Pathway Group: m5.go.bp.v2024.1.Mm.entrez subset013 expression levels normalized per row (pathway) GOBP\_N\_TERMINAL\_PROTEIN\_LIPIDATION GOBP\_OLFACTORY\_LEARNING GOBP\_ONE\_CARBON\_METABOLIC\_PROCESS GOBP\_NONRIBOSOMAL\_PEPTIDE\_BIOSYNTHETIC\_PROCESS GOBP\_OPERANT\_CONDITIONING GOBP\_NEPHRIC\_DUCT\_FORMATION GOBP\_ONE\_CARBON\_COMPOUND\_TRANSPORT GOBP\_NEURON\_APOPTOTIC\_PROCESS GOBP\_NERVE\_DEVELOPMENT GOBP\_NEUROBLAST\_DIFFERENTIATION GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSLATIONAL\_ELONGATION GOBP\_NOREPINEPHRINE\_UPTAKE GOBP\_NEURON\_FATE\_SPECIFICATION GOBP\_OOCYTE\_CONSTRUCTION GOBP\_NEGATIVE\_REGULATION\_OF\_VOLTAGE\_GATED\_CALCIUM\_CHANNEL\_ACTIVITY GOBP\_NERVE\_GROWTH\_FACTOR\_SIGNALING\_PATHWAY GOBP\_OLIGOPEPTIDE\_TRANSPORT GOBP\_NEGATIVE\_REGULATION\_OF\_TRIGLYCERIDE\_CATABOLIC\_PROCESS GOBP\_NON\_PROTEINOGENIC\_AMINO\_ACID\_CATABOLIC\_PROCESS GOBP\_NUCLEOSIDE\_BISPHOSPHATE\_METABOLIC\_PROCESS GOBP\_NEUTRAL\_LIPID\_METABOLIC\_PROCESS | GOBP\_OBSERVATIONAL\_LEARNING GOBP\_NEURAL\_RETINA\_DEVELOPMENT GOBP\_NEUROPEPTIDE\_SIGNALING\_PATHWAY GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSMISSION\_OF\_NERVE\_IMPULSE GOBP\_NEUROMUSCULAR\_PROCESS\_CONTROLLING\_POSTURE GOBP\_NERVOUS\_SYSTEM\_PROCESS\_INVOLVED\_IN\_REGULATION\_OF\_SYSTEMIC\_ARTERIAL\_BLOOD\_PRESSURE GOBP\_N\_GLYCAN\_PROCESSING | GOBP\_NEURON\_PROJECTION\_REGENERATION GOBP\_NOREPINEPHRINE\_BIOSYNTHETIC\_PROCESS GOBP\_NEUTROPHIL\_MEDIATED\_KILLING\_OF\_FUNGUS GOBP\_NUCLEOSIDE\_MONOPHOSPHATE\_CATABOLIC\_PROCESS GOBP\_NUCLEOBASE\_METABOLIC\_PROCESS GOBP\_NITROGEN\_CYCLE\_METABOLIC\_PROCESS GOBP\_NEGATIVE\_REGULATION\_OF\_TRIGLYCERIDE\_METABOLIC\_PROCESS GOBP\_NON\_PROTEINOGENIC\_AMINO\_ACID\_METABOLIC\_PROCESS GOBP\_NUCLEOSIDE\_DIPHOSPHATE\_METABOLIC\_PROCESS GOBP\_NUCLEOSIDE\_DIPHOSPHATE\_CATABOLIC\_PROCESS GOBP\_NUCLEOSIDE\_PHOSPHATE\_CATABOLIC\_PROCESS GOBP\_NEGATIVE\_REGULATION\_OF\_TYPE\_B\_PANCREATIC\_CELL\_APOPTOTIC\_PROCESS | GOBP\_N\_ACYLETHANOLAMINE\_METABOLIC\_PROCESS GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSMEMBRANE\_TRANSPORT GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSPORTER\_ACTIVITY GOBP\_ORGANELLE\_ASSEMBLY GOBP\_NICOTINAMIDE\_NUCLEOTIDE\_BIOSYNTHETIC\_PROCESS GOBP\_NEGATIVE\_REGULATION\_OF\_VOLTAGE\_GATED\_POTASSIUM\_CHANNEL\_ACTIVITY GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSFERASE\_ACTIVITY GOBP\_NITRIC\_OXIDE\_SYNTHASE\_BIOSYNTHETIC\_PROCESS GOBP\_NEGATIVE\_REGULATION\_OF\_T\_CELL\_RECEPTOR\_SIGNALING\_PATHWAY Pathologist major category GOBP\_NEGATIVE\_REGULATION\_OF\_T\_CELL\_CYTOKINE\_PRODUCTION Spindle and epithelioid tumors GOBP\_NEGATIVE\_REGULATION\_OF\_TYPE\_II\_INTERFERON\_PRODUCTION GOBP\_NEGATIVE\_REGULATION\_OF\_T\_CELL\_MEDIATED\_CYTOTOXICITY GOBP\_NEUROINFLAMMATORY\_RESPONSE nf1 KO; pten KO; ink KO; atrx KO
nf1 KO; pten KO; ink KO; atrx wt
nf1 wt; pten KO; ink KO; atrx KO
nf1 wt; pten wt; ink wt; atrx wt GOBP\_NUCLEOTIDE\_BINDING\_OLIGOMERIZATION\_DOMAIN\_CONTAINING\_1\_SIGNALING\_PATHWAY | GOBP\_NEURON\_INTRINSIC\_APOPTOTIC\_SIGNALING\_PATHWAY\_IN\_RESPONSE\_TO\_OXIDATIVE\_STRESS GOBP\_NEGATIVE\_REGULATION\_OF\_TYROSINE\_PHOSPHORYLATION\_OF\_STAT\_PROTEIN GOBP\_NEGATIVE\_REGULATION\_OF\_VIRAL\_PROCESS GOBP\_NEGATIVE\_REGULATION\_OF\_VIRAL\_GENOME\_REPLICATION GOBP\_NEGATIVE\_REGULATION\_OF\_TYPE\_I\_INTERFERON\_PRODUCTION GOBP\_NUCLEOSIDE\_TRANSMEMBRANE\_TRANSPORT GOBP\_NUCLEOSIDE\_TRANSPORT GOBP\_OLIGOSACCHARIDE\_BIOSYNTHETIC\_PROCESS GOBP\_NITRIC\_OXIDE\_CGMP\_MEDIATED\_SIGNALING GOBP\_NODAL\_SIGNALING\_PATHWAY GOBP\_OPTIC\_NERVE\_MORPHOGENESIS GOBP\_NEUTROPHIL\_MEDIATED\_KILLING\_OF\_GRAM\_NEGATIVE\_BACTERIUM GOBP\_ODONTOGENESIS\_OF\_DENTIN\_CONTAINING\_TOOTH | GOBP\_NEUROPEPTIDE\_CATABOLIC\_PROCESS GOBP\_NEURAL\_TUBE\_PATTERNING GOBP\_NUCLEOTIDE\_TRANSMEMBRANE\_TRANSPORT GOBP\_NON\_LYTIC\_VIRAL\_RELEASE | GOBP\_NUCLEOPHAGY | GOBP\_NUCLEAR\_TRANSCRIBED\_MRNA\_CATABOLIC\_PROCESS\_DEADENYLATION\_DEPENDENT\_DECAY GOBP\_NUCLEAR\_MRNA\_SURVEILLANCE GOBP\_NITROGEN\_UTILIZATION GOBP\_NUCLEAR\_EXPORT | GOBP\_NEGATIVE\_REGULATION\_OF\_UBIQUITIN\_PROTEIN\_LIGASE\_ACTIVITY | GOBP\_NUCLEOSOME\_ORGANIZATION | GOBP\_NUCLEOSOME\_ASSEMBLY | GOBP\_NUCLEAR\_MIGRATION | GOBP\_NUCLEUS\_LOCALIZATION GOBP\_NUCLEIC\_ACID\_CATABOLIC\_PROCESS GOBP\_NUCLEOTIDE\_EXCISION\_REPAIR GOBP\_N\_TERMINAL\_PROTEIN\_AMINO\_ACID\_ACETYLATION GOBP\_NEGATIVE\_REGULATION\_OF\_UBIQUITIN\_DEPENDENT\_PROTEIN\_CATABOLIC\_PROCESS GOBP\_NUCLEOLAR\_CHROMATIN\_ORGANIZATION GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSLATION\_IN\_RESPONSE\_TO\_STRESS | GOBP\_NUCLEAR\_TRANSCRIBED\_MRNA\_CATABOLIC\_PROCESS\_DEADENYLATION\_INDEPENDENT\_DECAY GOBP\_NEGATIVE\_REGULATION\_OF\_T\_HELPER\_17\_TYPE\_IMMUNE\_RESPONSE GOBP\_NEGATIVE\_REGULATION\_OF\_VASOCONSTRICTION | GOBP\_NUCLEOSIDE\_SALVAGE GOBP\_NUCLEOBASE\_CONTAINING\_SMALL\_MOLECULE\_BIOSYNTHETIC\_PROCESS | GOBP\_NORRIN\_SIGNALING\_PATHWAY | GOBP\_N\_TERMINAL\_PEPTIDYL\_METHIONINE\_ACETYLATION GOBP\_NEGATIVE\_REGULATION\_OF\_TRANSLATION GOBP\_NUCLEAR\_SPECK\_ORGANIZATION

GOBP\_NEURAL\_FOLD\_FORMATION

GOBP\_NUCLEAR\_BODY\_ORGANIZATION

| GOBP\_NEURAL\_PLATE\_MORPHOGENESIS

| GOBP\_NUCLEAR\_TRANSCRIBED\_MRNA\_POLY\_A\_TAIL\_SHORTENING

Pathologist grade

Nerve sheath tumors

Glioneuronal tumors

No evidence of disease