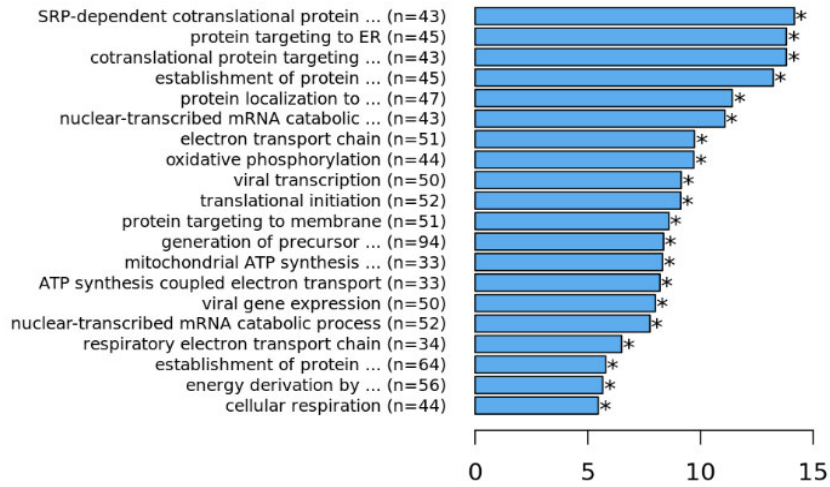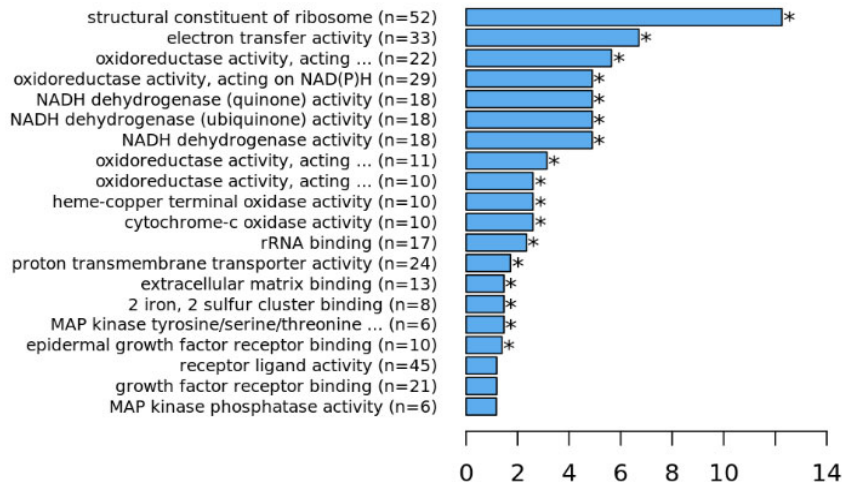Figure S1: L-Arginine enhances oral keratinocyte proliferation under a low glucose condition (6mM). TIGK cells were treated with Arg with concentrations ranging from 0.5 to 2mM. Proliferation was assessed by an MTS proliferation assay 24-96 hours after treatment. OD490 values were recorded. # $p<0.01$ compared to untreated cells.

ArgH24hvsConH24h.down(BP)

- SRP-dependent cotranslational protein ... (n=43) *
- protein targeting to ER (n=45) *
- cotranslational protein targeting ... (n=43) *
- establishment of protein ... (n=45) *
- protein localization to ... (n=47) *
- nuclear-transcribed mRNA catabolic ... (n=43) *
- electron transport chain (n=51) *
- oxidative phosphorylation (n=44) *
- viral transcription (n=50) *
- translational initiation (n=52) *
- protein targeting to membrane (n=51) *
- generation of precursor ... (n=94) *
- mitochondrial ATP synthesis ... (n=33) *
- ATP synthesis coupled electron transport (n=33) *
- viral gene expression (n=50) *
- nuclear-transcribed mRNA catabolic process (n=52) *
- respiratory electron transport chain (n=34) *
- establishment of protein ... (n=64) *
- energy derivation by ... (n=56) *
- cellular respiration (n=44) *

x-axis: 0, 5, 10, 15

ArgH24hvsConH24h.down(MF)

- structural constituent of ribosome (n=52) *
- electron transfer activity (n=33) *
- oxidoreductase activity, acting ... (n=22) *
- oxidoreductase activity, acting on NAD(P)H (n=29) *
- NADH dehydrogenase (quinone) activity (n=18) *
- NADH dehydrogenase (ubiquinone) activity (n=18) *
- NADH dehydrogenase activity (n=18) *
- oxidoreductase activity, acting ... (n=11) *
- oxidoreductase activity, acting ... (n=10) *
- heme-copper terminal oxidase activity (n=10) *
- cytochrome-c oxidase activity (n=10) *
- rRNA binding (n=17) *
- proton transmembrane transporter activity (n=24) *
- extracellular matrix binding (n=13) *
- 2 iron, 2 sulfur cluster binding (n=8) *
- MAP kinase tyrosine/serine/threonine ... (n=6) *
- epidermal growth factor receptor binding (n=10) *
- receptor ligand activity (n=45)
- growth factor receptor binding (n=21)
- MAP kinase phosphatase activity (n=6)

x-axis: 0, 2, 4, 6, 8, 10, 14

ArgH24hvsConH24h.down(CC)

- cytosolic ribosome (n=45) *
- ribosomal subunit (n=58) *
- cell-substrate adherens junction (n=90) *
- focal adhesion (n=90) *
- cell-substrate junction (n=90) *
- ribosome (n=61) *
- mitochondrial inner membrane (n=91) *
- respiratory chain (n=33) *
- cytosolic small ribosomal subunit (n=21) *
- respiratory chain complex (n=29) *
- cytosolic large ribosomal subunit (n=24) *
- cytosolic part (n=54) *
- mitochondrial membrane part (n=52) *
- large ribosomal subunit (n=35) *
- inner mitochondrial membrane protein complex (n=37) *
- mitochondrial respiratory chain (n=28) *
- small ribosomal subunit (n=24) *
- oxidoreductase complex (n=29) *
- NADH dehydrogenase complex (n=18) *
- mitochondrial respiratory chain complex I (n=18) *
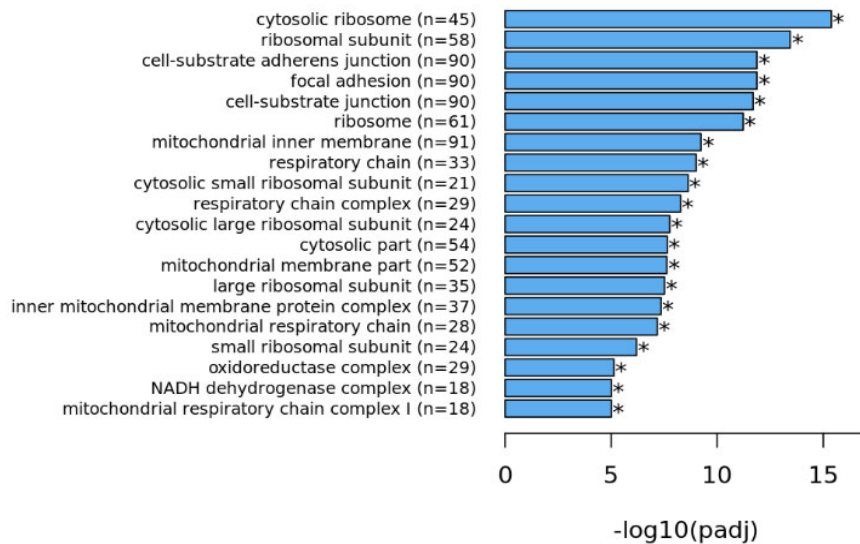
x-axis: 0, 5, 10, 15

-log10(padj)

Figure S2: Top 20 downregulated enriched gene ontology (GO) terms (biological processes/BP, molecular functions/MF, and cellular components/CC) 24 hours after Arg treatment under high glucose conditions.
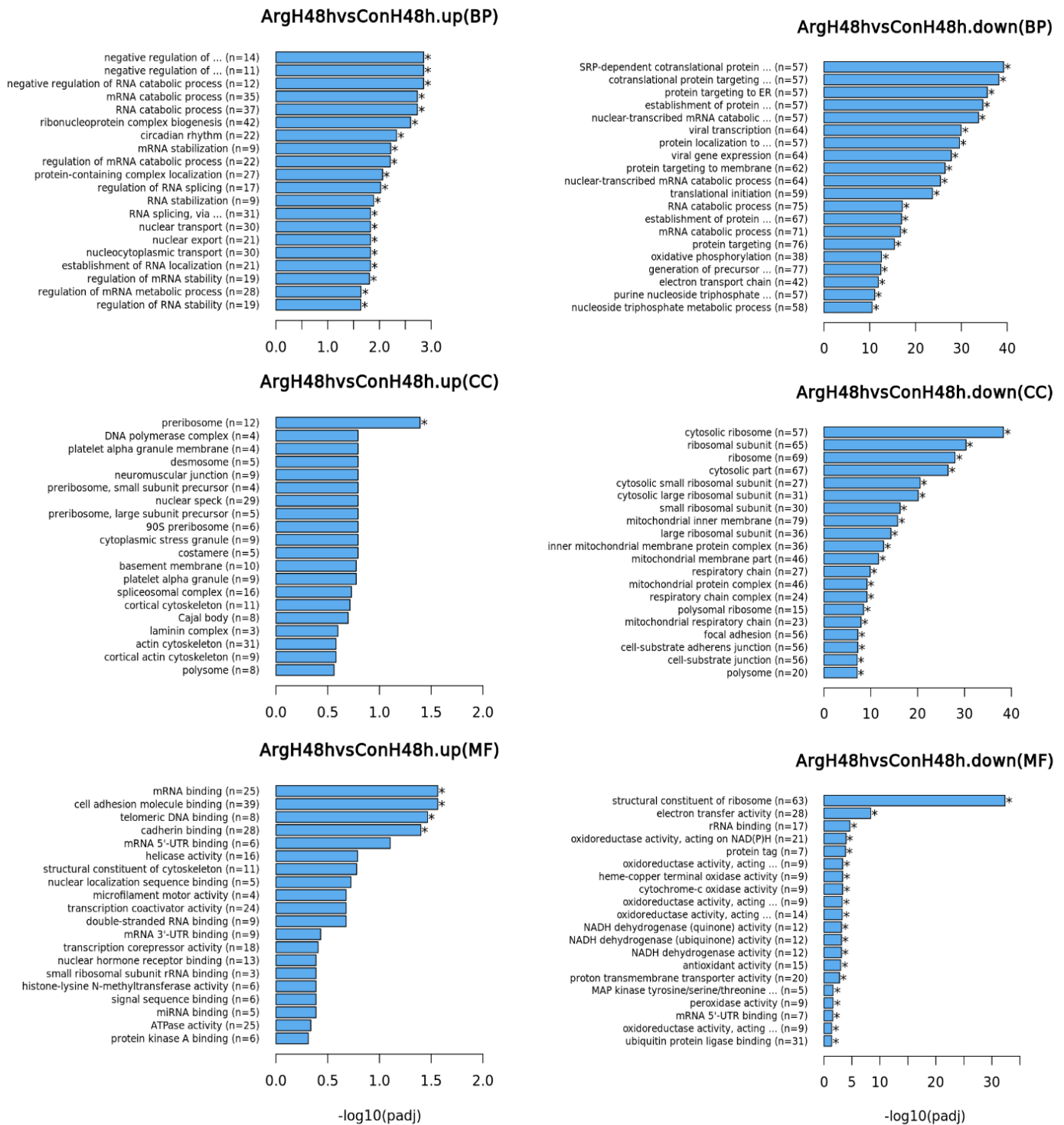
Figure S3: Top 20 upregulated and downregulated enriched gene ontology (GO) terms (biological processes/BP, molecular functions/MF, and cellular components/CC) 48 hours after Arg treatment under high glucose conditions.
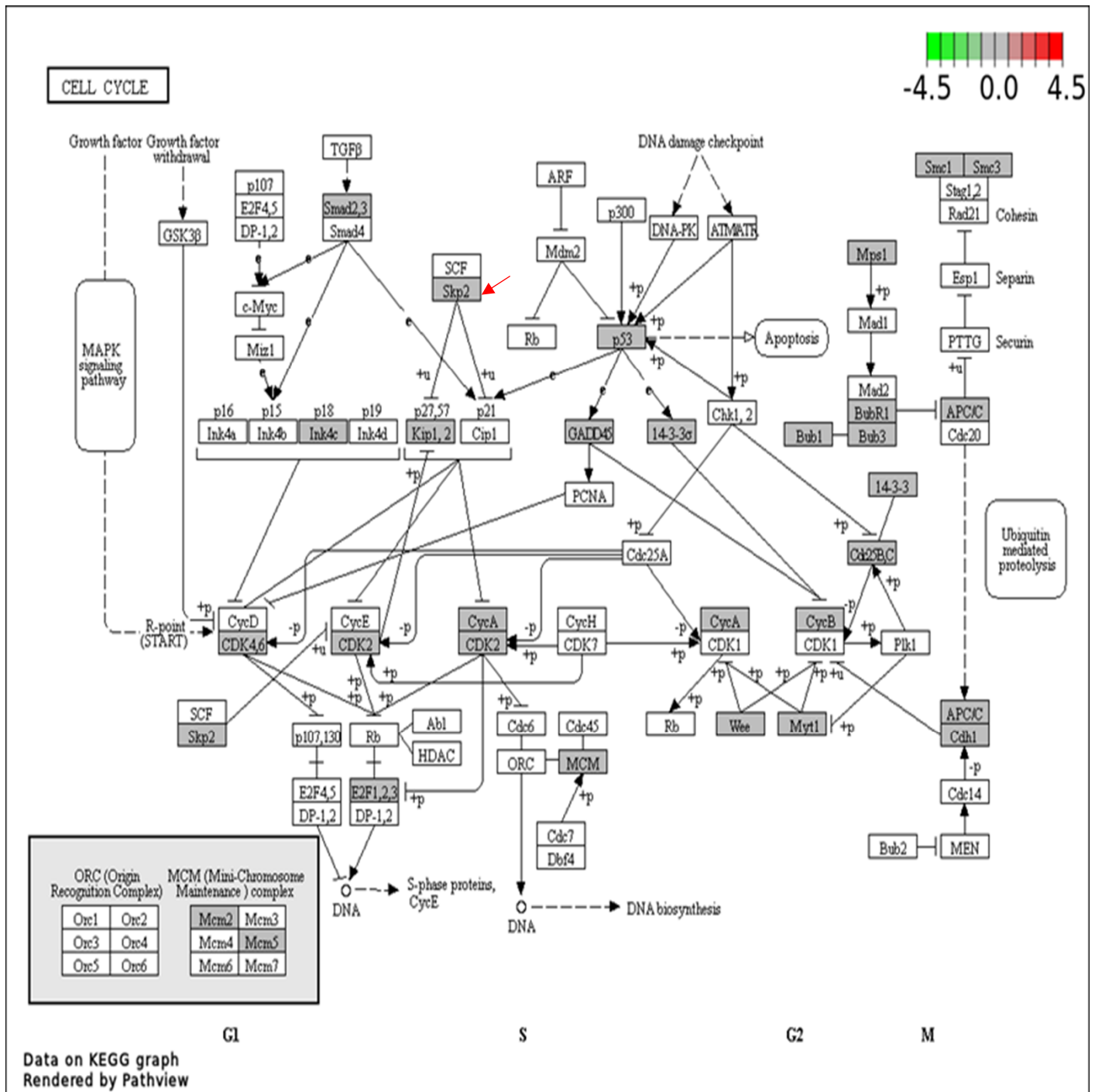
Figure S4: Significantly upregulated cell cycle pathway in Enriched Kyoto Encyclopedia of Genes and Genomes (KEGG) 24 hours after Arg treatment under high glucose conditions
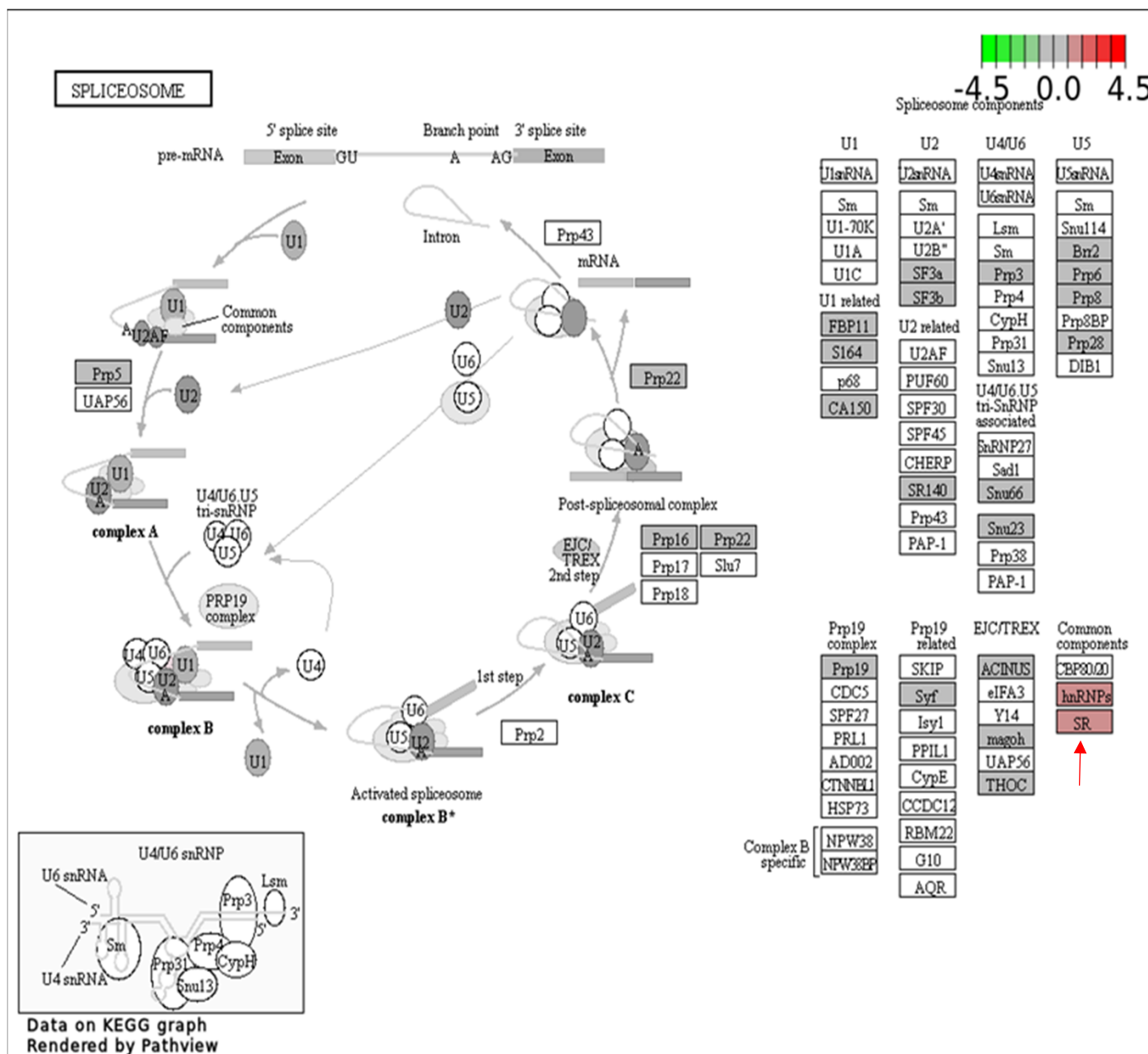
Figure S5: Significantly upregulated spliceosome pathway in Enriched Kyoto Encyclopedia of Genes and Genomes (KEGG) 24 hours after Arg treatment under high glucose conditions.
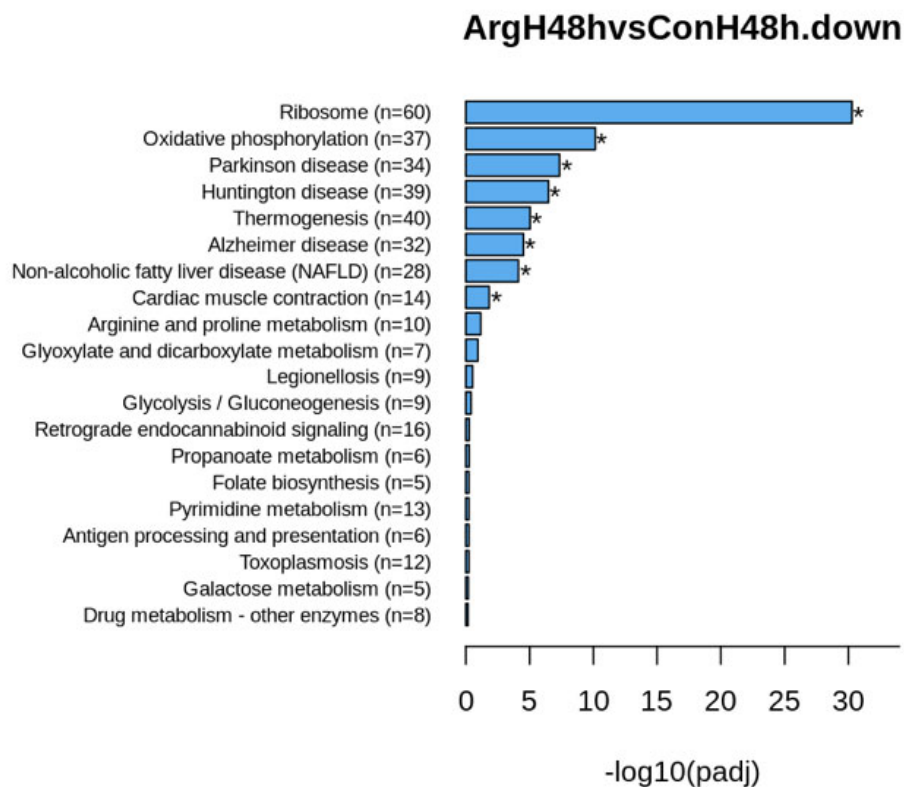
Figure S6: Significantly upregulated RNA transport in Enriched Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway 24 hours after Arg treatment under high glucose conditions.
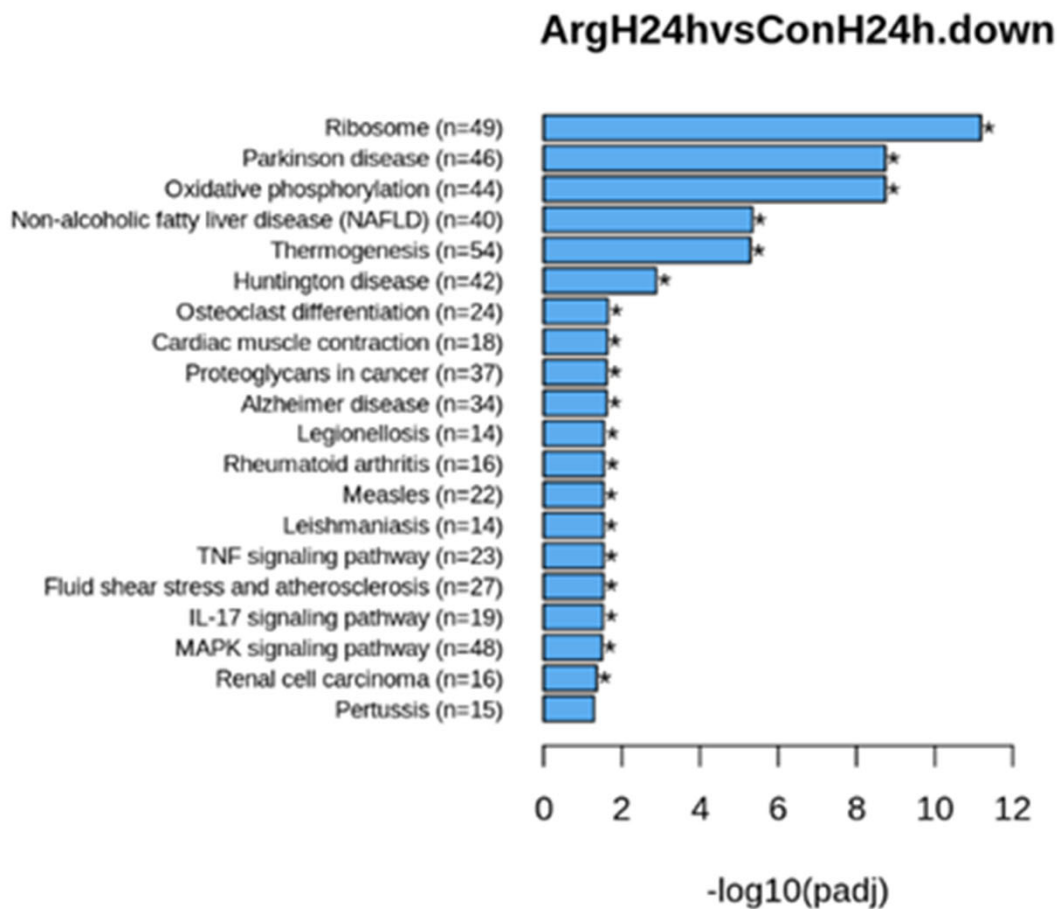
ArgH24hvsConH24h.down

ArgH48hvsConH48h.down

Figure S7: Top 20 downregulated enriched Kyoto Encyclopedia of Genes and Genomes (KEGG) pathways 24 and 48 hours after Arg treatment under high glucose conditions.