

Supplementary Table 2. GO Functions of Proteins Associating with Members of the Gene Signature

PROTEIN ID	FULL NAME	GO FUNCTION
ACTL6A	Actin-like 6A	ATP binding, chromatin binding, protein binding, transcription coactivator activity
SRCAP	Snf2-related CREBBP activator protein	ATP binding, DNA binding, helicase activity, histone acetyltransferase activity, hydrolase activity, nucleotide binding, transcription coactivator activity
EPC1	Enhancer of polycomb homolog 1	Contributes to histone acetyltransferase activity
KAT5	K(lysine) acetyltransferase 5	Androgen receptor binding, contributes to histone acetyltransferase activity, metal ion binding, protein binding, repressing transcription factor binding, transcription coactivator activity, transferase activity, transferring acyl groups other than amino-acyl groups
MDM2	p53 binding protein homolog	Enzyme binding, ligase activity, metal ion binding, p53 binding, protein binding, ubiquitin-protein ligase activity, zinc ion binding
RUVBL1	RuvB-like 1	ATP binding, NOT ATPase activity, DNA helicase activity, hydrolase activity, nucleotide binding, protein binding
RUVBL2	RuvB-like 2	ATP binding, ATP-dependent DNA helicase activity, contributes to ATPase activity, DNA helicase activity, damaged DNA binding hydrolase activity, identical protein binding, nucleotide binding, protein binding, unfolded protein binding
CHD3	Chromodomain helicase DNA binding protein 3	ATP binding, ATP-dependent DNA helicase activity, DNA binding, helicase activity, hydrolase activity, acting on acid anhydrides, in phosphorus-

		containing anhydrides, metal ion binding, nucleotide binding, protein binding, zinc ion binding
ING3	Inhibitor of growth family, member 3	Contributes to histone acetyltransferase activity, metal ion binding, methylated histone residue binding, zinc ion binding
DMAP1	DNA methyltransferase 1 associated protein 1	DNA binding, RNA polymerase II repressing transcription factor binding, methyltransferase activity, protein binding, transcription corepressor activity, transferase activity
C20orf20	Chromosome 20 open reading frame 20	Chromatin modification, regulation of growth, regulation of transcription, DNA-dependent
HDAC1	HDAC2 histone deacetylase 1	NAD-dependent histone deacetylase activity (H3-K14 specific), NAD-dependent histone deacetylase activity (H3-K9 specific), NAD-dependent histone deacetylase activity (H4-K16 specific), RNA polymerase II transcription corepressor activity, activating transcription factor binding, core promoter binding, enzyme binding, histone deacetylase activity (H3-K16 specific), histone deacetylase binding, hydrolase activity, protein binding, protein deacetylase activity, sequence-specific DNA binding transcription factor activity, transcription factor binding
HDAC2	HDAC2 histone deacetylase 2	NAD-dependent histone deacetylase activity (H3-K14 specific), NAD-dependent histone deacetylase activity (H3-K9 specific), NAD-dependent histone deacetylase activity (H4-K16 specific), chromatin binding, enzyme binding, histone deacetylase activity, histone deacetylase activity (H3-K16

		specific), hydrolase activity, protein binding, protein deacetylase activity, sequence-specific DNA binding, transcription factor binding
HDAC5	HDAC2 histone deacetylase 5	NAD-dependent histone deacetylase activity (H3-K14 specific), NAD-dependent histone deacetylase activity (H3-K9 specific), NAD-dependent histone deacetylase activity (H4-K16 specific), histone deacetylase activity, histone deacetylase activity (H3-K16 specific), hydrolase activity, protein binding, protein kinase C binding, repressing transcription factor binding, transcription factor binding, contributes to transcription regulatory region DNA binding
YBX1	Y box binding protein 1	DNA binding, RNA binding, double-stranded DNA binding, protein binding, sequence-specific DNA binding transcription factor activity, single-stranded DNA binding
PPP2R2D	Protein phosphatase 2, regulatory subunit B, delta	Phosphatidate phosphatase activity, protein phosphatase type 2A regulator activity
PSEN1	Presenilin 1	PDZ domain binding, aspartic-type endopeptidase activity, beta-catenin binding, cadherin binding, calcium channel activity, endopeptidase activity, peptidase activity, protein binding
YWHAZ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide	Protein binding, protein domain specific binding, transcription factor binding

YWHAQ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide	Protein N-terminus binding, protein binding, protein domain specific binding
MAP3K1	Mitogen-activated protein kinase kinase kinase 1	ATP binding, JUN kinase binding, JUN kinase kinase kinase activity, MAP kinase kinase kinase activity, MAP/ERK kinase kinase activity, identical protein binding, metal ion binding, mitogen-activated protein kinase binding, mitogen-activated protein kinase kinase binding, nucleotide binding, protein binding, protein kinase activity, protein kinase activity, protein kinase binding, protein serine/threonine kinase activity, sphingolipid binding, ubiquitin-protein ligase activity, zinc ion binding
MAP3K14	Mitogen-activated protein kinase kinase kinase 14	ATP binding, MAP kinase kinase kinase activity, NF-kappaB-inducing kinase activity, nucleotide binding, protein binding, protein kinase activity, protein serine/threonine kinase activity
TAB1	TGF-beta activated kinase 1/MAP3K7 binding protein 1	Catalytic activity, enzyme activator activity, kinase activator activity, protein binding
TAB2	TGF-beta activated kinase 1/MAP3K7 binding protein 2	K63-linked polyubiquitin binding, metal ion binding, protein binding, zinc ion binding
HSPA8	Heat shock 70kDa protein 8	ATP binding, ATPase activity, coupled, nucleotide binding, protein binding
TUBB	Tubulin, beta class I	GTP binding, GTPase activity, MHC class I protein binding, nucleotide binding, peptide binding, protein complex binding, structural constituent of

		cytoskeleton, structural molecule activity
NOP56	Ribonucleoprotein homolog	RNA binding, protein binding, snoRNA binding
SIN3B	SIN3 transcription regulator homolog B	Chromatin binding, protein binding, transcription corepressor activity