```
GSE46606 IRF4 KO VS WT UNSTIM BCELL UP, GSE46606 IRF4 KO VS WT UNSTIM BCELL UP
                                                                                                                                  GSE26343_WT_VS_NFAT5_KO_MACROPHAGE_UP, GSE26343_WT_VS_NFAT5_KO_MACROPHAGE_UP
                                                                                                                                  GSE24726_WT_VS_E2_2_KO_PDC_DAY6_POST_DELETION_DN, GSE24726_WT_VS_E2_2_KO_PDC_DAY6_POST_DELETION_DN
                                                                                                                                  GSE7348_UNSTIM_VS_TOLERIZED_AND_LPS_STIM_MACROPHAGE_UP, GSE7348_UNSTIM_VS_TOLERIZED_AND_LPS_STIM_MACROPHAGE_UP
                                                                                                                                  GSE23308 WT VS MINERALCORTICOID REC KO MACROPHAGE UP, GSE23308 WT VS MINERALCORTICOID REC KO MACROPHAGE UP
                                                                                                                                 GSE11864_CSF1_VS_CSF1_IFNG_PAM3CYS_IN_MAC_UP, GSE11864_CSF1_VS_CSF1_IFNG_PAM3CYS_IN_MAC_UP
                                                                                                                                 GSE17721_LPS_VS_GARDIQUIMOD_6H_BMDC_DN, GSE17721_LPS_VS_GARDIQUIMOD_6H_BMDC_DN
                                                                                                                                  GSE32986_CURDLAN_LOWDOSE_VS_CURDLAN_HIGHDOSE_STIM_DC_UP, GSE32986_CURDLAN_LOWDOSE_VS_CURDLAN_HIGHDOSE_STIM_DC_UP
                                                                                                                                  GSE42724_NAIVE_BCELL_VS_PLASMABLAST_DN, GSE42724_NAIVE_BCELL_VS_PLASMABLAST_DN
                                                                                                                                  GSE17721_CTRL_VS_GARDIQUIMOD_4H_BMDC_UP, GSE17721_CTRL_VS_GARDIQUIMOD_4H_BMDC_UP
                                                                                                                                 GSE10240_IL17_VS_IL17_AND_IL22_STIM_PRIMARY_BRONCHIAL_EPITHELIAL_CELLS_UP, GSE10240_IL17_VS_IL17_AND_IL22_STIM_PRIMARY_BRONCHIAL_EPITHELIA
                                                                                                                                  GSE6092 IFNG VS IFNG AND B BURGDORFERI INF ENDOTHELIAL CELL UP, GSE6092 IFNG VS IFNG AND B BURGDORFERI INF ENDOTHELIAL CELL UP
                                                                                                                                 GSE24210_CTRL_VS_IL35_TREATED_TCONV_CD4_TCELL_UP, GSE24210_CTRL_VS_IL35_TREATED_TCONV_CD4_TCELL_UP
                                                                                                                                 GSE4590_PRE_BCELL_VS_LARGE_PRE_BCELL_DN, GSE4590_PRE_BCELL_VS_LARGE_PRE_BCELL_DN
                                                                                                                                 GSE9239_CTRL_VS_TNF_INHIBITOR_TREATED_DC_UP, GSE9239_CTRL_VS_TNF_INHIBITOR_TREATED_DC_UP
                                                                                                                                 GSE9037_CTRL_VS_LPS_4H_STIM_IRAK4_KO_BMDM_UP, GSE9037_CTRL_VS_LPS_4H_STIM_IRAK4_KO_BMDM_UP
                                                                                                                                 GSE22229_RENAL_TRANSPLANT_VS_HEALTHY_PBMC_DN, GSE22229_RENAL_TRANSPLANT_VS_HEALTHY_PBMC_DN
                                                                                                                                  GSE27786_BCELL_VS_NKCELL_DN, GSE27786_BCELL_VS_NKCELL_DN
                                                                                                                                  GSE13522_CTRL_VS_T_CRUZI_Y_STRAIN_INF_SKIN_IFNAR_KO_UP, GSE13522_CTRL_VS_T_CRUZI_Y_STRAIN_INF_SKIN_IFNAR_KO_UP
                                                                                                                                  MIR3190_3P, MIR3190_3P
                                                                                                                                  GSE17186_MEMORY_VS_NAIVE_BCELL_UP, GSE17186_MEMORY_VS_NAIVE_BCELL_UP
                                                                                                                                 MIR3920, MIR3920
                                                                                                                                 GSE39152_CD103_NEG_VS_POS_MEMORY_CD8_TCELL_UP, GSE39152_CD103_NEG_VS_POS_MEMORY_CD8_TCELL_UP
                                                                                                                                 BYSTRYKH_HEMATOPOIESIS_STEM_CELL_QTL_CIS, BYSTRYKH_HEMATOPOIESIS_STEM_CELL_QTL_CIS
                                                                                                                                  GSE8868 SPLEEN_VS_INTESTINE_CD11B_POS_CD11C_NEG_DC_DN, GSE8868_SPLEEN_VS_INTESTINE_CD11B_POS_CD11C_NEG_DC_DN
                                                                                                                                  GSE25123 WT VS PPARG KO MACROPHAGE IL4 STIM UP, GSE25123 WT VS PPARG KO MACROPHAGE IL4 STIM UP
                                                                                                                                  MIR2276_3P, MIR2276_3P
                                                                                                                                  MIR2115_5P, MIR2115_5P
                                                                                                                                 GOBP_REGULATION_OF_PROTEIN_BINDING, GOBP_REGULATION_OF_PROTEIN_BINDING
                                                                                                                                 HP_CLEFT_LIP, HP_CLEFT_LIP
                                                                                                                                 HP_LOW_ANTERIOR_HAIRLINE, HP_LOW_ANTERIOR_HAIRLINE
                                                                                                                                  MIR6509_3P, MIR6509_3P
                                                                                                                                  GSE25123 WT VS PPARG KO MACROPHAGE ROSIGLITAZONE STIM UP, GSE25123 WT VS PPARG KO MACROPHAGE ROSIGLITAZONE STIM UP
                                                                                                                                  GSE22282_HYPOXIA_VS_NORMOXIA_MYELOID_DC_DN, GSE22282_HYPOXIA_VS_NORMOXIA_MYELOID_DC_DN
                                                                                                                                  MIR10526_3P, MIR10526_3P
                                                                                                                                 MIR1285_3P, MIR1285_3P
                                                                                                                                  MIR3187_5P, MIR3187_5P
                                                                                                                                  GSE30083 SP1 VS SP3 THYMOCYTE DN, GSE30083 SP1 VS SP3 THYMOCYTE DN
                                                                                                                                  HP_APLASIA_HYPOPLASIA_OF_THE_EAR, HP_APLASIA_HYPOPLASIA_OF_THE_EAR
                                                                                                                                  GSE7852_TREG_VS_TCONV_LN_DN, GSE7852_TREG_VS_TCONV_LN_DN
                                                                                                                                  MIR6860, MIR6860
                                                                                                                                  PDGF_ERK_DN.V1_UP, PDGF_ERK_DN.V1_UP
                                                                                                                                  MIR5189_5P, MIR5189_5P
                                                                                                                                  MIR612, MIR612
                                                                                                                                  GOMF TRANSFERASE ACTIVITY TRANSFERRING HEXOSYL GROUPS, GOMF TRANSFERASE ACTIVITY TRANSFERRING HEXOSYL GROUPS
                                                                                                                                  GOBP_PROTEIN_O_LINKED_GLYCOSYLATION, GOBP_PROTEIN_O_LINKED_GLYCOSYLATION
                                                                                                                                  HP_COARCTATION_OF_AORTA, HP_COARCTATION_OF_AORTA
                                                                                                                                  GSE2770_UNTREATED_VS_TGFB_AND_IL12_TREATED_ACT_CD4_TCELL_2H_UP, GSE2770_UNTREATED_VS_TGFB_AND_IL12_TREATED_ACT_CD4_TCELL_2H_UP
                                                                                                                                  MIR1260A_MIR1260B, MIR1260A_MIR1260B
                                                                                                                                  MIR1915_3P, MIR1915_3P
                                                                                                                                 WP_JOUBERT_SYNDROME, WP_JOUBERT_SYNDROME
                                                                                                                                  MTOR_UP.V1_DN, MTOR_UP.V1_DN
                                                                                                                                  RUVBL2_TARGET_GENES, RUVBL2_TARGET_GENES
                                                                                                                                  HP_PROMINENT_NOSE, HP_PROMINENT_NOSE
                                                                                                                                  MIR2467_5P, MIR2467_5P
                                                                                                                                  GRE_C, GRE_C
                                                                                                                                  GOBP_POSITIVE_REGULATION_OF_AUTOPHAGY, GOBP_POSITIVE_REGULATION_OF_AUTOPHAGY
                                                                                                                                  GSE14415_INDUCED_TREG_VS_FOXP3_KO_INDUCED_TREG_IL2_CULTURE_DN, GSE14415_INDUCED_TREG_VS_FOXP3_KO_INDUCED_TREG_IL2_CULTURE_DN
                                                                                                                                  GOBP_MANNOSYLATION, GOBP_MANNOSYLATION
                                                                                                                                  GOBP_NEGATIVE_REGULATION_OF_PROTEIN_BINDING, GOBP_NEGATIVE_REGULATION_OF_PROTEIN_BINDING
                                                                                                                                  MIR4686, MIR4686
                                                                                                                                  ROSS_ACUTE_MYELOID_LEUKEMIA_CBF, ROSS_ACUTE_MYELOID_LEUKEMIA_CBF
                                                                                                                                  CHIANG_LIVER_CANCER_SUBCLASS_CTNNB1_UP, CHIANG_LIVER_CANCER_SUBCLASS_CTNNB1_UP
                                                                                                                                  MIR6758_5P, MIR6758_5P
                                                                                                                                  ZSCAN23_TARGET_GENES, ZSCAN23_TARGET_GENES
                                                                                                                                  MIR3120_5P, MIR3120_5P
                                                                                                                                  HP_SHORT_FOOT, HP_SHORT_FOOT
                                                                                                                                  GOMF_PROTEIN_SERINE_PHOSPHATASE_ACTIVITY, GOMF_PROTEIN_SERINE_PHOSPHATASE_ACTIVITY
                                                                                                                                  DHIMAN_PBMC_ATTENUVAX_AGE_15_25YO_SUBQ_7_OR_14DY_UP, DHIMAN_PBMC_ATTENUVAX_AGE_15_25YO_SUBQ_7_OR_14DY_UP
                                                                                                                                  MIR550B_3P, MIR550B_3P
                                                                                                                                  ATGTCAC_MIR489, ATGTCAC_MIR489
                                                                                                                                  DAVICIONI_PAX_FOXO1_SIGNATURE_IN_ARMS_UP, DAVICIONI_PAX_FOXO1_SIGNATURE_IN_ARMS_UP
                                                                                                                                 GTAAGAT_MIR200A, GTAAGAT_MIR200A
VT_CD40L_IL2_IL5_DAY1_STIMULATED_BCELL_UP, GSE46606_IRF4HIGH_VS_WT_CD40L_IL2_IL5_DAY1_STIMULATED_BCELL_UP
                                                                                                                                  GOBP_POSITIVE_REGULATION_OF_MITOCHONDRIAL_FISSION, GOBP_POSITIVE_REGULATION_OF_MITOCHONDRIAL_FISSION
                                                                                                                                  HP_ABNORMAL_ERYTHROCYTE_ENZYME_LEVEL, HP_ABNORMAL_ERYTHROCYTE_ENZYME_LEVEL
                                                                                                                                  GSE21063_CTRL_VS_ANTI_IGM_STIM_BCELL_8H_DN, GSE21063_CTRL_VS_ANTI_IGM_STIM_BCELL_8H_DN
                                                                                                                                  GOBP_NEGATIVE_REGULATION_OF_DNA_REPAIR, GOBP_NEGATIVE_REGULATION_OF_DNA_REPAIR
                                                                                                                                  GOBP_REGULATION_OF_CHROMATIN_BINDING, GOBP_REGULATION_OF_CHROMATIN_BINDING
                                                                                                                                  MIR5704, MIR5704
                                                                                                                                  GOMF_MANNOSYLTRANSFERASE_ACTIVITY, GOMF_MANNOSYLTRANSFERASE_ACTIVITY
                                                                                                                                  MIR1272, MIR1272
                                                                                                                                  HP_ABNORMALITY_OF_MIDBRAIN_MORPHOLOGY, HP_ABNORMALITY_OF_MIDBRAIN_MORPHOLOGY
                                                                                                                                  GOBP_PROTEOGLYCAN_METABOLIC_PROCESS, GOBP_PROTEOGLYCAN_METABOLIC_PROCESS
                                                                                                                                  KEGG_GLYCOSAMINOGLYCAN_BIOSYNTHESIS_CHONDROITIN_SULFATE, KEGG_GLYCOSAMINOGLYCAN_BIOSYNTHESIS_CHONDROITIN_SULFATE
                                                                                                                                  MIR15A_3P, MIR15A_3P
                                                                                                                                  MIR379 5P, MIR379 5P
                                                                                                                                  NIKOLSKY_BREAST_CANCER_6P24_P22_AMPLICON, NIKOLSKY_BREAST_CANCER_6P24_P22_AMPLICON
                                                                                                                                  HP_ABNORMALITY_OF_THE_COLUMELLA, HP_ABNORMALITY_OF_THE_COLUMELLA
                                                                                                                                  HP_BIPARIETAL_NARROWING, HP_BIPARIETAL_NARROWING
                                                                                                                                  GOBP_PEPTIDYL_TYROSINE_AUTOPHOSPHORYLATION, GOBP_PEPTIDYL_TYROSINE_AUTOPHOSPHORYLATION
                                                                                                                                  GOBP_PROTEOGLYCAN_BIOSYNTHETIC_PROCESS, GOBP_PROTEOGLYCAN_BIOSYNTHETIC_PROCESS
                                                                                                                                  HP_DEVELOPMENTAL_GLAUCOMA, HP_DEVELOPMENTAL_GLAUCOMA
                                                                                                                                  GSE40274_CTRL_VS_FOXP3_AND_SATB1_TRANSDUCED_ACTIVATED_CD4_TCELL_DN, GSE40274_CTRL_VS_FOXP3_AND_SATB1_TRANSDUCED_ACTIVATED_CD4_TCEI
                                                                                                                                  GOBP FUCOSYLATION, GOBP FUCOSYLATION
                                                                                                                                  HP_IMPAIRED_VISUOSPATIAL_CONSTRUCTIVE_COGNITION, HP_IMPAIRED_VISUOSPATIAL_CONSTRUCTIVE_COGNITION
                                                                                                                                  KEGG_GLYCOSPHINGOLIPID_BIOSYNTHESIS_GLOBO_SERIES, KEGG_GLYCOSPHINGOLIPID_BIOSYNTHESIS_GLOBO_SERIES
                                                                                                                                  HP_UPPER_LIMB_MUSCLE_WEAKNESS, HP_UPPER_LIMB_MUSCLE_WEAKNESS
                                                                                                                                  PPARG_01, PPARG_01
                                                                                                                                  HP_ABNORMALITY_OF_THE_PHALANGES_OF_THE_HALLUX, HP_ABNORMALITY_OF_THE_PHALANGES_OF_THE_HALLUX
                                                                                                                                  GOBP INOSITOL PHOSPHATE METABOLIC PROCESS, GOBP INOSITOL PHOSPHATE METABOLIC PROCESS
                                                                                                                                  GOBP_ENDOCARDIAL_CUSHION_DEVELOPMENT, GOBP_ENDOCARDIAL_CUSHION_DEVELOPMENT
                                                                                                                                  GOMF_LYSOPHOSPHOLIPID_ACYLTRANSFERASE_ACTIVITY, GOMF_LYSOPHOSPHOLIPID_ACYLTRANSFERASE_ACTIVITY
                                                                                                                                  GOBP CLEAVAGE FURROW FORMATION, GOBP CLEAVAGE FURROW FORMATION
                                                                                                                                  REACTOME_DOWNREGULATION_OF_ERBB2_SIGNALING, REACTOME_DOWNREGULATION_OF_ERBB2_SIGNALING
                                                                                                                                  HP_RETINAL_COLOBOMA, HP_RETINAL_COLOBOMA
                                                                                                                                  WP_WNT_SIGNALING_PATHWAY_NETPATH, WP_WNT_SIGNALING_PATHWAY_NETPATH
                                                                                                                                  GOBP_RESPONSE_TO_ISCHEMIA, GOBP_RESPONSE_TO_ISCHEMIA
                                                                                                                                  GOBP_POSITIVE_REGULATION_OF_PROTEIN_KINASE_B_SIGNALING, GOBP_POSITIVE_REGULATION_OF_PROTEIN_KINASE_B_SIGNALING
                                                                                                                                  GOBP_POLYOL_CATABOLIC_PROCESS, GOBP_POLYOL_CATABOLIC_PROCESS
                                                                                                                                  REACTOME_TRANSPORT_OF_NUCLEOTIDE_SUGARS, REACTOME_TRANSPORT_OF_NUCLEOTIDE_SUGARS
                                                                                                                                  GAVIN_IL2_RESPONSIVE_FOXP3_TARGETS_UP, GAVIN_IL2_RESPONSIVE_FOXP3_TARGETS_UP
                                                                                                                                  REACTOME_ELEVATION_OF_CYTOSOLIC_CA2_LEVELS, REACTOME_ELEVATION_OF_CYTOSOLIC_CA2_LEVELS
                                                                                                                                  GSE13762 CTRL VS 125 VITAMIND DAY5 DC DN, GSE13762 CTRL VS 125 VITAMIND DAY5 DC DN
                                                                                                                                  GSE40274_FOXP3_VS_FOXP3_AND_HELIOS_TRANSDUCED_ACTIVATED_CD4_TCELL_UP, GSE40274_FOXP3_VS_FOXP3_AND_HELIOS_TRANSDUCED_ACTIVATED_CD4_
                                                                                                                                  GOBP_NEGATIVE_REGULATION_OF_CELL_SUBSTRATE_JUNCTION_ORGANIZATION, GOBP_NEGATIVE_REGULATION_OF_CELL_SUBSTRATE_JUNCTION_ORGANIZA
                                                                                                                                  GOBP_HISTONE_H3_K36_DEMETHYLATION, GOBP_HISTONE_H3_K36_DEMETHYLATION
                                                                                                                                  GOMF_RACEMASE_AND_EPIMERASE_ACTIVITY_ACTING_ON_CARBOHYDRATES_AND_DERIVATIVES, GOMF_RACEMASE_AND_EPIMERASE_ACTIVITY_ACTING_ON
                                                                                                                                  GOMF_HISTONE_DEMETHYLASE_ACTIVITY_H3_K36_SPECIFIC, GOMF_HISTONE_DEMETHYLASE_ACTIVITY_H3_K36_SPECIFIC
                                                                                                                                  GOBP_DERMATAN_SULFATE_PROTEOGLYCAN_METABOLIC_PROCESS, GOBP_DERMATAN_SULFATE_PROTEOGLYCAN_METABOLIC_PROCESS
                                                                                                                                 GOBP_INSULIN_METABOLIC_PROCESS, GOBP_INSULIN_METABOLIC_PROCESS
                                                                                                                                  GOBP_LOCOMOTION_INVOLVED_IN_LOCOMOTORY_BEHAVIOR, GOBP_LOCOMOTION_INVOLVED_IN_LOCOMOTORY_BEHAVIOR
                                                                                                                                 HP_SHORT_COLUMELLA, HP_SHORT_COLUMELLA
                                                                                                                                 MIR8056, MIR8056
                                                                                                                                  WP_HEART_DEVELOPMENT, WP_HEART_DEVELOPMENT
                                                                                                                                  GSE29618_PRE_VS_DAY7_FLU_VACCINE_PDC_UP, GSE29618_PRE_VS_DAY7_FLU_VACCINE_PDC_UP
                                                                                                                                 GSE45365_NK_CELL_VS_CD11B_DC_UP, GSE45365_NK_CELL_VS_CD11B_DC_UP
                                                                                                                                  GOBP_STORE_OPERATED_CALCIUM_ENTRY, GOBP_STORE_OPERATED_CALCIUM_ENTRY
                                                                                                                                  GOBP_ADHERENS_JUNCTION_MAINTENANCE, GOBP_ADHERENS_JUNCTION_MAINTENANCE
                                                                                                                                 HP_ABNORMALITY_OF_THE_CRUS_OF_THE_HELIX, HP_ABNORMALITY_OF_THE_CRUS_OF_THE_HELIX
                                                                                                                                 HP_SLOW_PUPILLARY_LIGHT_RESPONSE, HP_SLOW_PUPILLARY_LIGHT_RESPONSE
                                                                                                                                 REACTOME_REPRESSION_OF_WNT_TARGET_GENES, REACTOME_REPRESSION_OF_WNT_TARGET_GENES
                                                                                                                                 HP_ABNORMAL_RIGHT_VENTRICULAR_FUNCTION, HP_ABNORMAL_RIGHT_VENTRICULAR_FUNCTION
                                                                                                                                 GOMF_INOSITOL_PHOSPHATE_PHOSPHATASE_ACTIVITY, GOMF_INOSITOL_PHOSPHATE_PHOSPHATASE_ACTIVITY
                                                                                                                                 REACTOME_SYNTHESIS_OF_PIPS_AT_THE_GOLGI_MEMBRANE, REACTOME_SYNTHESIS_OF_PIPS_AT_THE_GOLGI_MEMBRANE
                                                                                                                                 GOBP_SPERM_AXONEME_ASSEMBLY, GOBP_SPERM_AXONEME_ASSEMBLY
                                                                                                                                 HP_RECURRENT_INFECTION_OF_THE_GASTROINTESTINAL_TRACT, HP_RECURRENT_INFECTION_OF_THE_GASTROINTESTINAL_TRACT
                                                                                                                                 HP_WIDELY_SPACED_MAXILLARY_CENTRAL_INCISORS, HP_WIDELY_SPACED_MAXILLARY_CENTRAL_INCISORS
                                                                                                                                 GSE16450_CTRL_VS_IFNA_12H_STIM_MATURE_NEURON_CELL_LINE_UP, GSE16450_CTRL_VS_IFNA_12H_STIM_MATURE_NEURON_CELL_LINE_UP
                                                                                                                                 GCAAGAC_MIR431, GCAAGAC_MIR431
                                                                                                                                  GOBP_REGULATION_OF_NON_MEMBRANE_SPANNING_PROTEIN_TYROSINE_KINASE_ACTIVITY, GOBP_REGULATION_OF_NON_MEMBRANE_SPANNING_PROTEIN_
                                                                                                                                  HOFT_CD4_POSITIVE_ALPHA_BETA_MEMORY_T_CELL_BCG_VACCINE_AGE_18_45YO_7DY_UP, HOFT_CD4_POSITIVE_ALPHA_BETA_MEMORY_T_CELL_BCG_VACCIN
                                                                                                                                  GOBP_BLOOD_VESSEL_REMODELING, GOBP_BLOOD_VESSEL_REMODELING
                                                                                                                                  REACTOME_SIGNALING_BY_BMP, REACTOME_SIGNALING_BY_BMP
                                                                                                                                 GOBP_PHAGOLYSOSOME_ASSEMBLY, GOBP_PHAGOLYSOSOME_ASSEMBLY
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GOMF_BHLH_TRANSCRIPTION_FACTOR_BINDING, GOMF_BHLH_TRANSCRIPTION_FACTOR_BINDING

GOBP_RETINA_VASCULATURE_DEVELOPMENT_IN_CAMERA_TYPE_EYE, GOBP_RETINA_VASCULATURE_DEVELOPMENT_IN_CAMERA_TYPE_EYE

GOMF_TRANSMEMBRANE_RECEPTOR_PROTEIN_SERINE_THREONINE_KINASE_ACTIVITY, GOMF_TRANSMEMBRANE_RECEPTOR_PROTEIN_SERINE_THREONINE_KI

GSE42724_MEMORY_BCELL_VS_PLASMABLAST_DN, GSE42724_MEMORY_BCELL_VS_PLASMABLAST_DN

GSE22919_RESTING_VS_IL2_IL12_IL15_STIM_NK_CELL_DN, GSE22919_RESTING_VS_IL2_IL12_IL15_STIM_NK_CELL_DN