin 1 receptor associated kinase 4
- MAPK13 | mitogen-activated protein kinase 13
- IFNG | interferon gamma
- ULK2 | phosphatidylinositol-3-kinase regulatory subunit 2
- GNAI2 | G protein subunit alpha i2
- PPP2R2C | protein phosphatase 2 regulatory subunit Bgamma

Infectious disease



Amoebiasis hsa05146

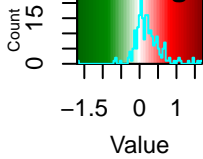


COL4A2	collagen type IV alpha 2 chain
LAMC1	laminin subunit gamma 1
COL4A1	collagen type IV alpha 1 chain
LAMC2	laminin subunit gamma 2
COL4A2	collagen type IV alpha 2 chain
GFBR4	transforming growth factor beta 1
COL1A1	collagen type I alpha 1 chain
AVB3	laminin subunit beta 3
COL1A1	collagen type I alpha 1 chain
CCDC1	C-C motif chemokine ligand 1
LAMC1	laminin subunit gamma 1
ACTA1	actinin alpha 1
VCKCB	vinculin protein kinase C beta
LAMB1	laminin subunit beta 1
IGFBP1	insulin-like growth factor binding protein 1
IGFBP2	insulin-like growth factor binding protein 2
IGFBP3	insulin-like growth factor binding protein 3
IGFBP4	insulin-like growth factor binding protein 4
IGFBP5	insulin-like growth factor binding protein 5
IGFBP6	insulin-like growth factor binding protein 6
IGFBP7	insulin-like growth factor binding protein 7
IGFBP8	insulin-like growth factor binding protein 8
IGFBP9	insulin-like growth factor binding protein 9
IGFBP10	insulin-like growth factor binding protein 10
IGFBP11	insulin-like growth factor binding protein 11
IGFBP12	insulin-like growth factor binding protein 12
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IGFBP98	insulin-like growth factor binding protein 98
IGFBP99	insulin-like growth factor binding protein 99
IGFBP100	insulin-like growth factor binding protein 100

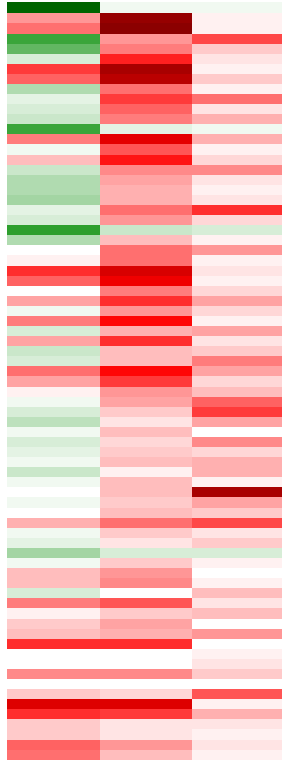
Infectious disease

Color Key

and Histogram



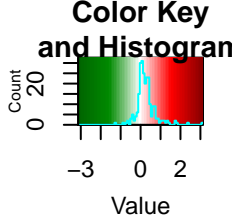
Hepatitis C hsa05160



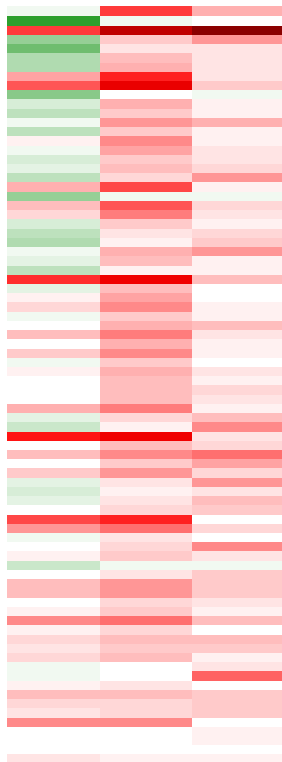
- CLDN5 | claudin 5
- CLDN9 | claudin 9
- MMP9 | matrix metalloproteinase 9
- MMP13 | matrix metalloproteinase 13
- OSY1 | osteonectin
- OSY2 | osteonectin
- OSY3 | osteonectin
- OSY4 | osteonectin
- OSY5 | osteonectin
- OSY6 | osteonectin
- OSY7 | osteonectin
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- OSY99 | osteonectin
- OSY100 | osteonectin

CA
SLC
SS

Infectious disease



Hepatitis B hsa05161



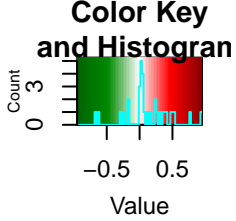
CA

SLC

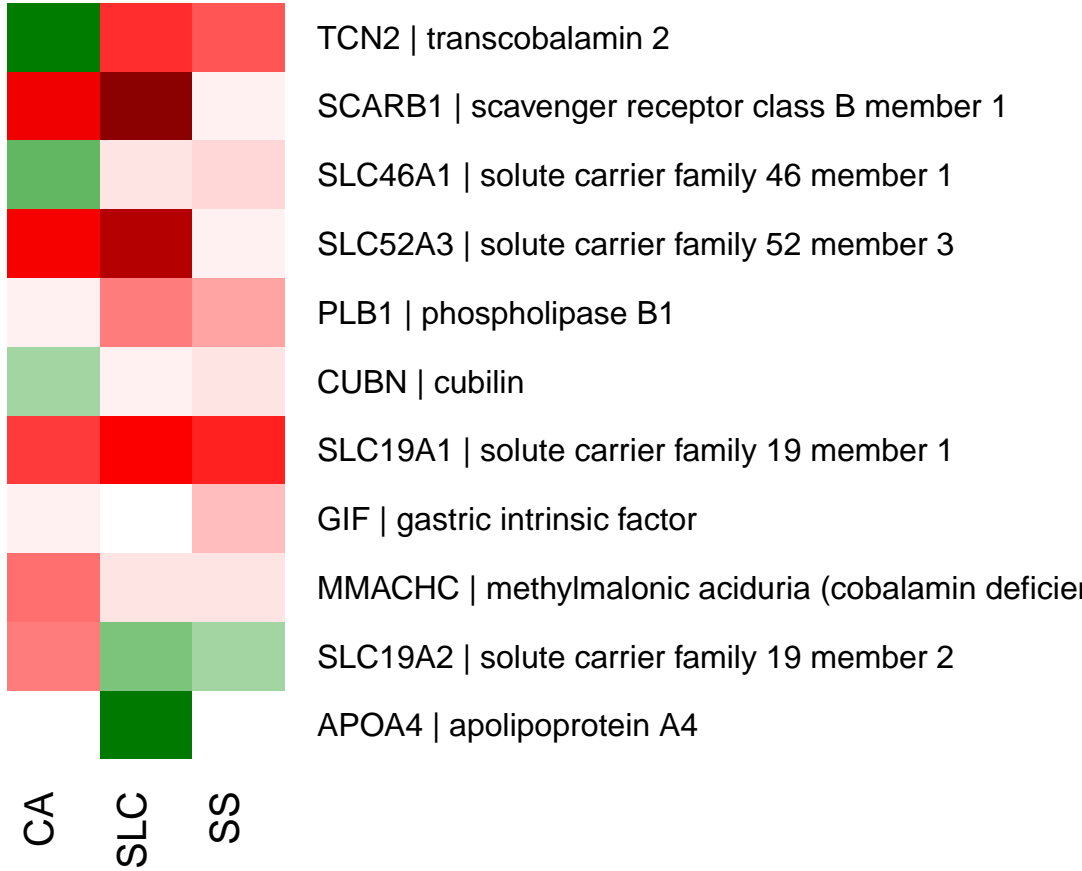
SS

TGFB1	transforming growth factor beta 1
MAP3B	matrix metalloproteinase 9
KIF14	protein kinase 4 beta
MAP3A1	protein kinase 3
MAP3K1	signal transducer and activator of transcription 5A
MAP3K2	signal transducer and activator of transcription 1
MAP3K3	transforming growth factor alpha
MAP3K4	transforming growth factor beta 1
MAP3K5	transforming growth factor beta 2
MAP3K6	transforming growth factor beta 3
MAP3K7	transforming growth factor beta 4
MAP3K8	transforming growth factor beta 5
MAP3K9	transforming growth factor beta 6
MAP3K10	transforming growth factor beta 7
MAP3K11	transforming growth factor beta 8
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MAP3K102	transforming growth factor beta 99
MAP3K103	transforming growth factor beta 100

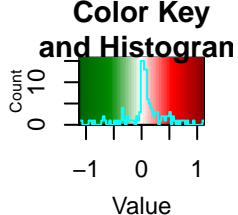
Infectious disease



Vitamin digestion and absorption hsa04977

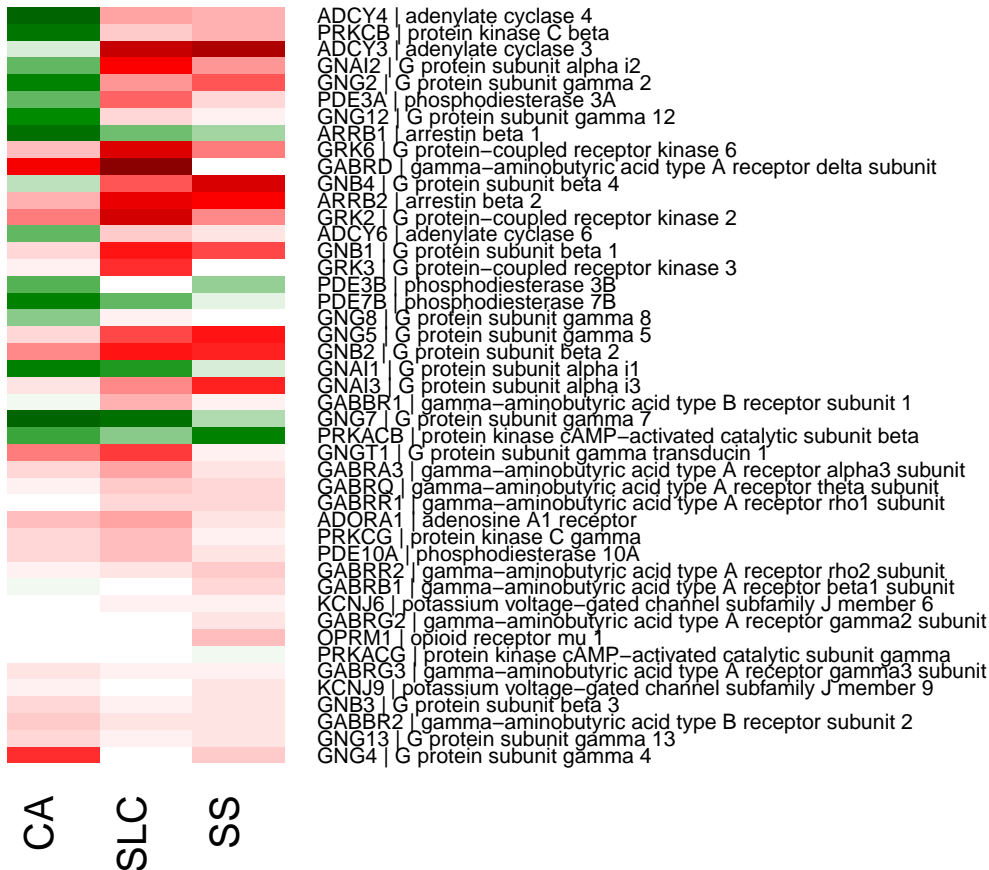


Other



Morphine addiction

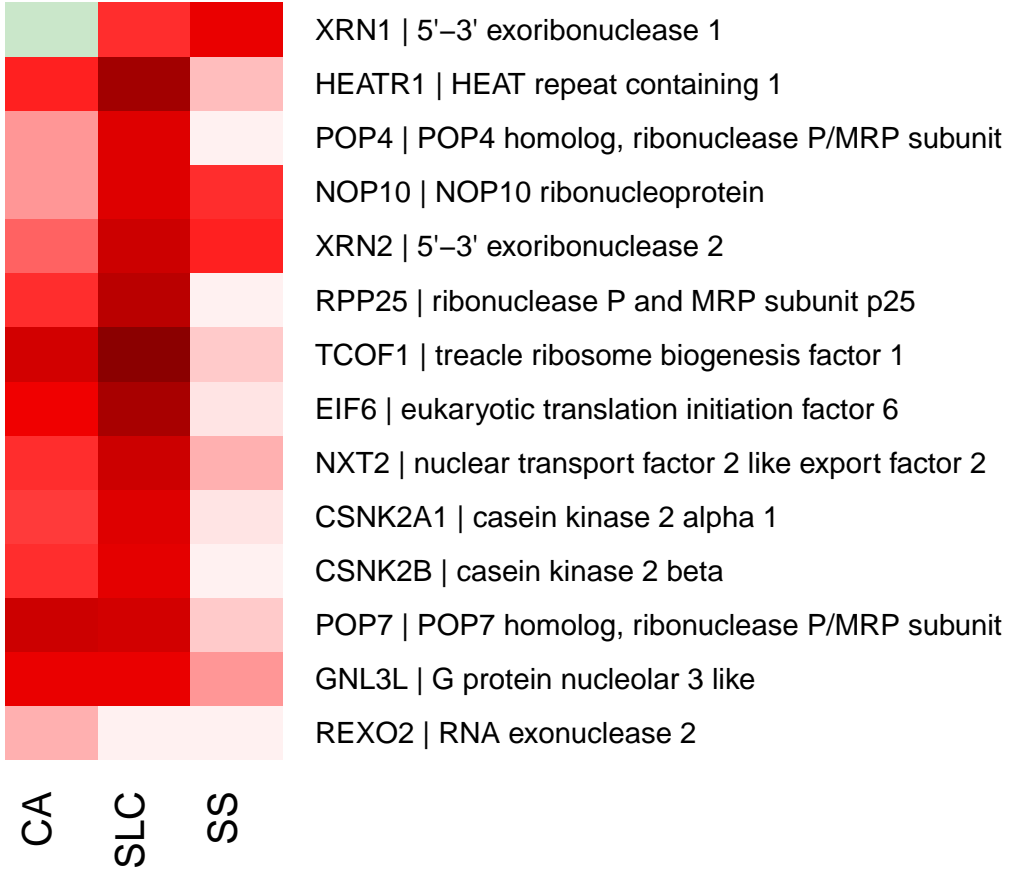
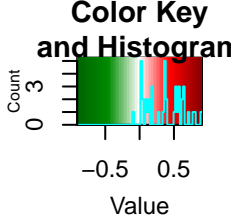
hsa05032



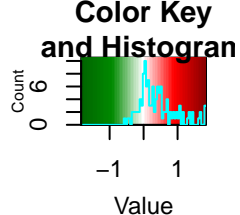
Other

Ribosome biogenesis in eukaryotes

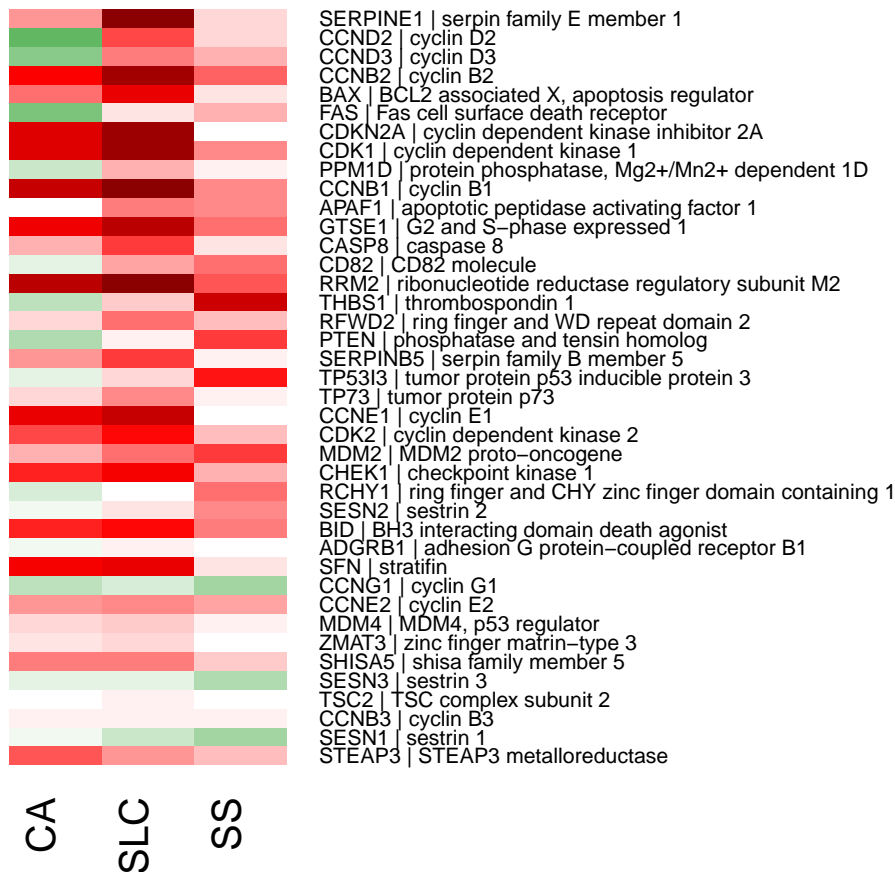
hsa03008



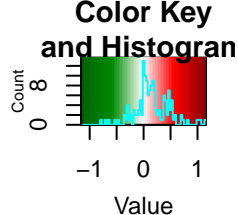
Other



p53 signaling pathway hsa04115

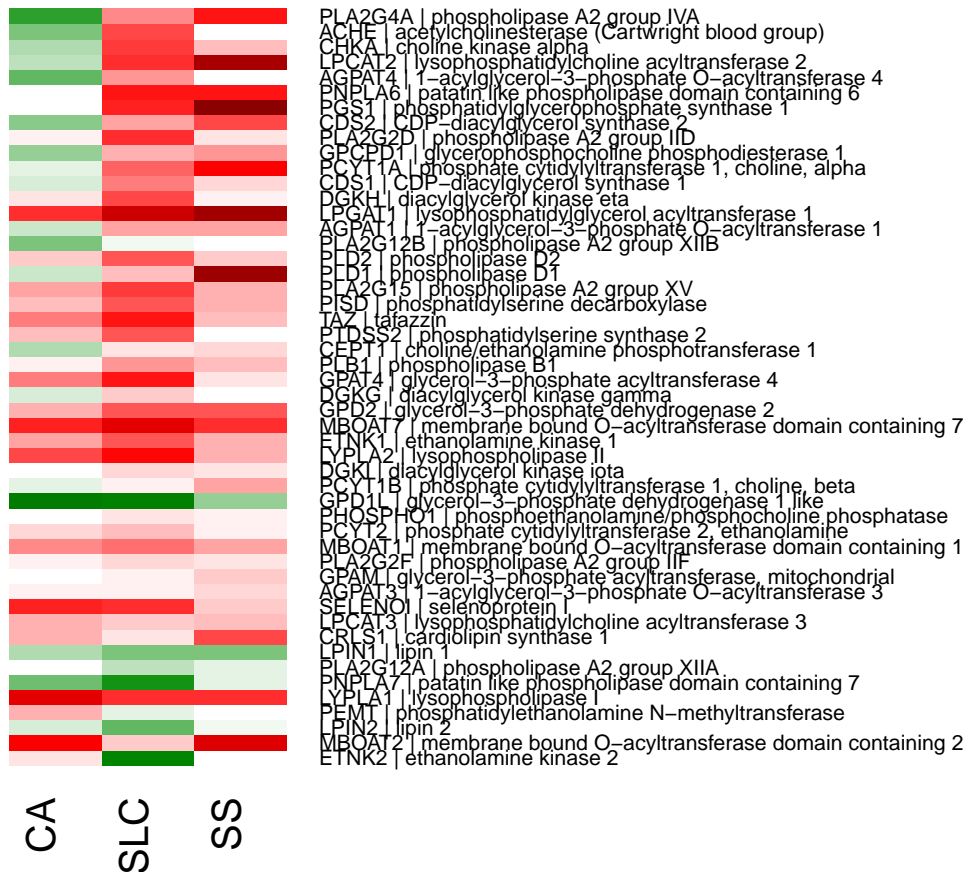


Other

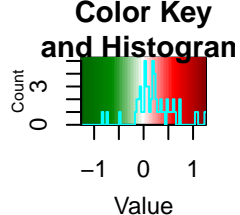


Glycerophospholipid metabolism

hsa00564

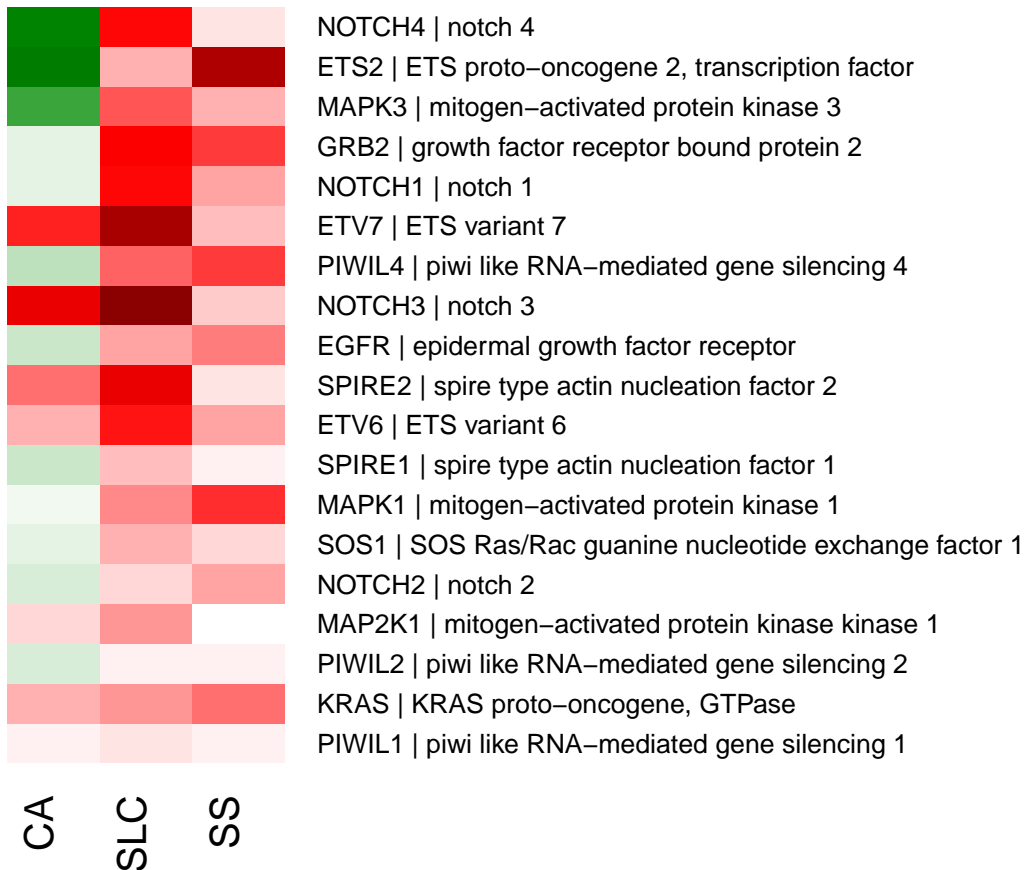


Other

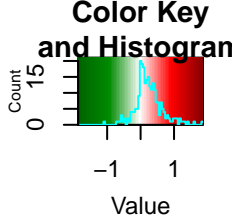


Dorso-ventral axis formation

hsa04320

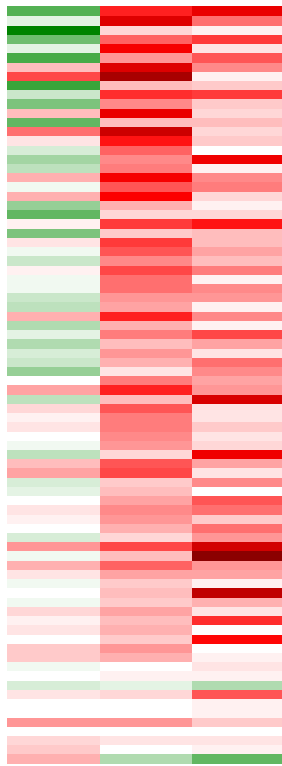


Other



Osteoclast differentiation

hsa04380



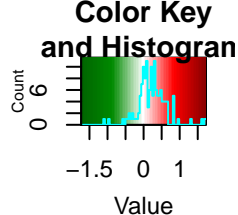
CA

SLC

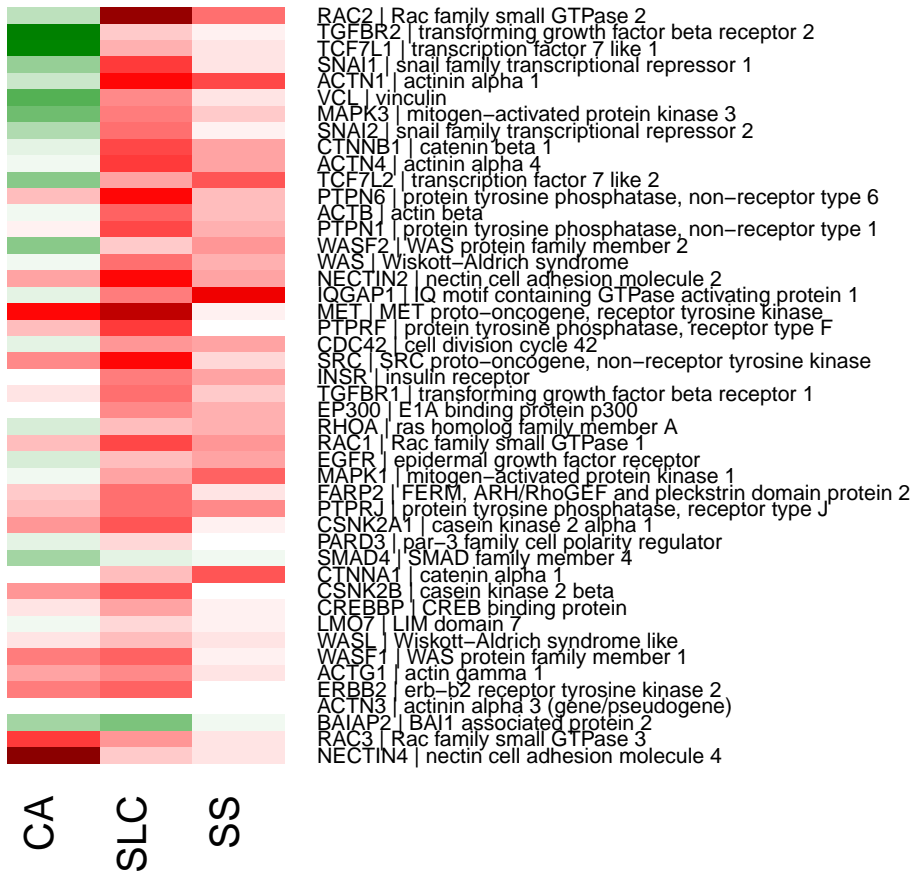
SS

- SIRPA | signal regulatory protein alpha
- ITGAE | integrin alpha 4
- ITGAE2 | integrin alpha 4 receptor beta receptor 2
- KIT | KIT-like tyrosine kinase receptor 1
- KITLG | kit ligand
- KITLG2 | kit ligand subunit alpha chain
- CSF1M2 | colony-stimulating factor 1 receptor expressed on myeloid cells 2
- CSF1R | colony-stimulating factor 1 receptor
- CSF1R3 | colony-stimulating factor 1 receptor subunit gamma
- NFKB2 | nuclear factor kappa B subunit 2
- NFKB3 | nuclear factor kappa B subunit 3
- NFKB1 | nuclear factor kappa B subunit 1
- FOSL1 | fos-like 1 transcription factor
- FOSL2 | fos-like 2 transcription factor
- FOSL3 | fos-like 3 transcription factor
- FOSL4 | fos-like 4 transcription factor
- FOSL5 | fos-like 5 transcription factor
- FOSL6 | fos-like 6 transcription factor
- FOSL7 | fos-like 7 transcription factor
- FOSL8 | fos-like 8 transcription factor
- FOSL9 | fos-like 9 transcription factor
- FOSL10 | fos-like 10 transcription factor
- FOSL11 | fos-like 11 transcription factor
- FOSL12 | fos-like 12 transcription factor
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- FOSL99 | fos-like 99 transcription factor
- FOSL100 | fos-like 100 transcription factor

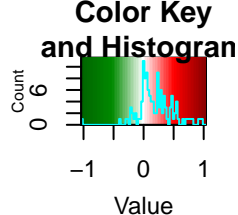
Other



Adherens junction hsa04520



Other



Synaptic vesicle cycle

hsa04721



CA

SLC

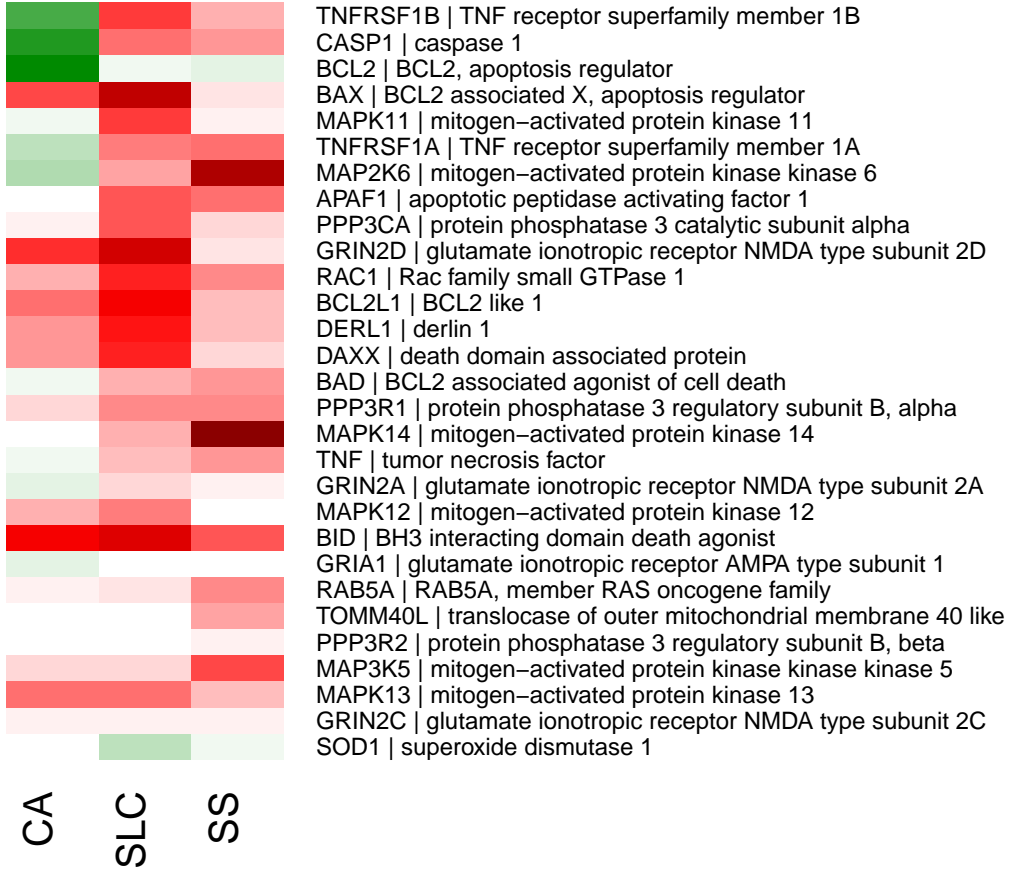
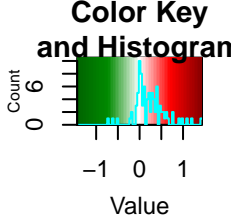
SS

VAMP2 | vesicle associated membrane protein 2
 AP2B1 | adaptor related protein complex 2 beta 1 subunit
 TCIRG1 | T-cell immune regulator 1, ATPase H+ transporting V0 subunit a3
 ATP6V1C1 | ATPase H+ transporting V1 subunit C1
 ATP6V1E1 | ATPase H+ transporting V1 subunit E1
 CPLX1 | complexin 1
 AP2M1 | adaptor related protein complex 2 mu 1 subunit
 DNM2 | dynamin 2
 SYT1 | synaptotagmin 1
 AP2A2 | adaptor related protein complex 2 alpha 2 subunit
 ATP6V0A1 | ATPase H+ transporting V0 subunit a1
 ATP6V0B | ATPase H+ transporting V0 subunit b
 DNM1 | dynamin 1
 CLTB | clathrin light chain B
 CLTC | clathrin heavy chain
 AP2A1 | adaptor related protein complex 2 alpha 1 subunit
 ATP6V0E1 | ATPase H+ transporting V0 subunit e1
 ATP6V1B2 | ATPase H+ transporting V1 subunit B2
 NAPA | NSF attachment protein alpha
 ATP6V0D1 | ATPase H+ transporting V0 subunit d1
 STX1A | syntaxin 1A
 SNAP25 | synaptosome associated protein 25
 AP2S1 | adaptor related protein complex 2 sigma 1 subunit
 ATP6V0C | ATPase H+ transporting V0 subunit c
 DNM3 | dynamin 3
 STX3 | syntaxin 3
 CLTA | clathrin light chain A
 ATP6V1A | ATPase H+ transporting V1 subunit A
 ATP6V1H | ATPase H+ transporting V1 subunit H
 SLC18A1 | solute carrier family 18 member A1
 STX1B | syntaxin 1B
 ATP6V1B1 | ATPase H+ transporting V1 subunit B1
 SLC17A6 | solute carrier family 17 member 6
 NSF | N-ethylmaleimide sensitive factor, vesicle fusing ATPase
 RIMS1 | regulating synaptic membrane exocytosis 1
 CLTCL1 | clathrin heavy chain like 1
 ATP6V1F | ATPase H+ transporting V1 subunit F
 UNC13A | unc-13 homolog A
 SLC18A3 | solute carrier family 18 member A3
 ATP6V1C2 | ATPase H+ transporting V1 subunit C2
 ATP6V0E2 | ATPase H+ transporting V0 subunit e2

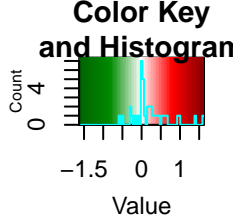
Other

Amyotrophic lateral sclerosis (ALS)

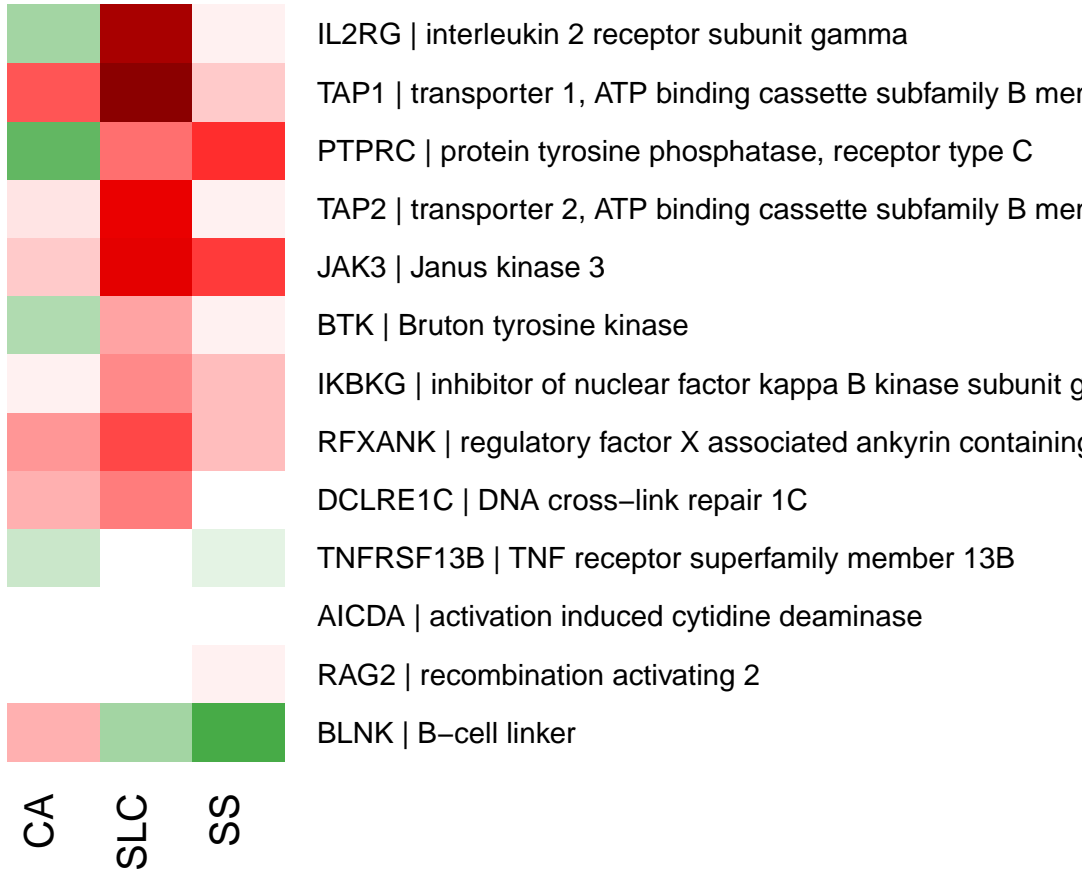
hsa05014



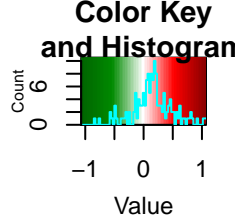
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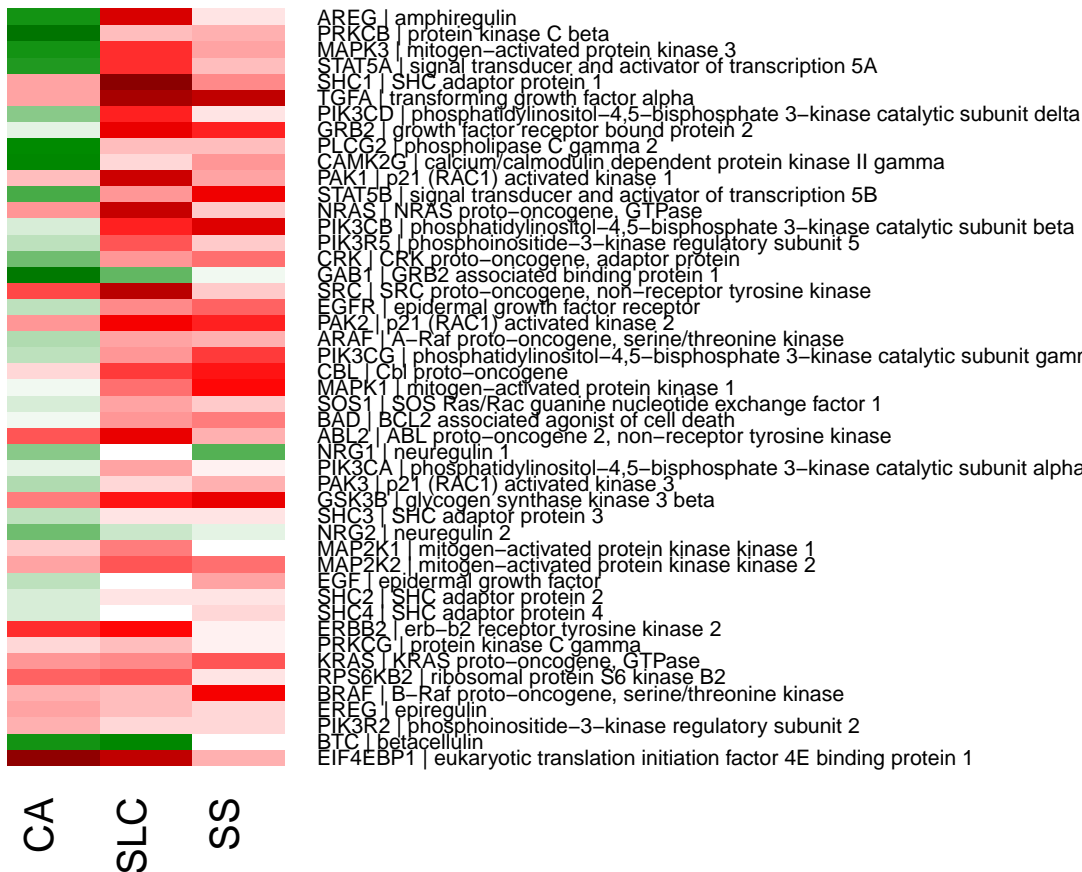
Primary immunodeficiency hsa05340



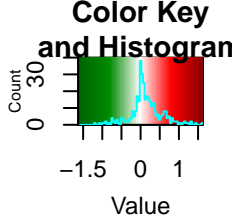
Other



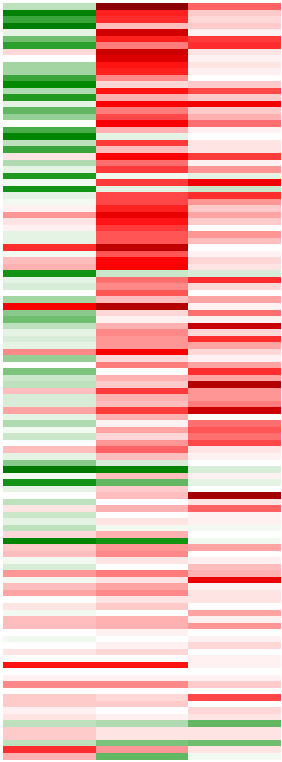
ErbB signaling pathway hsa04012



Signal transduction



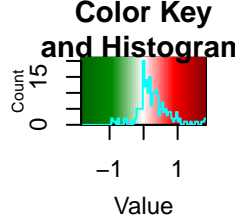
Rap1 signaling pathway hsa04015



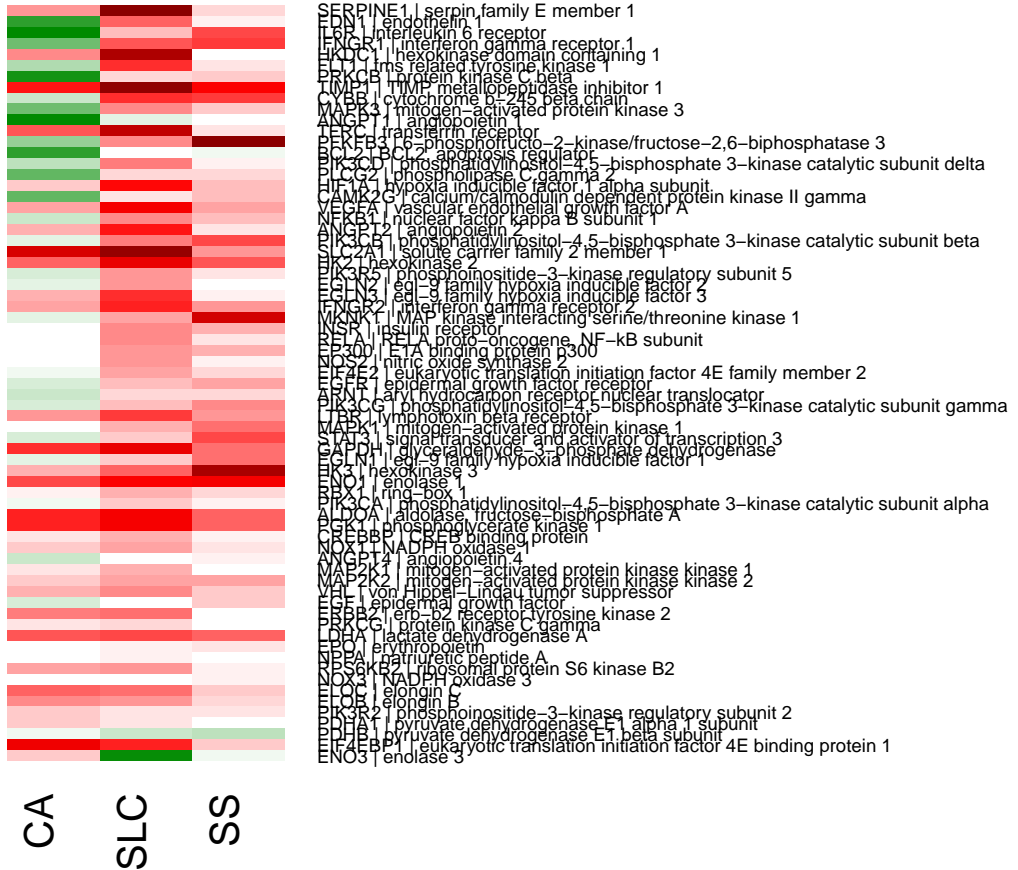
CA
SLC
SS

- RAC2 | Rac family small GTPase 2
- GRB2 | Ras guanine nucleotide exchange factor 2
- SHC1 | Src homology 2 domain, ankyrin repeat and PH domain 3
- PIP3 | Phosphatidylinositol (3-OH) precursor of protein-binding family B member 1 interacting protein
- PIP2 | Phosphatidylinositol (4,5)-bisphosphate
- PLD1 | Phospholipase C domain containing protein 1
- PLD2 | Phospholipase C domain containing protein 2
- PLD3 | Phospholipase C domain containing protein 3
- PLD4 | Phospholipase C domain containing protein 4
- PLD5 | Phospholipase C domain containing protein 5
- PLD6 | Phospholipase C domain containing protein 6
- PLD7 | Phospholipase C domain containing protein 7
- PLD8 | Phospholipase C domain containing protein 8
- PLD9 | Phospholipase C domain containing protein 9
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- PLD42 | Phospholipase C domain containing protein 42
- PLD43 | Phospholipase C domain containing protein 43
- PLD44 | Phospholipase C domain containing protein 44
- PLD45 | Phospholipase C domain containing protein 45
- PLD46 | Phospholipase C domain containing protein 46
- PLD47 | Phospholipase C domain containing protein 47
- PLD48 | Phospholipase C domain containing protein 48
- PLD49 | Phospholipase C domain containing protein 49
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- PLD51 | Phospholipase C domain containing protein 51
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- PLD53 | Phospholipase C domain containing protein 53
- PLD54 | Phospholipase C domain containing protein 54
- PLD55 | Phospholipase C domain containing protein 55
- PLD56 | Phospholipase C domain containing protein 56
- PLD57 | Phospholipase C domain containing protein 57
- PLD58 | Phospholipase C domain containing protein 58
- PLD59 | Phospholipase C domain containing protein 59
- PLD60 | Phospholipase C domain containing protein 60
- PLD61 | Phospholipase C domain containing protein 61
- PLD62 | Phospholipase C domain containing protein 62
- PLD63 | Phospholipase C domain containing protein 63
- PLD64 | Phospholipase C domain containing protein 64
- PLD65 | Phospholipase C domain containing protein 65
- PLD66 | Phospholipase C domain containing protein 66
- PLD67 | Phospholipase C domain containing protein 67
- PLD68 | Phospholipase C domain containing protein 68
- PLD69 | Phospholipase C domain containing protein 69
- PLD70 | Phospholipase C domain containing protein 70
- PLD71 | Phospholipase C domain containing protein 71
- PLD72 | Phospholipase C domain containing protein 72
- PLD73 | Phospholipase C domain containing protein 73
- PLD74 | Phospholipase C domain containing protein 74
- PLD75 | Phospholipase C domain containing protein 75
- PLD76 | Phospholipase C domain containing protein 76
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- PLD79 | Phospholipase C domain containing protein 79
- PLD80 | Phospholipase C domain containing protein 80
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- PLD82 | Phospholipase C domain containing protein 82
- PLD83 | Phospholipase C domain containing protein 83
- PLD84 | Phospholipase C domain containing protein 84
- PLD85 | Phospholipase C domain containing protein 85
- PLD86 | Phospholipase C domain containing protein 86
- PLD87 | Phospholipase C domain containing protein 87
- PLD88 | Phospholipase C domain containing protein 88
- PLD89 | Phospholipase C domain containing protein 89
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- PLD95 | Phospholipase C domain containing protein 95
- PLD96 | Phospholipase C domain containing protein 96
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- PLD98 | Phospholipase C domain containing protein 98
- PLD99 | Phospholipase C domain containing protein 99
- PLD100 | Phospholipase C domain containing protein 100

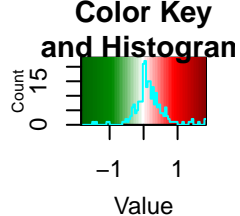
Signal transduction



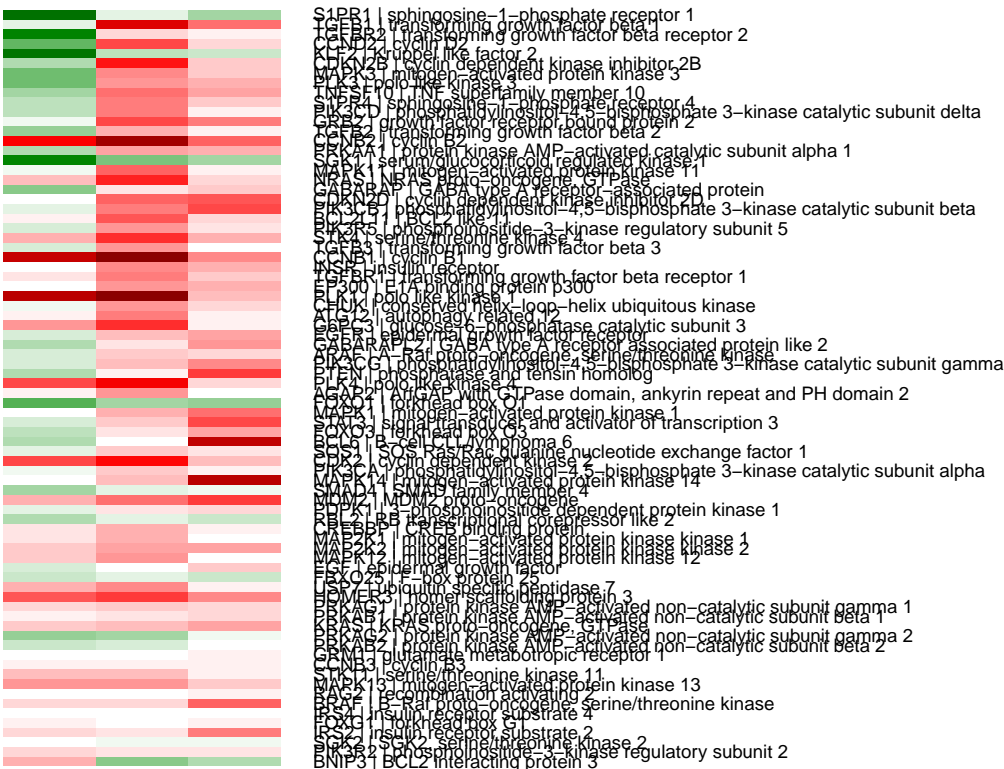
HIF-1 signaling pathway hsa04066



Signal transduction

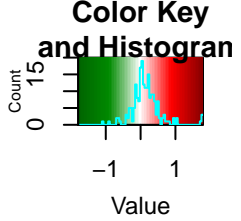


FoxO signaling pathway hsa04068

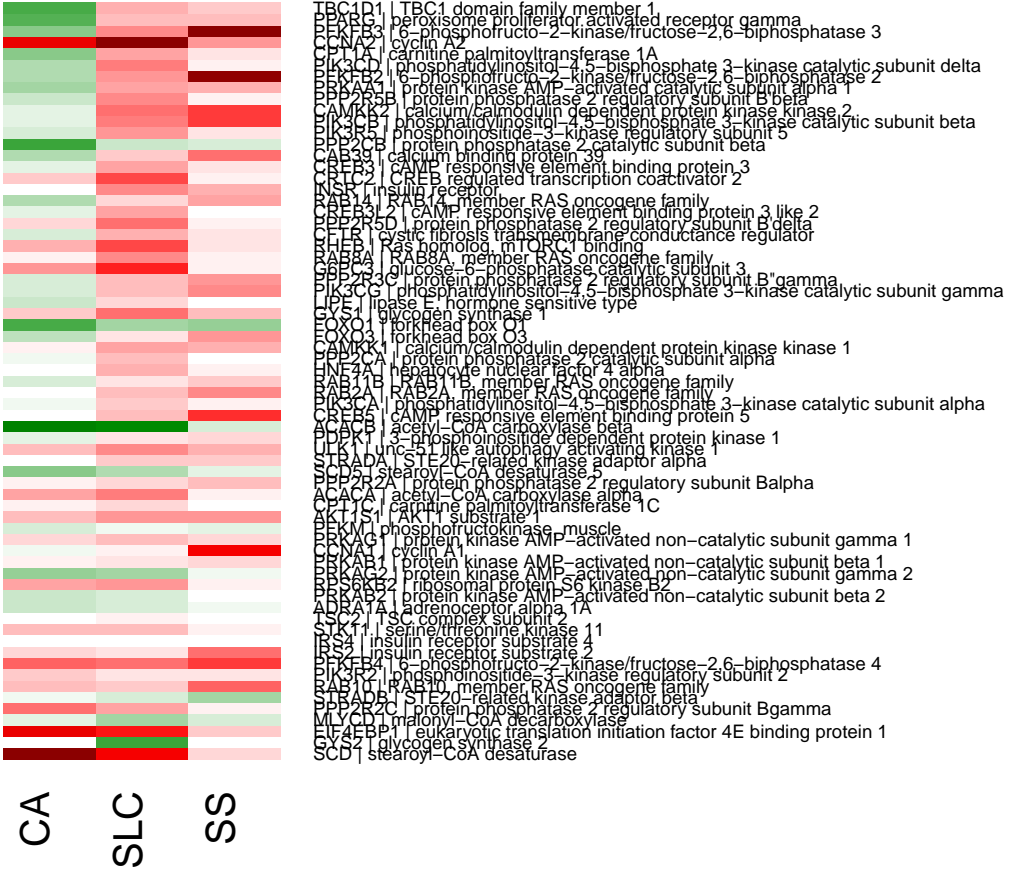


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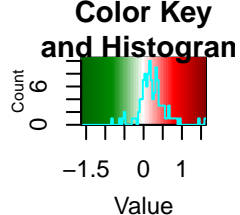
Signal transduction



AMPK signaling pathway hsa04152

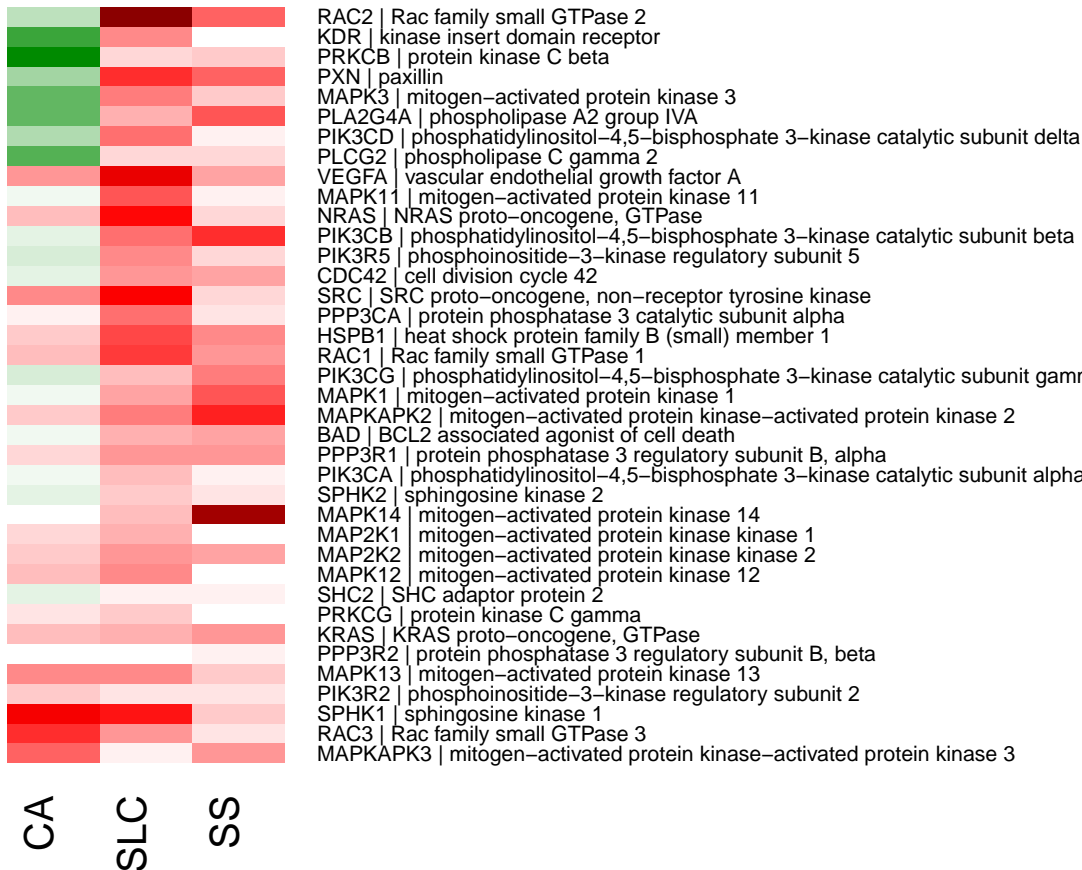


Signal transduction



VEGF signaling pathway

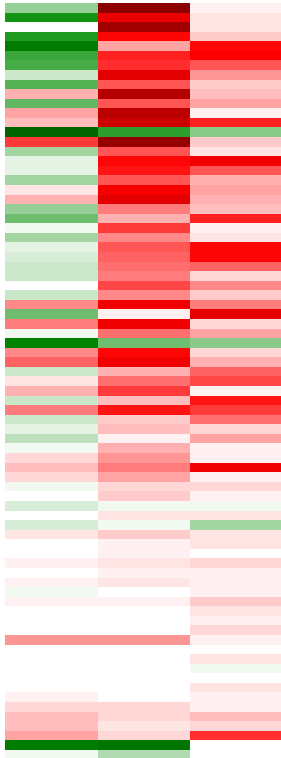
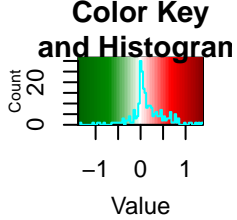
hsa04370



Signal transduction

Jak-STAT signaling pathway

hsa04630



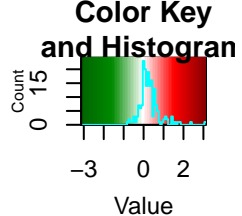
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IL2BG1 interleukin 2 receptor subunit gamma
 IL2RA2 interleukin 2 receptor subunit alpha 2
 IL2RA1 interleukin 2 receptor subunit alpha 1
 IL6R1 interleukin 6 receptor
 IL15RA interleukin 15 receptor subunit alpha
 IL15RB2 interleukin 15 receptor subunit beta 2
 IL15RB1 interleukin 15 receptor subunit beta 1
 IL6 family cytokine
 JAK2 Janus kinase 2
 STAT3 signal transducer and activator of transcription 3
 STAT1 signal transducer and activator of transcription 1
 STAT2 signal transducer and activator of transcription 2
 SH2B1 SH2 domain containing protein 1
 SH2B2 SH2 domain containing protein 2
 SH2B3 SH2 domain containing protein 3
 SH2B4 SH2 domain containing protein 4
 SH2B5 SH2 domain containing protein 5
 SH2B6 SH2 domain containing protein 6
 SH2B7 SH2 domain containing protein 7
 SH2B8 SH2 domain containing protein 8
 SH2B9 SH2 domain containing protein 9
 SH2B10 SH2 domain containing protein 10
 SH2B11 SH2 domain containing protein 11
 SH2B12 SH2 domain containing protein 12
 SH2B13 SH2 domain containing protein 13
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 SH2B96 SH2 domain containing protein 96
 SH2B97 SH2 domain containing protein 97
 SH2B98 SH2 domain containing protein 98
 SH2B99 SH2 domain containing protein 99
 SH2B100 SH2 domain containing protein 100

Signal transduction



TNF signaling pathway

hsa04668



CA

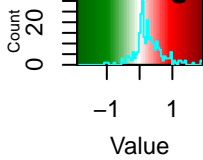
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TNFAIP3 | TNF alpha induced protein 3
EDN1 | endothelin 1
JAG1 | jagged 1
CXCL1 | e-x-c motif chemokine ligand 1
ICAM1 | intercellular adhesion molecule 1
TNFRSF1B | TNF receptor superfamily member 1B
NFKB1A | NFKB inhibitor alpha
MAP3K8 | mitogen-activated protein kinase kinase 8
CEBPB | CCAAT/enhancer binding protein beta
MAPK3 | mitogen-activated protein kinase 3
VCAM1 | vascular cell adhesion molecule 1
PLK3CD1 | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta
CASP7 | caspase 7
MLK3 | mixed lineage kinase domain like pseudokinase
CXCL3 | e-x-c motif chemokine ligand 3
MAPK11 | mitogen-activated protein kinase 11
MMP14 | matrix metalloproteinase 14
TNFRSF1A | TNF receptor superfamily member 1A
FAS | Fas cell surface death receptor
CASP8 | CASP8 and FADD like apoptosis regulator
PLK3CB1 | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta
PLK3R1 | receptor interacting serine/threonine kinase 3
IL1B | interleukin 1 beta
ATF6B | activating transcription factor 6 beta
MAP2K6 | mitogen-activated protein kinase kinase 6
CREB3 | cAMP responsive element binding protein 3
IL18R1 | interleukin 18 receptor 1
MMP9 | matrix metalloproteinase 3
C/EBPB3 | cAMP responsive element binding protein 3 like 2
RELA | RELA proto-oncogene, NF-kB subunit
ULK1 | conserved helix-loop-helix ubiquitous kinase
IKKG | inositol trisphosphate 3-kinase catalytic subunit gamma
MAPK1 | mitogen-activated protein kinase 1
FADD1 | Fas associated via death domain
BIN3A | binamylin like
PLK3CA | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha
CREB5 | cAMP responsive element binding protein 5
MAPK14 | mitogen-activated protein kinase 14
MMP2 | tumor necrosis factor
BAG4 | BC1 associated aminoacyl-tRNA synthetase 4
MAPK12 | mitogen-activated protein kinase 12
MAPK4 | ribosomal protein S6 kinase A5
MAPK9 | mitogen-activated protein kinase kinase kinase 5
MAPK13 | mitogen-activated protein kinase 13
UCHL1 | itchy E3 ubiquitin protein ligase
NOD2 | nucleotide binding oligomerization domain containing 2
BCLAM5 | BCLAM family member 5 mitochondrial serine/threonine protein phosphatase
TAB3 | TGF-beta activated kinase 1 and MAP3K7 binding protein 3

Signal transduction

Color Key and Histogram



Phagosome hsa04145



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ITGA5 | integrin subunit alpha 5
HLA-DP1 | major histocompatibility complex, class I, B
HLA-EP1 | major histocompatibility complex, class I, E
LYAR1 | tyrosine receptor kinase cassette subfamily B member
CYBB | cytochrome b-245 beta chain
MICA | complement C5 compatibility complex class I, C
CD22 | B cell surface antigen binding cassette subfamily B member
FRS3 | fibroblast growth factor receptor-like tyrosine kinase
G12A2 | G12A RAS oncogene family
G12A3 | G12A RAS oncogene family
NFY2 | neutrophil cytosolic factor 2
HTRV1 | histiocyte trophoblast integrin alpha M
MUC20 | mucin type 2 receptor with collagenous structure
G12A1 | G12A RAS oncogene family
G12A4 | G12A RAS oncogene family
G12A5 | G12A RAS oncogene family
TAF9L | vesicle associated membrane protein 3
ATP6V0C1 | ATPase H+ transporting V0 subunit c1
DYNLC1 | dynactin cytoplasmic 1 light intermediate chain 2
SEPA2 | RAB2A cytoskeleton organizing family
G12A7 | G12A RAS oncogene family
G12A8 | G12A RAS oncogene family
WDR57 | WD repeat domain containing 7A
ATP6V0E1 | ATPase H+ transporting V1 subunit E1
LYAR2 | tyrosine receptor class B member 1
MUC31 | mucin type 3 scavenger receptor chain 1
HLA-DQ1 | major histocompatibility complex, class I, G
DYNLC2 | dynactin cytoplasmic 2 light intermediate chain 2
RAB2B | RAB2B small GTPase
ATP6V0B1 | ATPase H+ transporting V0 subunit b1
ITPS3 | toll like receptor 3
GABK | gamma-aminobutyric acid receptor 1
ATP6V0E2 | ATPase H+ transporting V1 subunit E2
ATP6V0D1 | ATPase H+ transporting V0 subunit d1
RAB23 | RAB23 small GTPase
DYNLC3 | dynactin cytoplasmic 3 light intermediate chain 3
GAB2 | toll like receptor 6
ATP6V0F1 | ATPase H+ transporting accessory protein 1
ATP6V0C2 | ATPase H+ transporting V0 subunit c2
SEPC1A1 | SEC11 transmembrane alpha 1 subunit
SEPC2 | SEC22 homolog B, vesicle trafficking protein (gene/pseudogene)
ATP6V1H1 | ATPase H+ transporting V1 subunit H
ATP6V1G1 | ATPase H+ transporting V1 subunit G
HRS | ubiquitin ligase factor-regulated tyrosine kinase substrate
DYNLC1L1 | dynactin cytoplasmic 1 light intermediate chain 1
G12A6 | G12A RAS oncogene family
G12A9 | G12A RAS oncogene family
G12A10 | G12A RAS oncogene family
ATP6V0E1 | ATPase H+ transporting V1 subunit E1
SEPC1A2 | SEC11 transmembrane alpha 2 subunit
ATP6V1C2 | ATPase H+ transporting V1 subunit C2
ATP6V0E2 | ATPase H+ transporting V0 subunit e2

Transport and catabolism