### Scatterplot of all genes



### Rank-rank plot of all genes



### number of genes in each quadrant







geneset size

number of genesets FDR<0.05



### Scatterplot of all gene sets; FDR<0.05 in red



Scatterplot of all gene sets; top 50 in red





GTP hydrolysis and joining of the 60S ribosomal subunit SRP-dependent cotranslational protein targeting to membrane Response of EIF2AK4 (GCN2) to amino acid deficiency Eukaryotic Translation Termination Viral mRNA Translation Eukaryotic Translation Elongation The role of GTSE1 in G2/M progression after G2 checkpoint Hh mutants are degraded by ERAD Activation of the TFAP2 (AP-2) family of transcription factors Autodegradation of the E3 ubiquitin ligase COP1 Autodegradation of Cdh1 by Cdh1:APC/C Mitochondrial iron-sulfur cluster biogenesis GSK3B and BTRC:CUL1-mediated-degradation of NFE2L2 TICAM1,TRAF6-dependent induction of TAK1 complex TICAM1-dependent activation of IRF3/IRF7 APC/C:Cdc20 mediated degradation of Cyclin B Senescence-Associated Secretory Phenotype (SASP) Eicosanoids Activation of RAC1 Class C/3 (Metabotropic glutamate/pheromone receptors) Sensory perception of sweet, bitter, and umami (glutamate) taste Prednisone ADME Digestion Expression and translocation of olfactory receptors Aspirin ADME

### effect size versus statistical significance



s.dist (effect size)

#### Class C/3 (Metabotropic glutamate/pheromone receptors



### Class C/3 (Metabotropic glutamate/pheromone receptors)



# Class C/3 (Metabotropic glutamate/pheromone re



### **Eicosanoids**



### **Eicosanoids**



# Eicosanoids



### Scavenging of heme from plasma



Rank in contrast bl

Scavenging of heme from plasma



Rank in contrast bl

# Scavenging of heme from plasma



#### **Prednisone ADME**



### **Prednisone ADME**



# Prednisone ADME



### Glucuronidation



### Glucuronidation



Rank in contrast bl

# Glucuronidation



#### SARS-CoV-1 modulates host translation machinery





#### SARS-CoV-1 modulates host translation machinery

Rank in contrast bl

## SARS-CoV-1 modulates host translation machin



#### Sensory perception of sweet, bitter, and umami (glutamate)



Rank in contrast bl

### Sensory perception of sweet, bitter, and umami (glutamate) taste



Rank in contrast bl

# Sensory perception of sweet, bitter, and umami (



### Peptide chain elongation



Peptide chain elongation



# Peptide chain elongation



### **Eukaryotic Translation Elongation**



Rank in contrast bl

5000 . 0 . -5000 -10000 -15000 -20000 -15000 -10000 -5000 5000 0

**Eukaryotic Translation Elongation** 

Rank in contrast bl

# **Eukaryotic Translation Elongation**


#### TICAM1-dependent activation of IRF3/IRF7



Rank in contrast bl



#### TICAM1-dependent activation of IRF3/IRF7

Rank in contrast bl

## TICAM1-dependent activation of IRF3/IRF7



#### **Aspirin ADME**



## **Aspirin ADME**



Rank in contrast bl

# Aspirin ADME



#### **Eukaryotic Translation Termination**



Rank in contrast bl



**Eukaryotic Translation Termination** 



## **Eukaryotic Translation Termination**



#### Selenocysteine synthesis



Selenocysteine synthesis



Rank in contrast bl

## Selenocysteine synthesis



#### **Viral mRNA Translation**



**Viral mRNA Translation** 



## Viral mRNA Translation



#### **PINK1-PRKN Mediated Mitophagy**



**PINK1–PRKN Mediated Mitophagy** 



Rank in contrast bl

## PINK1–PRKN Mediated Mitophagy



#### Pexophagy



## Pexophagy



Rank in contrast bl

# Pexophagy



#### TICAM1,TRAF6-dependent induction of TAK1 complex



#### TICAM1,TRAF6-dependent induction of TAK1 complex



Rank in contrast bl

## TICAM1, TRAF6-dependent induction of TAK1 co



#### SCF(Skp2)-mediated degradation of p27/p21



Rank in contrast bl

#### SCF(Skp2)–mediated degradation of p27/p21



## SCF(Skp2)-mediated degradation of p27/p21



#### Response of EIF2AK4 (GCN2) to amino acid deficiency



#### Response of EIF2AK4 (GCN2) to amino acid deficiency



# Response of EIF2AK4 (GCN2) to amino acid def



#### se Mediated Decay (NMD) independent of the Exon Junction (





## onsense Mediated Decay (NMD) independent of the Exon Junction Complex

Rank in contrast bl

## Nonsense Mediated Decay (NMD) independent of



#### Digestion



## Digestion



Rank in contrast bl




#### **cGMP** effects



### cGMP effects



Rank in contrast bl

Rank in contrast gu

# cGMP effects



### Apoptotic cleavage of cell adhesion proteins



## Apoptotic cleavage of cell adhesion proteins



Rank in contrast bl

# Apoptotic cleavage of cell adhesion proteins



### Autodegradation of Cdh1 by Cdh1:APC/C



Rank in contrast bl

### Autodegradation of Cdh1 by Cdh1:APC/C



# Autodegradation of Cdh1 by Cdh1:APC/C



#### Formation of a pool of free 40S subunits



Rank in contrast bl



Formation of a pool of free 40S subunits

Rank in contrast bl

Rank in contrast gu

# Formation of a pool of free 40S subunits



### **Golgi Cisternae Pericentriolar Stack Reorganization**



### **Golgi Cisternae Pericentriolar Stack Reorganization**



# Golgi Cisternae Pericentriolar Stack Reorganizat



#### Expression and translocation of olfactory receptors



## Expression and translocation of olfactory receptors



# Expression and translocation of olfactory receptor



### Sensory perception of taste



### Sensory perception of taste



Rank in contrast bl

Rank in contrast gu

# Sensory perception of taste



#### Competing endogenous RNAs (ceRNAs) regulate PTEN trans



### Competing endogenous RNAs (ceRNAs) regulate PTEN translation



Rank in contrast bl

Rank in contrast gu

# Competing endogenous RNAs (ceRNAs) regulat



#### **TICAM1, RIP1-mediated IKK complex recruitment**





### TICAM1, RIP1-mediated IKK complex recruitment

Rank in contrast bl

Rank in contrast gu

# TICAM1, RIP1-mediated IKK complex recruitme



### Mitophagy



## Mitophagy



Rank in contrast bl

Rank in contrast gu





### Activation of the TFAP2 (AP-2) family of transcription fact



#### Activation of the TFAP2 (AP-2) family of transcription factors



# Activation of the TFAP2 (AP-2) family of transcri



#### Senescence-Associated Secretory Phenotype (SASP)



## Senescence–Associated Secretory Phenotype (SASP)



# Senescence-Associated Secretory Phenotype (S


#### APC/C:Cdc20 mediated degradation of Cyclin B



#### APC/C:Cdc20 mediated degradation of Cyclin B



Rank in contrast gu

### APC/C:Cdc20 mediated degradation of Cyclin B



#### **Olfactory Signaling Pathway**



**Olfactory Signaling Pathway** 



# **Olfactory Signaling Pathway**



#### SARS-CoV-2 modulates host translation machinery





#### SARS-CoV-2 modulates host translation machinery

Rank in contrast bl

Rank in contrast gu

### SARS-CoV-2 modulates host translation machin



#### GSK3B and BTRC:CUL1-mediated-degradation of NFE2



#### GSK3B and BTRC:CUL1-mediated-degradation of NFE2L2



Rank in contrast bl

Rank in contrast gu

# GSK3B and BTRC:CUL1-mediated-degradation



#### The role of GTSE1 in G2/M progression after G2 checkpo



#### The role of GTSE1 in G2/M progression after G2 checkpoint



Rank in contrast bl

### The role of GTSE1 in G2/M progression after G2



#### SUMOylation of immune response proteins



Rank in contrast bl

### SUMOylation of immune response proteins



# SUMOylation of immune response proteins



#### GTP hydrolysis and joining of the 60S ribosomal subun



#### GTP hydrolysis and joining of the 60S ribosomal subunit



Rank in contrast bl

Rank in contrast gu

### GTP hydrolysis and joining of the 60S ribosomal



#### Hh mutants are degraded by ERAD



Rank in contrast bl



Hh mutants are degraded by ERAD

Rank in contrast gu



### Hh mutants are degraded by ERAD



#### AUF1 (hnRNP D0) binds and destabilizes mRNA



# AUF1 (hnRNP D0) binds and destabilizes mRNA



Rank in contrast bl

Rank in contrast gu

# AUF1 (hnRNP D0) binds and destabilizes mRNA



#### Mitochondrial iron-sulfur cluster biogenesis



#### Mitochondrial iron-sulfur cluster biogenesis



Rank in contrast bl

Rank in contrast gu

### Mitochondrial iron-sulfur cluster biogenesis



#### Ubiquitin-dependent degradation of Cyclin D



Rank in contrast bl

#### Ubiquitin-dependent degradation of Cyclin D



### Ubiquitin-dependent degradation of Cyclin D



#### SRP-dependent cotranslational protein targeting to memb



#### SRP-dependent cotranslational protein targeting to membrane



Rank in contrast bl

Rank in contrast gu

# SRP-dependent cotranslational protein targeting


### Vpu mediated degradation of CD4



5000 'n 0 -5000 -10000 -15000 -20000 -15000 -10000 -5000 5000 0

Vpu mediated degradation of CD4

Rank in contrast bl

Rank in contrast gu

# Vpu mediated degradation of CD4



#### **Activation of RAC1**



Rank in contrast bl

### **Activation of RAC1**



Rank in contrast bl

Rank in contrast gu

## Activation of RAC1



### Autodegradation of the E3 ubiquitin ligase COP1



Rank in contrast bl

### Autodegradation of the E3 ubiquitin ligase COP1



# Autodegradation of the E3 ubiquitin ligase COP1



### Aberrant regulation of mitotic cell cycle due to RB1 defec



### Aberrant regulation of mitotic cell cycle due to RB1 defects



## Aberrant regulation of mitotic cell cycle due to RE



ormation of the ternary complex, and subsequently, the 43S c



#### Formation of the ternary complex, and subsequently, the 43S complex



Rank in contrast bl

Rank in contrast gu

## Formation of the ternary complex, and subseque

