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

GRAFT VERSUS HOST DISEASE

-0.5

0.5

0.0

Mean GSVA score

Treatment