

Supplement 2: The pathways in which the top ten mutated genes are involved

Pathway	TP53	RB1	RICTOR	ROS1	NTRK1	PTEN	KEAP1	MCL1	APC	Total
Pathways in cancer	+	+			+	+	+		+	6
Hepatocellular carcinoma	+	+				+	+		+	5
PI3K-Akt signaling pathway	+				+	+		+		4
MicroRNAs in cancer	+					+		+	+	4
Human papillomavirus infection	+	+				+			+	4
Human T-cell leukemia virus 1 infection	+	+				+			+	4
Breast cancer	+	+				+			+	4
Cellular senescence	+	+				+				3
mTOR signaling pathway		+	+			+				3
Central carbon metabolism in cancer	+				+	+				3
Melanoma	+	+				+				3
Prostate cancer	+	+				+				3
Autophagy - animal	+	+				+				3
Glioma	+	+				+				3
Apoptosis	+				+			+		3
p53 signaling pathway	+	+				+				3
Small cell lung cancer	+	+				+				3
Gastric cancer	+	+							+	3
Metabolic pathways		+				+			+	3
Endometrial cancer	+					+			+	3
Cell cycle	+	+							+	3
MAPK signaling pathway	+				+					2
Human cytomegalovirus infection	+	+								2
Hepatitis B	+	+								2
Endocrine resistance	+	+								2
Chronic myeloid leukemia	+	+								2
Viral carcinogenesis	+	+								2
Kaposi sarcoma-associated herpesvirus infection	+	+								2
Non-small cell lung cancer	+	+								2
JAK-STAT signaling pathway		+						+		2
Pancreatic cancer	+	+								2
Bladder cancer	+	+								2
Hepatitis C	+	+								2
Transcriptional misregulation in cancer	+				+					2

Methane metabolism		+								1
Biosynthesis of terpenoids and steroids						+				1
Nonribosomal peptide structures		+								1
Bacterial secretion system		+								1
Sesquiterpenoid and triterpenoid						+				1

Abberation: Pathway: the name of the pathway; Total: the total number of the genes involved in this pathway; +: this gene is involved in this pathway.