CLK1 Exon 4 Morpholino Non-targeting Morpholino **GSVA Scores** -1 -0.5 0 0.5 1 Treatment SULFUR METABOLISM
MATURITY ONSET DIABETES OF THE YOUNG
PRIMARY BILE ACID BIOSYNTHESIS ASCORBATE AND ALDARATE METABOLISM DRUG METABOLISM CYTOCHROME P450 METABOLISM OF XENOBIOTICS BY CYTOCHROME P450 PENTOSE AND GLUCURONATE INTERCONVERSIONS LIMONENE AND PINENE DEGRADATION BASE EXCISION REPAIR
GLYCOLYSIS GLUCONEOGENESIS
PROPANOATE METABOLISM ARGININE AND PROLINE METABOLISM NICOTINATE AND NICOTINAMIDE METABOLISM VALINE LEUCINE AND ISOLEUCINE DEGRADATION PENTOSE PHOSPHATE PATHWAY PYRUVATE METABOLISM TYPE II DIABETES MELLITUS TRYPTOPHAN METABOLISM **BUTANOATE METABOLISM** DNA REPLICATION
RIBOFLAVIN METABOLISM
CYSTEINE AND METHIONINE METABOLISM
PHOSPHATIDYLINOSITOL SIGNALING SYSTEM ONE CARBON POOL BY FOLATE INOSITOL PHOSPHATE METABOLISM FC GAMMA R MEDIATED PHAGOCYTOSIS **GLIOMA** PROSTATE CANCER PROGESTERONE MEDIATED OOCYTE MATURATION ALDOSTERONE REGULATED SODIUM REABSORPTION PORPHYRIN AND CHLOROPHYLL METABOLISM GLUTATHIONE METABOLISM RENIN ANGIOTENSIN SYSTEM LINOLEIC ACID METABOLISM ARACHIDONIC ACID METABOLISM STEROID HORMONE BIOSYNTHESIS RETINOL METABOLISM GLYCINE SERINE AND THREONINE METABOLISM PRION DISEASES NITROGEN METABOLISM STARCH AND SUCROSE METABOLISM DRUG METABOLISM OTHER ENZYMES COMPLEMENT AND COAGULATION CASCADES TAURINE AND HYPOTAURINE METABOLISM CIRCADIAN RHYTHM MAMMAL
NOD LIKE RECEPTOR SIGNALING PATHWAY
CYTOSOLIC DNA SENSING PATHWAY
NON HOMOLOGOUS END JOINING Ţ N GLYCAN BIOSYNTHESIS GLYCOSAMINOGLYCAN BIOSYNTHESIS CHONDROITIN SULFATE GLYCOSAMINOGLYCAN BIOSYNTHESIS KERATAN SULFATE AMINO SUGAR AND NUCLEOTIDE SUGAR METABOLISM STEROID BIOSYNTHESIS HOMOLOGOUS RECOMBINATION TERPENOID BACKBONE BIOSYNTHESIS PROTEIN EXPORT GLYCOSYLPHOSPHATIDYLINOSITOL GPI ANCHOR BIOSYNTHESIS LYSOSOME SPLICEOSOME **RIBOSOME** BIOSYNTHESIS OF UNSATURATED FATTY ACIDS REGULATION OF AUTOPHAGY GLYCOSAMINOGLYCAN BIOSYNTHESIS HEPARAN SULFATE SELENOAMINO ACID METABOLISM GLYCOSPHINGOLIPID BIOSYNTHESIS LACTO AND NEOLACTO SERIES LONG TERM DEPRESSION TYROSINE METABOLISM FOLATE BIOSYNTHESIS CALCIUM SIGNALING PATHWAY DILATED CARDIOMYOPATHY VASCULAR SMOOTH MUSCLE CONTRACTION HYPERTROPHIC CARDIOMYOPATHY HCM AXON GUIDANCE ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY ARVC JAK STAT SIGNALING PATHWAY PARKINSONS DISEASE DORSO VENTRAL AXIS FORMATION P53 SIGNALING PATHWAY **APOPTOSIS** TGF BETA SIGNALING PATHWAY T CELL RECEPTOR SIGNALING PATHWAY TOLL LIKE RECEPTOR SIGNALING PATHWAY MAPK SIGNALING PATHWAY B CELL RECEPTOR SIGNALING PATHWAY RIG I LIKE RECEPTOR SIGNALING PATHWAY **BLADDER CANCER** FRUCTOSE AND MANNOSE METABOLISM RENAL CELL CARCINOMA
LEUKOCYTE TRANSENDOTHELIAL MIGRATION
CARDIAC MUSCLE CONTRACTION GALACTOSE METABOLISM ALZHEIMERS DISEASE VASOPRESSIN REGULATED WATER REABSORPTION CELL CYCLE
UBIQUITIN MEDIATED PROTEOLYSIS OOCYTE MEIOSIS MISMATCH REPAIR CHRONIC MYELOID LEUKEMIA **ERBB SIGNALING PATHWAY** REGULATION OF ACTIN CYTOSKELETON NEUROTROPHIN SIGNALING PATHWAY HUNTINGTONS DISEASE CHEMOKINE SIGNALING PATHWAY ENDOMETRIAL CANCER ACUTE MYELOID LEUKEMIA PYRIMIDINE METABOLISM LONG TERM POTENTIATION
WNT SIGNALING PATHWAY
TIGHT JUNCTION
ADHERENS JUNCTION LYSINE DEGRADATION PATHOGENIC ESCHERICHIA COLI INFECTION NON SMALL CELL LUNG CANCER
GLYCOSPHINGOLIPID BIOSYNTHESIS GLOBO SERIES
SNARE INTERACTIONS IN VESICULAR TRANSPORT NOTCH SIGNALING PATHWAY HISTIDINE METABOLISM CITRATE CYCLE TCA CYCLE FATTY ACID METABOLISM ALANINE ASPARTATE AND GLUTAMATE METABOLISM PANTOTHENATE AND COA BIOSYNTHESIS **GNRH SIGNALING PATHWAY** FC EPSILON RI SIGNALING PATHWAY PURINE METABOLISM **MELANOGENESIS** MELANOMA ETHER LIPID METABOLISM O GLYCAN BIOSYNTHESIS **PEROXISOME** MTOR SIGNALING PATHWAY COLORECTAL CANCER PANCREATIC CANCER VEGF SIGNALING PATHWAY PATHWAYS IN CANCER PROXIMAL TUBULE BICARBONATE RECLAMATION **ENDOCYTOSIS** AMYOTROPHIC LATERAL SCLEROSIS ALS INSULIN SIGNALING PATHWAY BASAL CELL CARCINOMA PHENYLALANINE METABOLISM HEDGEHOG SIGNALING PATHWAY PPAR SIGNALING PATHWAY GAP JUNCTION GLYOXYLATE AND DICARBOXYLATE METABOLISM
BETA ALANINE METABOLISM
ALPHA LINOLENIC ACID METABOLISM
OLFACTORY TRANSDUCTION
GLYCOSAMINOGLYCAN DEGRADATION NEUROACTIVE LIGAND RECEPTOR INTERACTION CYTOKINE CYTOKINE RECEPTOR INTERACTION NUCLEOTIDE EXCISION REPAIR HEMATOPOIETIC CELL LINEAGE FOCAL ADHESION SMALL CELL LUNG CANCER RNA POLYMERASE OXIDATIVE PHOSPHORYLATION ECM RECEPTOR INTERACTION ADIPOCYTOKINE SIGNALING PATHWAY NATURAL KILLER CELL MEDIATED CYTOTOXICITY EPITHELIAL CELL SIGNALING IN HELICOBACTER PYLORI INFECTION **BASAL TRANSCRIPTION FACTORS** AMINOACYL TRNA BIOSYNTHESIS RNA DEGRADATION VIBRIO CHOLERAE INFECTION THYROID CANCER CELL ADHESION MOLECULES CAMS PRIMARY IMMUNODEFICIENCY GLYCEROLIPID METABOLISM GLYCEROPHOSPHOLIPID METABOLISM **ABC TRANSPORTERS** TASTE TRANSDUCTION GLYCOSPHINGOLIPID BIOSYNTHESIS GANGLIO SERIES SPHINGOLIPID METABOLISM SYSTEMIC LUPUS ERYTHEMATOSUS **PROTEASOME** LEISHMANIA INFECTION VIRAL MYOCARDITIS OTHER GLYCAN DEGRADATION VALINE LEUCINE AND ISOLEUCINE BIOSYNTHESIS ANTIGEN PROCESSING AND PRESENTATION INTESTINAL IMMUNE NETWORK FOR IGA PRODUCTION TYPE I DIABETES MELLITUS GRAFT VERSUS HOST DISEASE

AUTOIMMUNE THYROID DISEASE

ALLOGRAFT REJECTION

ASTHMA

Treatment

Mean GSVA score

Treatment