## Additional file 3: Table S2.

Cenes involved in Metabolism of RNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_MRNA  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_ME	FDR q-value 5.5E-51 5.61E-51 2.21E-48 4.15E-42 4.68E-42 4.68E-42 2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21 3.79E-19
REACTOME_METABOLISM_OF_MRNA  Genes involved in Metabolism of mRNA  REACTOME_METABOLISM_OF_MRNA  Genes involved in Metabolism of mRNA  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_METABOLISM_OF_PROTEINS  REACTOME_PROTIDE_CHAIN_ELONGATION  REACTOME_PROTIDE_CHAIN_ELONGATION  REACTOME_PROTIDE_CHAIN_ELONGATION  REACTOME_PROTIDE_CHAIN_ELONGATION  REACTOME_PROTIDE_CHAIN_ELONGATION  REACTOME_NORDON_COMPLEX  REACTOME_METABOLISM_OF_PROTEINS_AND_REPLAY  Genes involved in Monsense Mediated Decay Enhanced by the Exon Junction Complex  REACTOME_MEDIATE_REACTIONS_COMPLEX  REACTOME_MEDIATE_REACTIONS_COMPLEX  REACTOME_MEDIATE_REACTIONS_COMPLEX  REACTOME_ADAPTIVE_PROSPHORYATION  REACTOME_ADAPTIVE_PROSPHORYATION  REACTOME_ADAPTIVE_PROSPHORYATION  REACTOME_ADAPTIVE_MINUS_SYSTEM  Genes involved in Adaptive immune System  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_ADAPTIVE_MESSOR_DECAY  REACTOME_COMPLEX_AND_SUBSECULENT  REACTOME_ORDER TO A SUBSECULENT  RE	5.61E-51 2.21E-48 4.15E-42 4.68E-42 4.68E-42 2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21
REACTOME_TRANSLATION Genes involved in Metabolism of mRNA REACTOME_TRANSLATION Genes involved in 3"-UTR-mediated translational regulation REACTOME_TRANSLATION Genes involved in 3"-UTR-mediated translational regulation REACTOME_METABOLISM_OF_PROTEINS Genes involved in Metabolism of proteins REACTOME_METABOLISM_OF_PROTEINS Genes involved in Metabolism of proteins REACTOME_METABOLISM_OF_PROTEINS Genes involved in Metabolism of proteins REACTOME_METABOLISM_OF_PROTEINS REACTOME_PEPTIDE_CHAIN_ELONGATION REACTOME_PEPTIDE_CHAIN_ELONGATION REACTOME_PEPTIDE_CHAIN_ELONGATION REACTOME_PEPTIDE_CHAIN_ELONGATION REACTOME_NONSENSE_MEDIATED_DECAY_ENHANCED_BY_THE EXXDN_JUNCTION COMPLEX REACTOME_INFLUENZA_VIRAL_ENAL_TRANSCRIPTION_AND_REPLICATION REACTOME_INFLUENZA_VIRAL_ENAL_TRANSCRIPTION_AND_REPLICATION REACTOME_SPD_DEPENDENT_COTRANSLATIONAL_PROTEIN_TRANSCRIPTION_AND_REPLICATION REACTOME_MEMBRANE Genes involved in Influenza Viral RNA Transcription and Replication REACTOME_MEMBRANE Genes involved in SRP dependent cotranslational protein targeting to membrane ARACTOME_ADAPTIVE_PHOSPHORYLATION Genes involved in SRP dependent cotranslational protein targeting to membrane ARACTOME_ADAPTIVE_INMLONE_SYSTEM Genes involved in Influenza Viral RNA Transcription and Replication Genes involved in Influenza Viral RNA Transcription and Replication REACTOME_ADAPTIVE_INMLONE_SYSTEM Genes involved in Influenza Viral RNA Transcription and Replication Genes involved in Adaptive Immune System Genes involved in Adaptive Immune System  Genes involved in Formation of the ternary complex, and subsequently influence System  REACTOME_INFLUENCE_VIRAL_PROSPHORYLAND_ETS_AND_SUBSEQUENTY ENDINGS TO ASS  REACTOME_INFLUENCE_VIRAL_PROSPHORYLAND_ETS_AND_SUBSEQUENTY ENDINGS TO ASS  REACTOME_INFLUENCE_VIRAL_PROSPHORYLAND_ETS_AND_SUBSEQUENTY ENDINGS TO ASS  Genes involved in Formation of the ternary complex, and subsequenty binding to ASS  Genes involved in Province of the mRNA upon binding of the cap-binding complex and elfs, and subsequenty binding to ASS  Genes in	2.21E-48 4.15E-42 4.68E-42 2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21
REACTOME_NETRANSLATION REACTOME_S_UTR_MEDIATED_TRANSLATIONAL_REGULATION REACTOME_S_UTR_MEDIATED_TRANSLATIONAL_REGULATION REACTOME_NETRADOLISM_OF_PROTEINS REACTOME_INFLUENZA_LIFE_CYCLE Genes involved in Metabolism of proteins REACTOME_NONERNSE_MEDIATED_DECAY_ENHANCED_BY_ THE_EXON_JUNCTION_COMMEXE REACTOME_NONERNSE_MEDIATED_DECAY_ENHANCED_BY_ THE_EXON_JUNCTION_COMMEXE REACTOME_REVIEWERA_LIFE_CHAIN_ELONGATION REACTOME_MEDIATED_DECAY_ENHANCED_BY_ THE EXON_JUNCTION COMMEXE REACTOME_REVIEWERA_UTRLR_UTRANSCRIPTION_AND_ REPLICATION REACTOME_MEDIATED_DECAY_ENHANCED_BY_ THE EXON_JUNCTION COMMEXE REACTOME_REVIEWERA_UTRLR_UTRANSCRIPTION_AND_ REPLICATION REACTOME_MEDIATED_TRANSCRIPTION_AND_ REPLICATION REACTOME_MEDIATED_TRANSCRIPTION_AND_ REACTOME_REVIEWERA_UTRLR_U	4.15E-42 4.68E-42 2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21
REACTOME_SUTE_MEDIATED_TRANSLATIONAL_REGULATION  REACTOME_METABOLISM_OF_PROTEINS  Genes involved in Metabolism of proteins  REACTOME_METABOLISM_OF_PROTEINS  Genes involved in Metabolism of proteins  REACTOME_METUBEXZ_LIFE_CYCLE  Genes involved in Peptide chain elongation  REACTOME_MONSENSE _MEDIATED_DECAY_ENHANCED_BY_THE EXON JUNCTION COMMEX  REACTOME_INVOLVENZ_LIFE_AND_TRANSCRIPTION_AND_REPUGATION  REACTOME_MEURIZA_LIFE_AND_TRANSCRIPTION_AND_REPUGATION  REACTOME_MEURIZA_LIFE_AND_TRANSCRIPTION_AND_REPUGATION  REACTOME_MEURIZA_LIFE_AND_TRANSCRIPTION_AND_REPUGATION  REACTOME_MEURIZA_LIFE_AND_TRANSCRIPTION_AND_REPUGATION  REACTOME_MEURIZA_LIFE_AND_TRANSCRIPTION_AND_REPUGATION  REACTOME_MEURIZA_LIFE_AND_TRANSCRIPTION_AND_GEnes involved in Infilteenza Viral RNA Transcription and Replication  REACTOME_MOUNTS_SYSTEM  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in SRP-dependent cotranslational protein targeting to membrane  Genes involved in SRP-dependent cotranslational protein targeting to membrane  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Infilteenza Viral RNA Transcription and Replication  Genes involved in Adaptive Inmune System  Genes involved in Adaptive Inmune System  Genes involved in Infilterza Viral RNA Transcription and Replication  Genes involved in Formation of the ternary complex, and subsequently, the 435 complex  Genes involved in Formation of the ternary complex, and subsequently, the 435 complex and elf-s, and subsequently i	4.68E-42 4.68E-42 2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21
REACTOME_NOTIFICE_CYCLE  REACTOME_PRETIDE_CHAIN_ELONGATION  REACTOME_NOTIFICE_CYCLE  REACTOME_NOTIFICE_CYCLE_CYCLE  REACTOME_NOTIFICE_CYCLE_C	4.68E-42 2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 2.18E-23 3.19E-21
REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_REACTOME_PEPTIDE_DECAY_ENHANCED_BY_THE_EXON_JUNCTION COMPLEX  REACTOME_REACTOME_REAL_PRAN_TRANSCRIPTION_AND_REPUCATION  REACTOME_SRP_DEPENDENT_COTRANSLATIONAL_PROTEIN_ TRAGETINE OF MEMBRANE  REACTOME_IMMUNE_SYSTEM  Genes involved in SRP-dependent cotranslational protein targeting to membrane  REACTOME_IMMUNE_SYSTEM  Genes involved in SRP-dependent cotranslational protein targeting to membrane  REACTOME_MANARY_CONDATIVE_PHOSPHORYLATION  Genes encoding proteins involved in oxidative phosphorylation.  Genes involved in Adaptive immune System  Genes involved in Formation of the ternary complex, and subsequently, the 435 complex  Genes involved in Formation of the ternary complex, and subsequently, the 435 complex  Genes involved in Activation of the mRNA upon binding of the cap-binding complex and elfs, and subsequently binding to 43 binding to 44 binding to 45 bindi	2.02E-40 1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21
REACTOME_PEPTIDE_CHAIN_ELONGATION  REACTOME_NONSENSE_MEDIATED_DECAY_ENHANCED_BY_ HE EXON_JUNCTION_COMPLEX  REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_INCLUREZA_VIRAL_RNA_TRANSCRIPTION_AND_ REACTOME_SRP_DEPENDENT_COTRANSLATIONAL_PROTEIN_ TARGETING TO MEMBRANE  REACTOME_MINMUNE_SYSTEM  Genes involved in SRP-dependent cotranslational protein targeting to membrane  REACTOME_MINMUNE_SYSTEM  Genes encoding proteins involved in oxidative phosphorylation.  REACTOME_ADAPTIVE_INMUNE_SYSTEM  Genes involved in Adaptive Immune System  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSCQUENTY THE 43S_COMPLEX  REACTOME_ADAPTIVE_INMUNE_SYSTEM  Genes involved in Formation of the ternary complex, and subsequently, the 43S complex  REACTOME_ADAPTIVE_INMUNE_SYSTEM  Genes involved in Formation of the ternary complex, and subsequently, the 43S complex  REACTOME_ADAPTIVE_INCLUREDATE OF THE CAPE BINING COMPLEX_AND_SUBSCQUENT  REACTOME_ADAPTIVE_INFECTION  Genes involved in Activation of the mRNA upon binding of the cap-binding complex and ell's, and subsequent binding to 41S and subsequent b	1.11E-38 1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 4.16E-23 3.19E-21
REACTOME_NONSENSE_MEDIATED_DECAY_ENHANCED_BY_ THE EXON JUNCTION_COMPLEX REACTOME_INTRUBURAZ_VIRAL_RINA_TRANSCRIPTION_AND_ REPLICATION REACTOME_SPP_DEPENDENT_COTRANSLATIONAL_PROTEIN_ TARRETHING TO MEMBRANE REACTOME_SPP_DEPENDENT_COTRANSLATIONAL_PROTEIN_ TARRETHING TO MEMBRANE REACTOME_MINUS_SYSTEM Genes involved in SRP-dependent cotranslational protein targeting to membrane REACTOME_MINUS_SYSTEM Genes involved in Madaptive immune System  HALLMARK_OXIDATIVE_IMMUNE_SYSTEM Genes involved in Adaptive immune System  REACTOME_RORMATION_OF_THE_TERRANSY_COMPLEX_AND_ SUBSEQUENTLY THE 43S_COMPLEX REACTOME_RORMATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OF_THE_MINUS_OXIDATION_OXIDATION_OF_THE_MINUS_OXIDATION_OXIDATI	1.17E-38 1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 2.18E-23 3.19E-21
THE EXON JUNCTION COMPLEX  Genes involved in Influenza Viral RNA Transcription and Replication  Genes involved in Influenza Viral RNA Transcription and Replication  Genes involved in Influenza Viral RNA Transcription and Replication  REACTOME_INFLUENZA_VIRAL_RNA_TRANSCRIPTION_AND  Genes involved in SRP-dependent cotranslational protein targeting to membrane  REACTOME_INMUNE_SYSTEM  Genes involved in SRP-dependent cotranslational protein targeting to membrane  REACTOME_INMUNE_SYSTEM  Genes involved in Immune System  HALLMARK_OXIDATIVE_IPHOSPHORYLATION  Genes encoding proteins involved in oxidative phosphorylation.  Genes involved in Adaptive Immune System  REACTOME_PORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTY_THE_43S COMPLEX  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTY_THE_43S COMPLEX  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTY_THE_43S COMPLEX  REACTOME_OXIDATION_OF_THE_TERNARY_DEPON_BINDING_OF_THE_TERNARY_LOPON_BINDING_OF_T	1.36E-38 5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 2.18E-23 4.16E-23 3.19E-21
REPLICATION REACTOME_IMMUNE_STRP_DEPRIDENT_COTRANSLATIONAL_PROTEIN_ REACTOME_IMMUNE_SYSTEM Genes involved in SRP-dependent cotranslational protein targeting to membrane  REACTOME_IMMUNE_SYSTEM Genes involved in Immune System  HALLMARK_OXIDATIVE_IMMUNE_SYSTEM Genes encoding proteins involved in oxidative phosphorylation.  REACTOME_ADAPTIVE_IMMUNE_SYSTEM  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTLY_THE_43S_COMPLEX_AND_ SUBSEQUENTLY_THE_43S_COMPLEX_AND_EIFS_AND_SUBSEQUENT BINDING_TO_43S  REACTOME_ADAPTIVE_IMMUNE_SYSTEM  Genes involved in Formation of the ternary complex, and subsequently, the 43S complex  Genes involved in Formation of the ternary complex, and subsequently, the 43S complex  Genes involved in Formation of the ternary complex, and subsequent binding to 43S  REACTOME_HIV_INFECTION  Genes involved in Activation of the mRNA upon binding of the cap-binding complex and eIFs, and subsequent binding to 43S  REACTOME_HIV_INFECTION  Genes involved in HIV Infection  HALLMARK_MYC_TARGETS_V1  A subgroup of genes regulated by MYC - version 1 (v1).  HALLMARK_MTORC1_SIGNALING  Genes involved in DNA Replication  Genes involved in DNA Replication  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in Host Interactions of HIV factors  Genes involved in DNA Replication  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Gell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  Huntington's disease  HALLMARK_PS3_PATHWAY  Genes involved in Mitotic M-MyG1 phases  REACTOME_MITOTIC_M_G1_PHASES  Genes involved in Mitotic M-MyG1 phases  REACTOME_CELL_CYCLE_ Genes involved in DNM Streams Signaling Events Of B Cell Receptor (BCR)  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR BCR  REACTOME_APO_FOCIOR_ORDITATED_DEGRADATION_OF_  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_C_CLOCZO_MEDIATED_DEGRADATION_OF_  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)	5.85E-36 1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 2.18E-23 4.16E-23 3.19E-21
REACTOME_INMUNE_SYSTEM Genes involved in SM-Publication in Involved in Instructional protein targeting to Theinioraine REACTOME_INMUNE_SYSTEM Genes involved in Instruction involved in oxidative phosphorylation.  Genes involved in Adaptive Immune System  REACTOME_PORMATION_OF_THE_TERNARY_COMPLEX_AND_SUBSEQUENTY THE 43S COMPLEX  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_SUBSEQUENTY THE 43S COMPLEX  Genes involved in Formation of the ternary complex, and subsequently, the 43S complex  REACTOME_COMPLEX_AND_EIFS_AND_SUBSEQUENT  BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT  BINDING_TO_43S  REACTOME_HIV_INFECTION  Genes involved in HIV Infection  HALLMARK_MYC_TARGETS_V1  A subgroup of genes regulated by MYC - version 1 (v1).  HALLMARK_MTORC1_SIGNALING  Genes involved in DNA Replication  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in DNA Replication  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Cell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  HALLMARK_PS_PATHWAY  Genes involved in post part and networks.  REACTOME_MITOTIC_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle Checkpoints  Genes involved in Cell Cycle Checkpoints  Genes involved in Cell Cycle Cell Cycle Genes involved in Cell Cycle Checkpoints  Genes involved	1.26E-33 6.2E-27 4.25E-25 3.52E-24 1.53E-23 2.18E-23 4.16E-23 3.19E-21
HALLMARK_OXIDATIVE_PHOSPHORYLATION  Genes encoding proteins involved in oxidative phosphorylation.  REACTOME_ADAPTIVE_IMMUNE_SYSTEM  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTLY THE 43S COMPLEX  REACTOME_ATCHINION_OF_THE_MERNAL UPON_BINDING_OF_THE_ACTIVITION_OF_THE_MERNAL UPON_BINDING_OF_THE_AP_BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT BINDING_TO_43S  REACTOME_HIV_INFECTION  Genes involved in Activation of the mRNA upon binding of the cap-binding complex and eIFs, and subsequent binding to 43S  REACTOME_HIV_INFECTION  Genes involved in HIV Infection  HALLMARK_MYC_TARGETS_V1  A subgroup of genes regulated by MYC - version 1 (v1).  HALLMARK_MTCR1_SIGNALING  Genes involved in HIV Infection  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in Host Interactions of HIV factors  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Cell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  HALLMARK_PS3_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APC_C_CCCC20_MEDIATED_DEGRADATION_OF_  Genes involved in Adaptive immune System  Genes involved in Adaptive immune System  Genes involved in Cell Cycle  Genes involved in Apoptosis  REACTOME_APC_C_CCCC20_MEDIATED_DEGRADATION_OF_  Genes involved in Apoptosis	6.2E-27 4.25E-25 3.52E-24 1.53E-23 2.18E-23 4.16E-23 3.19E-21
REACTOME_ADAPTIVE_IMMUNE_SYSTEM  REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTY_THE_43S_COMPLEX  REACTOME_ACTIVATION_OF_THE_MENA_UPON_BINDING_OF_ THE_CAP_BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT BINDING_TO_43S  REACTOME_ACTIVATION_OF_THE_MENA_UPON_BINDING_OF_ THE_CAP_BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT BINDING_TO_43S  REACTOME_HIV_INFECTION  Genes involved in Activation of the mRNA upon binding of the cap-binding complex and eifs, and subsequent binding to 43S  REACTOME_HIV_INFECTION  Genes involved in HIV Infection  HALLMARK_MYC_TARGETS_V1  A subgroup of genes regulated by MYC - version 1 (v1).  HALLMARK_MTORC1_SIGNALING  Genes up-regulated through activation of mTORC1 complex.  REACTOME_DNA_REPLICATION  Genes involved in Host Interactions of HIV factors  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Gell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in Apoptosis	4.25E-25 3.52E-24 1.53E-23 2.18E-23 4.16E-23 3.19E-21
REACTOME_FORMATION_OF_THE_TERNARY_COMPLEX_AND_ SUBSEQUENTLY THE 43S COMPLEX  REACTOME_ACTIVATION_OF_THE_MINA_UPON_BINDING_OF_ THE CAP_BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT BINDING_TO_43S  REACTOME_BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT BINDING_TO_43S  REACTOME_HIV_INFECTION  REACTOME_HIV_INFECTION  REACTOME_HIV_INFECTION  REACTOME_DNA_REPLICATION  REACTOME_DNA_REPLICATION  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  REACTOME_CELL_CYCLE_MITOTIC  REGG_HUNTINGTONS_DISEASE  HALLMARK_PS3_PATHWAY  REACTOME_CELL_CYCLE_MITOTIC  REGG_RAINHONS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  REACTOME_MITOTIC_M_M_G1_PHASES  REACTOME_MITOTIC_M_M_G1_PHASES  REACTOME_CELL_CYCLE  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_	3.52E-24 1.53E-23 2.18E-23 4.16E-23 3.19E-21
SUBSEQUENTLY THE 43S COMPLEX REACTOME_ACTIVATION_OF_THE_MRNA_UPON_BINDING_OF_THE_CAP_BINDING_COMPLEX_AND_SUBSEQUENT_BINDING_COMPLEX_AND_SUBSEQUENT_BINDING_COMPLEX_AND_SUBSEQUENT_BINDING_TO_43S  REACTOME_HIV_INFECTION  HALLMARK_MYC_TARGETS_V1  HALLMARK_MTORC1_SIGNALING  REACTOME_DNA_REPLICATION  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  REACTOME_CELL_CYCLE_MITOTIC  REGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in PS3 pathways and networks.  REGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  REACTOME_CELL_CYCLE  REACTOME_CELL_CYCLE  Genes involved in Mitotic M-M/G1 phases  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Mitotic M-M/G1 phases  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  FRACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  FR	1.53E-23 2.18E-23 4.16E-23 3.19E-21
SUBSEQUENTE THE 42S COUNTE AS TO SUBSEQUENT  REACTOME ACTIVATION OF THE MRNA_UPON_BINDING_OF THE CAP_BINDING_COMPLEX_AND_EIFS_AND_SUBSEQUENT  BINDING_TO_43S  REACTOME_HIV_INFECTION  HALLMARK_MYC_TARGETS_V1  HALLMARK_MYC_TARGETS_V1  HALLMARK_MYC_TARGETS_V1  HALLMARK_MTORC1_SIGNALING  Genes unvolved in HIV Infection  HALLMARK_MTORC1_SIGNALING  Genes unvolved in DNA Replication  REACTOME_DNA_REPLICATION  Genes involved in DNA Replication  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in Host Interactions of HIV factors  Genes involved in Cell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in Apoptosis  REACTOME_APO_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in Apoptosis	2.18E-23 4.16E-23 3.19E-21
REACTOME_HIV_INFECTION  Genes involved in HIV Infection  HALLMARK_MYC_TARGETS_V1  A subgroup of genes regulated by MYC - version 1 (v1).  HALLMARK_MTORC1_SIGNALING  Genes up-regulated through activation of mTORC1 complex.  REACTOME_DNA_REPLICATION  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in DNA Replication  REACTOME_CELL_CYCLE_MITOTIC  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle Checkpoints  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APPC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in ADO/Cycle20 mediated decordation of mitotic particles of the pitotic particles of the properties o	4.16E-23 3.19E-21
HALLMARK_MYC_TARGETS_V1  A subgroup of genes regulated by MYC - version 1 (v1).  HALLMARK_MTORC1_SIGNALING  Genes up-regulated through activation of mTORC1 complex.  REACTOME_DNA_REPLICATION  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in DNA Replication  REACTOME_CELL_CYCLE_MITOTIC  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APOPTOSIS  Genes involved in Apoptosis  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in Apof(SCA2D_mediated_degradation_of mitotic protesies.)	4.16E-23 3.19E-21
HALLMARK_MTORC1_SIGNALING  Genes up-regulated through activation of mTORC1 complex.  REACTOME_DNA_REPLICATION  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Host Interactions of HIV factors  REACTOME_CELL_CYCLE_MITOTIC  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle Checkpoints  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ REACTOME_APOPTOSIS  Genes involved in Apoptosis  REACTOME_APOC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APOC/C-Gd-20 mediated degradation of mitotic proteins.	3.19E-21
REACTOME_DNA_REPLICATION  REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  Genes involved in DNA Replication  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Cell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Apoptosis  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APC/C/Cdc20_mediated decordation of mitotic proteins.	
REACTOME_HOST_INTERACTIONS_OF_HIV_FACTORS  REACTOME_CELL_CYCLE_MITOTIC  Genes involved in Cell Cycle, Mitotic  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Apoptosis  Genes involved in Apoptosis	3./9E-19
REACTOME_CELL_CYCLE_MITOTIC  KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE, CHECKPOINTS  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APOC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APO(Code) mediated decordation of mitotic proteins.	2 2 4 5 4 2
KEGG_HUNTINGTONS_DISEASE  HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_C_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APO/CSCdc20_mediated degradation_of_mitotic proteins.	3.94E-19
HALLMARK_P53_PATHWAY  Genes involved in p53 pathways and networks.  KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle Checkpoints  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_C_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APO/CSCdc20_mediated decordation of mitotic proteins.	4.27E-19
KEGG_ALZHEIMERS_DISEASE  REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  REACTOME_CELL_CYCLE  REACTOME_CELL_CYCLE  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_CC_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_ REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_ REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_ REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_ REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_ REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_ REACTOME_APC_CC_CDC20_MEDIATED_DE	6.92E-19
REACTOME_MITOTIC_M_M_G1_PHASES  Genes involved in Mitotic M-M/G1 phases  KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle Checkpoints  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APOC_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APC/C5/Cdc20_mediated degradation of mitotic proteins.	1.14E-17
KEGG_PARKINSONS_DISEASE  REACTOME_CELL_CYCLE  Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS  Genes involved in Cell Cycle Checkpoints  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APOPTOSIS  Genes involved in Apoptosis  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_	1.59E-17
REACTOME_CELL_CYCLE Genes involved in Cell Cycle  REACTOME_CELL_CYCLE_CHECKPOINTS Genes involved in Cell Cycle Checkpoints  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APOPTOSIS Genes involved in Apoptosis  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_	2.78E-17
REACTOME_CELL_CYCLE_CHECKPOINTS  REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_CC_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_CC_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APC/CC/Cdc20_mediated_degradation_of_mitotic proteins	4.26E-17
REACTOME_DOWNSTREAM_SIGNALING_EVENTS_OF_B_CELL_ RECEPTOR_BCR  REACTOME_APOPTOSIS  Genes involved in Downstream Signaling Events Of B Cell Receptor (BCR)  REACTOME_APO_C_C_CDC20_MEDIATED_DEGRADATION_OF_  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APC/C/C/c20_mediated_degradation_of_mitotic proteins	4.53E-17
RECEPTOR BCR  REACTOME_APOPTOSIS  Genes involved in Apoptosis  REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_  Genes involved in APC/C/C/c/20 mediated degradation of mitotic proteins.	4.74E-16
REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF	6.77E-15
	8.43E-15
	1.09E-14
HALLMARK_DNA_REPAIR Genes involved in DNA repair.	1.17E-14
REACTOME_TCA_CYCLE_AND_RESPIRATORY_ELECTRON_ TRANSPORT  Genes involved in The citric acid (TCA) cycle and respiratory electron transport	1.61E-14
REACTOME_METABOLISM_OF_AMINO_ACIDS_AND_ DERIVATIVES  Genes involved in Metabolism of amino acids and derivatives	2.11E-14
REACTOME_CLASS_I_MHC_MEDIATED_ANTIGEN_PROCESSING PRESENTATION Genes involved in Class I MHC mediated antigen processing & presentation	2.12E-14
REACTOME_REGULATION_OF_MITOTIC_CELL_CYCLE Genes involved in Regulation of mitotic cell cycle	2.77E-14
KEGG_OXIDATIVE_PHOSPHORYLATION Oxidative phosphorylation	3.69E-14
REACTOME_APC_C_CDH1_MEDIATED_DEGRADATION_OF_CDC20_AND_OTHER_APC_C_CDH1_TARGETED_PROTEINS_IN_LATE_MITOSIS_EARLY_G1  Genes involved in APC/C:Cdh1 mediated degradation of Cdc20 and other APC/C:Cdh1 targeted proteins in late mitosis/early G1	8.91E-14
REACTOME_SYNTHESIS_OF_DNA Genes involved in Synthesis of DNA	1.7E-13
HALLMARK_UNFOLDED_PROTEIN_RESPONSE  Genes up-regulated during unfolded protein response, a cellular stress response related to the endoplasmic reticulum.	2.37E-13
REACTOME_METABOLISM_OF_CARBOHYDRATES Genes involved in Metabolism of carbohydrates	3.54E-13
REACTOME_SIGNALING_BY_THE_B_CELL_RECEPTOR_BCR  Genes involved in Signaling by the B Cell Receptor (BCR)	3.89E-13
REACTOME MITOTIC G1 G1 S PHASES  Genes involved in Mitotic G1-G1/S phases	<del> </del>
PID P73PATHWAY p73 transcription factor network	3.91E-13
REACTOME_ANTIGEN_PROCESSING_UBIQUITINATION_ PROTEASOME DEGRADATION Genes involved in Antigen processing: Ubiquitination & Proteasome degradation	3.91E-13 6.02E-13
REACTOME_S_PHASE Genes involved in S Phase	
REACTOME_S_TRIAGE  REACTOME_REGULATION_OF_APOPTOSIS  Genes involved in Regulation of Apoptosis	6.02E-13
REACTOME_ANTIGEN_PROCESSING_CROSS_PRESENTATION Genes involved in Antigen processing-Cross presentation	6.02E-13 6.02E-13
HALLMARK_E2F_TARGETS  Genes encoding cell cycle related targets of E2F transcription factors.	6.02E-13 6.02E-13 8.00E-13

## Table S3.

Gene Set Name  HALLMARK_E2F_TARGETS  HALLMARK_G2M_CHECKPOINT  REACTOME_CELL_CYCLE	Description  Genes encoding cell cycle related targets of E2F transcription factors.	FDR q-value
HALLMARK_G2M_CHECKPOINT		8.05E-87
	Genes involved in the G2/M checkpoint, as in progression through the cell division cycle.	6.58E-72
10.10.00.00.00.00.00.00.00.00.00.00.00.0	Genes involved in Cell Cycle	1.3E-48
REACTOME_CELL_CYCLE_MITOTIC	Genes involved in Cell Cycle, Mitotic	1.33E-48
REACTOME DNA REPLICATION	Genes involved in DNA Replication	1.25E-37
REACTOME_MITOTIC_M_M_G1_PHASES	Genes involved in Mitotic M-M/G1 phases	4.15E-29
HALLMARK_TNFA_SIGNALING_VIA_NFKB	Genes regulated by NF-kB in response to TNF [GeneID=7124].	1.89E-28
KEGG_CELL_CYCLE	Cell cycle	3.17E-24
HALLMARK_EPITHELIAL_MESENCHYMAL_TRANSITION	Genes defining epithelial-mesenchymal transition, as in wound healing, fibrosis and metastasis.	7.54E-24
HALLMARK_ESTROGEN_RESPONSE_EARLY	Genes defining early response to estrogen.	4.99E-23
HALLMARK_MITOTIC_SPINDLE	Genes important for mitotic spindle assembly.	4.99E-23
NABA_MATRISOME	Ensemble of genes encoding extracellular matrix and extracellular matrix-associated proteins	6.49E-23
HALLMARK_GLYCOLYSIS	Genes encoding proteins involved in glycolysis and gluconeogenesis.	3.33E-22
REACTOME_MITOTIC_G1_G1_S_PHASES	Genes involved in Mitotic G1-G1/S phases	3.99E-21
HALLMARK ESTROGEN RESPONSE LATE	Genes defining late response to estrogen.	1.54E-20
HALLMARK_MYC_TARGETS_V1	A subgroup of genes regulated by MYC - version 1 (v1).	1.54E-20
REACTOME IMMUNE SYSTEM	Genes involved in Immune System	6.24E-20
	E2F transcription factor network	2.48E-19
PID_E2F_PATHWAY	Genes involved in Mitotic Prometaphase	
REACTOME_MITOTIC_PROMETAPHASE		3.7E-18 4.12E-18
HALLMARK_HYPOXIA	Genes up-regulated in response to low oxygen levels (hypoxia).	4.12E-18 4.12E-18
HALLMARK_P53_PATHWAY	Genes involved in p53 pathways and networks.	
REACTOME_DNA_STRAND_ELONGATION	Genes involved in DNA strand elongation	1.07E-17
REACTOME_G1_S_TRANSITION	Genes involved in G1/S Transition	1.1E-17
REACTOME_S_PHASE	Genes involved in S Phase	4.18E-17
HALLMARK_APOPTOSIS	Genes mediating programmed cell death (apoptosis) by activation of caspases.	8.92E-17
NABA_MATRISOME_ASSOCIATED	Ensemble of genes encoding ECM-associated proteins including ECM-affilaited proteins, ECM regulators and secreted factors	1.48E-16
PID_FOXM1_PATHWAY	FOXM1 transcription factor network	6.28E-16
REACTOME_DNA_REPAIR	Genes involved in DNA Repair	8.22E-16
HALLMARK_INFLAMMATORY_RESPONSE	Genes defining inflammatory response.	4.71E-15
HALLMARK_KRAS_SIGNALING_UP	Genes up-regulated by KRAS activation.	4.71E-15
PID_P53_DOWNSTREAM_PATHWAY	Direct p53 effectors	6.47E-15
PID_AURORA_B_PATHWAY	Aurora B signaling	6.47E-15
PID_PLK1_PATHWAY	PLK1 signaling events	1.65E-14
KEGG_PATHWAYS_IN_CANCER	Pathways in cancer	1.85E-14
HALLMARK_IL2_STAT5_SIGNALING	Genes up-regulated by STAT5 in response to IL2 stimulation.	2.31E-14
HALLMARK_MTORC1_SIGNALING	Genes up-regulated through activation of mTORC1 complex.	2.31E-14
REACTOME_SYNTHESIS_OF_DNA	Genes involved in Synthesis of DNA	1.39E-13
REACTOME_E2F_MEDIATED_REGULATION_OF_DNA_ REPLICATION	Genes involved in E2F mediated regulation of DNA replication	2.32E-13
HALLMARK_UV_RESPONSE_DN	Genes down-regulated in response to ultraviolet (UV) radiation.	1.19E-12
REACTOME_G2_M_CHECKPOINTS	Genes involved in G2/M Checkpoints	2.39E-12
REACTOME UNWINDING OF DNA	Genes involved in Unwinding of DNA	5.13E-12
KEGG DNA REPLICATION	DNA replication	7.62E-12
REACTOME_ACTIVATION_OF_THE_PRE_REPLICATIVE_	Genes involved in Activation of the pre-replicative complex	8.74E-12
COMPLEX KEGG_OOCYTE_MEIOSIS	Oocyte meiosis	2.91E-11
REACTOME_CELL_CYCLE_CHECKPOINTS	Genes involved in Cell Cycle Checkpoints	3.42E-11
REACTOME DOUBLE STRAND BREAK REPAIR	Genes involved in Double-Strand Break Repair	4.9E-11
HALLMARK COMPLEMENT	Genes encoding components of the complement system, which is part of the innate immune system.	7.72E-11
REACTOME_CHROMOSOME_MAINTENANCE	Genes involved in Chromosome Maintenance	1.41E-10
PID P73PATHWAY	p73 transcription factor network	1.69E-10
PID_RB_1PATHWAY	Regulation of retinoblastoma protein	2.64E-10