

Supplemental Figure S1A.**Proteins identified in the Molm14 Screen Alone**

	Molm14 # of peptides	IgG # of peptides
26S proteasome non-ATPase regulatory subunit 2 OS=Homo sapiens GN=PSMD2 PE=1 SV=3	2	0
5'-AMP-activated protein kinase subunit gamma-1 OS=Homo sapiens GN=PRKAG1 PE=1 SV=1	2	1
Abnormal spindle-like microcephaly-associated protein OS=Homo sapiens GN=ASPM PE=1 SV=2	6	1
Adenosylhomocysteinase OS=Homo sapiens GN=AHCY PE=1 SV=4	4	2
ADP-ribosylation factor-like protein 8B OS=Homo sapiens GN=ARL8B PE=1 SV=1	3	0
A-kinase anchor protein 7 isoform gamma OS=Homo sapiens GN=AKAP7 PE=2 SV=1	6	3
A-kinase anchor protein 8-like OS=Homo sapiens GN=AKAP8L PE=1 SV=3	4	2
Alpha-(1,6)-fucosyltransferase OS=Homo sapiens GN=FUT8 PE=1 SV=2	3	1
Alpha-actinin-4 OS=Homo sapiens GN=ACTN4 PE=1 SV=2	32	16
Alpha-enolase OS=Homo sapiens GN=ENO1 PE=1 SV=2	7	1
Aminopeptidase N OS=Homo sapiens GN=ANPEP PE=1 SV=4	17	2
Ankyrin OS=Homo sapiens GN=ANKRD14 PE=1 SV=2	5	1
AP-2 complex subunit alpha-2 OS=Homo sapiens GN=AP2A2 PE=1 SV=2	2	0
AP-2 complex subunit mu OS=Homo sapiens GN=AP2M1 PE=1 SV=2	5	0
Ataxin-2-like protein OS=Homo sapiens GN=ATXN2L PE=1 SV=2	12	6
ATPase family AAA domain-containing protein 3A OS=Homo sapiens GN=ATAD3A PE=1 SV=2	41	15
ATP-binding cassette sub-family E member 1 OS=Homo sapiens GN=ABCE1 PE=1 SV=1	3	1
ATP-dependent RNA helicase DDX55 OS=Homo sapiens GN=DDX55 PE=1 SV=3	2	1
Aurora kinase A-interacting protein OS=Homo sapiens GN=AURKAIP1 PE=1 SV=1	3	1
Bcl-2 homologous antagonist/killer OS=Homo sapiens GN=BAK1 PE=1 SV=1	2	0
Brain acid soluble protein 1 OS=Homo sapiens GN=BASP1 PE=1 SV=2	2	0
Calcium homeostasis endoplasmic reticulum protein OS=Homo sapiens GN=CHERP PE=1 SV=3	3	0
Calmodulin-like protein 3 OS=Homo sapiens GN=CALML3 PE=1 SV=2	3	0
Calmodulin-like protein 5 OS=Homo sapiens GN=CALML5 PE=1 SV=2	6	2
Calponin-2 OS=Homo sapiens GN=CNN2 PE=1 SV=4	2	0
Catechol O-methyltransferase OS=Homo sapiens GN=COMT PE=1 SV=2	2	0
CD44 antigen OS=Homo sapiens GN=CD44 PE=1 SV=2	12	2
Cell cycle regulator Mat89Bb homolog OS=Homo sapiens GN=C12orf11 PE=1 SV=2	3	1
Cell division cycle protein 23 homolog OS=Homo sapiens GN=CDC23 PE=1 SV=3	3	0
Chloride intracellular channel protein 1 OS=Homo sapiens GN=CLIC1 PE=1 SV=4	9	4
CLIP-associating protein 2 OS=Homo sapiens GN=CLASP2 PE=1 SV=2	6	2
Coatomer subunit gamma-2 OS=Homo sapiens GN=COPG2 PE=1 SV=1	2	0
Coiled-coil domain-containing protein 86 OS=Homo sapiens GN=CCDC86 PE=1 SV=1	5	2
Complement decay-accelerating factor OS=Homo sapiens GN=CD55 PE=1 SV=4	3	0
C-terminal-binding protein 1 OS=Homo sapiens GN=CTBP1 PE=1 SV=2	2	0
Cyclin-K OS=Homo sapiens GN=CCNK PE=1 SV=2	2	0
Desmoplakin OS=Homo sapiens GN=DSP PE=1 SV=3	13	5
DNA ligase 3 OS=Homo sapiens GN=LIG3 PE=1 SV=2	2	0
DNA mismatch repair protein Msh2 OS=Homo sapiens GN=MSH2 PE=1 SV=1	6	3
DNA topoisomerase 3-beta-1 OS=Homo sapiens GN=TOP3B PE=1 SV=1	2	0
DNA-binding protein RFX5 OS=Homo sapiens GN=RFX5 PE=1 SV=1	2	1
DNA-directed RNA polymerase II subunit RPB3 OS=Homo sapiens GN=POLR2C PE=1 SV=2	2	0
E3 ubiquitin-protein ligase DTX3L OS=Homo sapiens GN=DTX3L PE=1 SV=1	3	1
Ephrin type-A receptor 10 OS=Homo sapiens GN=EPHA10 PE=2 SV=1	6	2
Eukaryotic translation initiation factor 3 subunit D OS=Homo sapiens GN=EIF3D PE=1 SV=1	8	3
Eukaryotic translation initiation factor 3 subunit L OS=Homo sapiens GN=EIF3L PE=1 SV=1	4	2
Eukaryotic translation initiation factor 4 gamma 1 OS=Homo sapiens GN=EIF4G1 PE=1 SV=4	2	1
Exportin-5 OS=Homo sapiens GN=XPO5 PE=1 SV=1	5	2
Fibrinogen alpha chain OS=Homo sapiens GN=FGA PE=1 SV=2	18	0
Fibrinogen beta chain OS=Homo sapiens GN=FGB PE=1 SV=2	16	0
Fibrinogen gamma chain OS=Homo sapiens GN=FGG PE=1 SV=3	11	0
Formin-binding protein 4 OS=Homo sapiens GN=FNBP4 PE=1 SV=2	5	0
Galectin-7 OS=Homo sapiens GN=LGALS7 PE=1 SV=2	3	0
General transcription factor 3C polypeptide 1 OS=Homo sapiens GN=GTF3C1 PE=1 SV=4	7	3
General transcription factor 3C polypeptide 4 OS=Homo sapiens GN=GTF3C4 PE=1 SV=2	6	0
General vesicular transport factor p115 OS=Homo sapiens GN=USO1 PE=1 SV=2	2	1
Glioma tumor suppressor candidate region gene 2 protein OS=Homo sapiens GN=GLTSCR2 PE=1 SV=2	2	1
Glucose-6-phosphate isomerase OS=Homo sapiens GN=GPI PE=1 SV=4	4	1

Glutamate-rich WD repeat-containing protein 1 OS=Homo sapiens GN=GRWD1 PE=1 SV=1	6	1
Glutathione S-transferase omega-1 OS=Homo sapiens GN=GSTO1 PE=1 SV=2	4	1
GMP synthase [glutamine-hydrolyzing] OS=Homo sapiens GN=GMPS PE=1 SV=1	2	0
Guanine nucleotide-binding protein-like 3 OS=Homo sapiens GN=GNL3 PE=1 SV=2	4	0
HAUS augmin-like complex subunit 3 OS=Homo sapiens GN=HAUS3 PE=1 SV=1	2	0
Heat shock 70 kDa protein 1A/1B OS=Homo sapiens GN=HSPA1A PE=1 SV=5	30	9
Heat shock protein beta-1 OS=Homo sapiens GN=HSPB1 PE=1 SV=2	6	0
Heparan sulfate 2-O-sulfotransferase 1 OS=Homo sapiens GN=HS2ST1 PE=1 SV=1	3	0
Inositol 1,4,5-trisphosphate receptor type 1 OS=Homo sapiens GN=ITPR1 PE=1 SV=2	6	1
Insulin-like growth factor 2 mRNA-binding protein 1 OS=Homo sapiens GN=IGF2BP1 PE=1 SV=2	64	1
Insulin-like growth factor 2 mRNA-binding protein 2 OS=Homo sapiens GN=IGF2BP2 PE=1 SV=2	4	0
Interferon regulatory factor 2-binding protein 1 OS=Homo sapiens GN=IRF2BP1 PE=1 SV=1	15	3
Interferon-induced, double-stranded RNA-activated protein kinase OS=Homo sapiens GN=EIF2AK2 PE=1 SV=2	22	7
Keratin, type I cytoskeletal 13 OS=Homo sapiens GN=KRT13 PE=1 SV=4	3	1
Keratin, type I cytoskeletal 17 OS=Homo sapiens GN=KRT17 PE=1 SV=2	45	19
Keratin, type II cytoskeletal 6A OS=Homo sapiens GN=KRT6A PE=1 SV=3	47	16
Keratin, type II cytoskeletal 6B OS=Homo sapiens GN=KRT6B PE=1 SV=5	3	0
Keratin, type II cytoskeletal 73 OS=Homo sapiens GN=KRT73 PE=1 SV=1	10	3
Kinesin-like protein KIF13A OS=Homo sapiens GN=KIF13A PE=1 SV=2	5	2
KRR1 small subunit processome component homolog OS=Homo sapiens GN=KRR1 PE=1 SV=4	2	1
Lamin-B1 OS=Homo sapiens GN=LMNB1 PE=1 SV=2	16	5
Lamin-B2 OS=Homo sapiens GN=LMNB2 PE=1 SV=3	6	1
Leucine zipper protein 1 OS=Homo sapiens GN=LUZP1 PE=1 SV=2	4	1
Leucine-rich repeat-containing protein 47 OS=Homo sapiens GN=LRR47 PE=1 SV=1	12	1
Leucine-rich repeat-containing protein 8D OS=Homo sapiens GN=LRR8D PE=1 SV=1	11	5
Ligatin OS=Homo sapiens GN=LGTN PE=1 SV=3	2	0
Low molecular weight phosphotyrosine protein phosphatase OS=Homo sapiens GN=ACP1 PE=1 SV=3	3	0
Metastasis-associated protein MTA1 OS=Homo sapiens GN=MTA1 PE=1 SV=2	13	6
Microtubule-associated protein 1S OS=Homo sapiens GN=MAP1S PE=1 SV=2	14	7
Microtubule-associated protein 4 OS=Homo sapiens GN=MAP4 PE=1 SV=3	28	14
MORC family CW-type zinc finger protein 2 OS=Homo sapiens GN=MORC2 PE=1 SV=2	6	1
mRNA-capping enzyme OS=Homo sapiens GN=RNMT PE=1 SV=1	3	0
Multifunctional protein ADE2 OS=Homo sapiens GN=PAICS PE=1 SV=3	3	0
Myelin expression factor 2 OS=Homo sapiens GN=MYEF2 PE=1 SV=3	6	0
Myosin-IXb OS=Homo sapiens GN=MYO9B PE=1 SV=2	8	1
NADH dehydrogenase [ubiquinone] iron-sulfur protein 5 OS=Homo sapiens GN=NDUFS5 PE=1 SV=3	2	1
Nesprin-2 OS=Homo sapiens GN=SYNE2 PE=1 SV=3	10	4
Neuroguidin OS=Homo sapiens GN=NGDN PE=1 SV=1	3	1
Non-receptor tyrosine-protein kinase TYK2 OS=Homo sapiens GN=TYK2 PE=1 SV=3	2	0
Nostrin OS=Homo sapiens GN=NOSTRIN PE=1 SV=1	7	2
Nuclear pore complex protein Nup93 OS=Homo sapiens GN=NUP93 PE=1 SV=2	5	1
Nucleolar GTP-binding protein 1 OS=Homo sapiens GN=GTPBP4 PE=1 SV=3	18	9
Nucleoside diphosphate-linked moiety X motif 13 OS=Homo sapiens GN=NUDT13 PE=2 SV=3	3	1
Nucleosome assembly protein 1-like 1 OS=Homo sapiens GN=NAP1L1 PE=1 SV=1	8	1
Paired amphipathic helix protein Sin3a OS=Homo sapiens GN=SIN3A PE=1 SV=2	4	0
Paraspeckle component 1 OS=Homo sapiens GN=PSPC1 PE=1 SV=1	3	0
Paxillin OS=Homo sapiens GN=PXN PE=1 SV=2	2	0
PDZ and LIM domain protein 5 OS=Homo sapiens GN=PDLIM5 PE=1 SV=4	3	0
Peptidyl-prolyl cis-trans isomerase H OS=Homo sapiens GN=PPIH PE=1 SV=1	2	0
Plastin-2 OS=Homo sapiens GN=LCP1 PE=1 SV=5	10	2
Poly [ADP-ribose] polymerase 9 OS=Homo sapiens GN=PARP9 PE=1 SV=2	3	1
Polymerase I and transcript release factor OS=Homo sapiens GN=PTRF PE=1 SV=1	5	1
Pre-mRNA-processing-splicing factor 8 OS=Homo sapiens GN=PRPF8 PE=1 SV=2	28	3
Probable ATP-dependent RNA helicase DDX27 OS=Homo sapiens GN=DDX27 PE=1 SV=2	8	0
Probable ATP-dependent RNA helicase DDX47 OS=Homo sapiens GN=DDX47 PE=1 SV=1	2	0
Probable ATP-dependent RNA helicase DDX5 OS=Homo sapiens GN=DDX5 PE=1 SV=1	25	6
Probable ATP-dependent RNA helicase DHX36 OS=Homo sapiens GN=DHX36 PE=1 SV=1	4	1
Programmed cell death protein 2-like OS=Homo sapiens GN=PDCD2L PE=1 SV=1	2	1
Proline-, glutamic acid- and leucine-rich protein 1 OS=Homo sapiens GN=PELP1 PE=1 SV=2	3	1
Proteasome subunit alpha type-7 OS=Homo sapiens GN=PSMA7 PE=1 SV=1	4	1
Protein BUD31 homolog OS=Homo sapiens GN=BUD31 PE=1 SV=2	5	2

Protein diaphanous homolog 1 OS=Homo sapiens GN=DIAPH1 PE=1 SV=2	3	0
Protein disulfide-isomerase A6 OS=Homo sapiens GN=PDIA6 PE=1 SV=1	4	0
Protein lin-28 homolog B OS=Homo sapiens GN=LIN28B PE=1 SV=1	4	0
Protein RRP5 homolog OS=Homo sapiens GN=PCDC11 PE=1 SV=3	9	1
Protein S100-A8 OS=Homo sapiens GN=S100A8 PE=1 SV=1	3	1
Protein S100-A9 OS=Homo sapiens GN=S100A9 PE=1 SV=1	5	0
Protein transport protein Sec24C OS=Homo sapiens GN=SEC24C PE=1 SV=3	8	3
Pumilio domain-containing protein KIAA0020 OS=Homo sapiens GN=KIAA0020 PE=1 SV=3	4	1
Putative deoxyribonuclease TATDN2 OS=Homo sapiens GN=TATDN2 PE=1 SV=2	9	3
Ras-related protein Rab-22A OS=Homo sapiens GN=RAB22A PE=1 SV=2	3	0
Ras-related protein Rab-6A OS=Homo sapiens GN=RAB6A PE=1 SV=3	2	0
Ras-related protein Ral-A OS=Homo sapiens GN=RALA PE=1 SV=1	3	0
Replication factor C subunit 1 OS=Homo sapiens GN=RFC1 PE=1 SV=4	7	3
Reticulocalbin-2 OS=Homo sapiens GN=RCN2 PE=1 SV=1	2	0
Retinoblastoma-binding protein 5 OS=Homo sapiens GN=RBBP5 PE=1 SV=2	4	0
Rho guanine nucleotide exchange factor 1 OS=Homo sapiens GN=ARHGEF1 PE=1 SV=2	3	1
Rho guanine nucleotide exchange factor 2 OS=Homo sapiens GN=ARHGEF2 PE=1 SV=4	43	17
Ribosomal protein S6 kinase alpha-3 OS=Homo sapiens GN=RPS6KA3 PE=1 SV=1	2	0
Ribosomal RNA processing protein 1 homolog B OS=Homo sapiens GN=RRP1B PE=1 SV=3	9	3
Ribosome biogenesis protein BOP1 OS=Homo sapiens GN=BOP1 PE=1 SV=2	7	1
Ribosome-binding protein 1 OS=Homo sapiens GN=RRBP1 PE=1 SV=4	15	4
RNA-binding protein 27 OS=Homo sapiens GN=RBM27 PE=1 SV=2	9	1
RRP12-like protein OS=Homo sapiens GN=RRP12 PE=1 SV=2	11	0
SAGA-associated factor 29 homolog OS=Homo sapiens GN=CCDC101 PE=1 SV=1	2	1
SEC23-interacting protein OS=Homo sapiens GN=SEC23IP PE=1 SV=1	4	0
Selenocysteine-specific elongation factor OS=Homo sapiens GN=EEFSEC PE=1 SV=4	3	1
Semaphorin-7A OS=Homo sapiens GN=SEMA7A PE=1 SV=1	6	1
Serine/threonine-protein kinase MRCK beta OS=Homo sapiens GN=CDC42BPB PE=1 SV=2	11	0
Serine/threonine-protein kinase PRP4 homolog OS=Homo sapiens GN=PRPF4B PE=1 SV=2	5	1
Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform OS=Homo sapiens GN=PPP2CA PE=1 SV=1	3	1
Serum deprivation-response protein OS=Homo sapiens GN=SDPR PE=1 SV=3	3	0
Signal-induced proliferation-associated protein 1 OS=Homo sapiens GN=SIPA1 PE=1 SV=1	4	0
Sister chromatid cohesion protein PDS5 homolog B OS=Homo sapiens GN=PDS5B PE=1 SV=1	8	2
SNW domain-containing protein 1 OS=Homo sapiens GN=SNW1 PE=1 SV=1	7	3
Sorting nexin-33 OS=Homo sapiens GN=SNX33 PE=1 SV=1	10	3
Spectrin alpha chain, brain OS=Homo sapiens GN=SPTAN1 PE=1 SV=3	8	1
Spliceosome RNA helicase BAT1 OS=Homo sapiens GN=BAT1 PE=1 SV=1	8	3
Splicing factor 1 OS=Homo sapiens GN=SF1 PE=1 SV=4	6	2
Splicing factor 3A subunit 3 OS=Homo sapiens GN=SF3A3 PE=1 SV=1	3	1
Splicing factor U2AF 65 kDa subunit OS=Homo sapiens GN=U2AF2 PE=1 SV=4	7	1
Splicing factor, arginine/serine-rich 15 OS=Homo sapiens GN=SF3B1 PE=1 SV=3	3	1
Splicing factor, proline- and glutamine-rich OS=Homo sapiens GN=SFPQ PE=1 SV=2	62	31
Stress-induced-phosphoprotein 1 OS=Homo sapiens GN=STIP1 PE=1 SV=1	2	0
Structural maintenance of chromosomes protein 6 OS=Homo sapiens GN=SMC6 PE=1 SV=2	7	1
SUMO-activating enzyme subunit 2 OS=Homo sapiens GN=UBA2 PE=1 SV=2	2	0
Symplekin OS=Homo sapiens GN=SYMPK PE=1 SV=2	2	1
T-complex protein 1 subunit beta OS=Homo sapiens GN=CCT2 PE=1 SV=4	4	2
Transcription initiation factor TFIID subunit 6 OS=Homo sapiens GN=TAF6 PE=1 SV=1	3	1
Transcriptional repressor protein YY1 OS=Homo sapiens GN=YY1 PE=1 SV=2	2	0
Transgelin-2 OS=Homo sapiens GN=TAGLN2 PE=1 SV=3	2	0
Transketolase OS=Homo sapiens GN=TKT PE=1 SV=3	2	0
Translation initiation factor eIF-2B subunit beta OS=Homo sapiens GN=EIF2B2 PE=1 SV=3	2	1
Transmembrane and coiled-coil domains protein 1 OS=Homo sapiens GN=TMCC1 PE=1 SV=2	9	2
Tubulin alpha-1C chain OS=Homo sapiens GN=TUBA1C PE=1 SV=1	7	2
Tubulin--tyrosine ligase-like protein 12 OS=Homo sapiens GN=TTL12 PE=1 SV=2	2	1
Tumor suppressor candidate 3 OS=Homo sapiens GN=TUSC3 PE=2 SV=1	3	1
Tyrosine-protein kinase Tec OS=Homo sapiens GN=TEC PE=1 SV=2	7	0
U4/U6.U5 tri-snRNP-associated protein 2 OS=Homo sapiens GN=USP39 PE=1 SV=2	10	1
U5 small nuclear ribonucleoprotein 40 kDa protein OS=Homo sapiens GN=SNRNP40 PE=1 SV=1	2	1
U6 snRNA-associated Sm-like protein LSM4 OS=Homo sapiens GN=LSM4 PE=1 SV=1	2	1
Ubiquitin carboxyl-terminal hydrolase 33 OS=Homo sapiens GN=USP33 PE=1 SV=2	6	0

Ubiquitin-associated and SH3 domain-containing protein B OS=Homo sapiens GN=UBASH3B PE=1 SV=2	4	0
Ubiquitin-conjugating enzyme E2 L3 OS=Homo sapiens GN=UBE2L3 PE=1 SV=1	2	1
Ubiquitin-conjugating enzyme E2 variant 2 OS=Homo sapiens GN=UBE2V2 PE=1 SV=4	3	1
UBX domain-containing protein 7 OS=Homo sapiens GN=UBXN7 PE=1 SV=2	3	0
Vinculin OS=Homo sapiens GN=VCL PE=1 SV=4	5	0
Wings apart-like protein homolog OS=Homo sapiens GN=WAPAL PE=1 SV=1	13	3
YTH domain family protein 2 OS=Homo sapiens GN=YTHDF2 PE=1 SV=2	4	1
Zinc finger CCCH domain-containing protein 11A OS=Homo sapiens GN=ZC3H11A PE=1 SV=3	4	1
Zinc finger protein 318 OS=Homo sapiens GN=ZNF318 PE=1 SV=2	10	2
Zinc finger protein 512B OS=Homo sapiens GN=ZNF512B PE=1 SV=1	2	0
Zinc finger protein 768 OS=Homo sapiens GN=ZNF768 PE=1 SV=2	2	0
Zinc finger protein 837 OS=Homo sapiens GN=ZNF837 PE=2 SV=2	2	0