

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00292009	palladin	PALLD	palladin, cytoskeletal associated protein	Cytoplasm	other	6	7	4	23	26	28	6.09	0.00000
IPI00395887	Thioredoxin domain-containing protein 1 precursor	TMX1	thioredoxin-related transmembrane prote	Cytoplasm	enzyme	44	44	36	19	21	21	-5.34	0.00000
IPI00555610	313 kDa protein					107	105	116	143	135	130	4.97	0.00000
IPI00657687	Isoform 1 of Actin-binding protein anillin	ANLN	anillin, actin binding protein	Cytoplasm	other	8	7	8	20	24	25	4.60	0.00000
IPI00304875	Isoform 1 of HIRA-interacting protein 3	HIRIP3	HIRA interacting protein 3	Nucleus	other	26	23	24	14	11	10	-3.62	0.00002
IPI00008868	Microtubule-associated protein 1B	MAP1B	microtubule-associated protein 1B	Cytoplasm	other	0	0	0	10	9	11	3.61	0.00002
IPI00008918	Isoform Beta of LIM domain and actin-binding protein 1	LIMA1	LIM domain and actin binding 1	Cytoplasm	other	55	54	52	71	73	67	3.61	0.00004
IPI00748920	splicing coactivator subunit SRm300	SRRM2	serine/arginine repetitive matrix 2	Nucleus	other	113	107	121	97	99	92	-3.40	0.00004
IPI00291802	Isoform 3 of LIM domain only protein 7	LMO7	LIM domain 7	Cytoplasm	enzyme	8	9	9	19	22	19	3.42	0.00005
IPI00744036	tight junction protein 3	TJP3	tight junction protein 3 (zona occludens	Plasma Membrane	other	7	12	8	2	1	0	-3.04	0.00007
IPI00304589	182 kDa tankyrase 1-binding protein	TNKS1BP1	tankyrase 1 binding protein 1, 182kDa	Nucleus	other	50	48	47	72	56	59	3.10	0.00008
IPI00029273	Isoform 1 of Hepatocyte growth factor receptor precursor	MET	met proto-oncogene (hepatocyte growth	Plasma Membrane	kinase	0	0	0	8	5	12	3.01	0.00010
IPI00009286	Isoform 1 of Zinc finger protein HRX	MLL	myeloid/lymphoid or mixed-lineage leuke	Nucleus	transcription regulator	12	14	11	22	23	23	2.96	0.00010
IPI00219301	Myristoylated alanine-rich C-kinase substrate	MARCKS	myristoylated alanine-rich protein kinase	Plasma Membrane	other	38	33	38	51	46	49	2.90	0.00014
IPI00745518	Microtubule-associated protein 4 isoform 1 variant (Fragment)					53	57	58	63	75	70	2.88	0.00018
IPI0013076	Isoform 1 of FGFR1 oncogene partner	FGFR1OP	FGFR1 oncogene partner	Cytoplasm	other	0	0	0	8	7	8	2.77	0.00021
IPI00028481	Ras-related protein Rab-8A	RAB8A	RAB8A, member RAS oncogene family	Plasma Membrane	other	0	2	3	8	8	11	2.68	0.00026
IPI00006196	Isoform 2 of Nuclear mitotic apparatus protein 1	NUMA1	nuclear mitotic apparatus protein 1	Nucleus	other	13	15	13	21	22	26	2.65	0.00028
IPI00329115	Isoform 1 of Protein C10orf47	C10orf47	chromosome 10 open reading frame 47	unknown	other	2	0	0	10	7	6	2.57	0.00030
IPI00289334	Isoform 1 of Filamin-B	FLNB	filamin B, beta	Cytoplasm	other	3	4	5	11	11	12	2.55	0.00030
IPI00658152	tensin-like SH2 domain containing 1	TNS3	tensin 3	unknown	phosphatase	12	11	11	20	16	24	2.54	0.00030
IPI00024062	Band 4.1-like protein 1	EPB41L1	erythrocyte membrane protein band 4.1-l	Plasma Membrane	other	28	39	31	27	22	20	-2.49	0.00044
IPI00237884	Isoform 1 of A-kinase anchor protein 12	AKAP12	A kinase (PRKA) anchor protein 12	Cytoplasm	transporter	11	15	11	21	17	25	2.51	0.00046
IPI00216219	Isoform Long of Tight junction protein ZO-1	TJP1	(include: tight junction protein 1 (zona occludens	Plasma Membrane	other	35	31	35	39	44	49	2.48	0.00046
IPI00218753	Isoform 3 of DNA topoisomerase 2-alpha	TOP2A	topoisomerase (DNA) II alpha 170kDa	Nucleus	enzyme	26	25	22	37	31	34	2.47	0.00046
IPI00294742	HDCMA18P protein	LARP7	La ribonucleoprotein domain family, mem	unknown	other	9	6	6	13	16	15	2.45	0.00047
IPI00020513	Zyxin	ZYX	zyxin	Plasma Membrane	other	19	23	22	29	33	29	2.36	0.00060
IPI00021275	Isoform 1 of Ephrin type-B receptor 2 precursor	EPHB2	EPH receptor B2	Plasma Membrane	kinase	8	9	7	0	0	4	-2.33	0.00063
IPI00298289	Isoform 2 of Reticulon-4	RTN4	reticulon 4	Cytoplasm	other	1	0	0	7	6	6	2.27	0.00068
IPI00157144	GYS1 protein	GYS1	glycogen synthase 1 (muscle)	Cytoplasm	enzyme	7	0	0	10	9	8	2.21	0.00076
IPI00010471	Plastin-2	LCP1	lymphocyte cytosolic protein 1 (L-plastin)	Cytoplasm	other	1	1	2	7	7	6	2.20	0.00078
IPI00178440	Elongation factor 1-beta	EEF1B2	eukaryotic translation elongation factor 1	Cytoplasm	translation regulator	30	27	40	49	39	36	2.18	0.00078
IPI00220740	Isoform 2 of Nucleophosmin	NPM1	nucleophosmin (nucleolar phosphoprotein)	Nucleus	transcription regulator	57	61	52	66	65	69	2.16	0.00081
IPI00552897	Isoform 1 of Mediator of DNA damage checkpoint protein 1	MDC1	mediator of DNA-damage checkpoint 1	Nucleus	other	13	17	15	24	19	25	2.16	0.00083
IPI00294840	Absent in melanoma 1 protein	AIM1	(include: absent in melanoma 1	unknown	other	4	3	4	14	6	9	2.15	0.00084
IPI00031605	AHNAK nucleoprotein, isoform 2	AHNAK	AHNAK nucleoprotein	Nucleus	other	6	9	8	13	13	17	2.12	0.00098
IPI00015029	Prostaglandin E synthase 3	PTGES3	prostaglandin E synthase 3 (cytosolic)	Cytoplasm	enzyme	11	10	19	29	15	18	2.11	0.00099
IPI00032064	Isoform A of A-kinase anchor protein 2					5	6	7	7	14	16	2.10	0.00099
IPI00152011	PTPL1-associated RhoGAP 1	ARHGAP29	Rho GTPase activating protein 29	Cytoplasm	other	0	4	4	8	10	8	2.10	0.00101
IPI00015953	Isoform 1 of Nucleolar RNA helicase 2	DDX21	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	enzyme	26	28	27	37	36	33	2.09	0.00101
IPI00004233	Isoform Long of Antigen KI-67	MKI67	antigen identified by monoclonal antibod	Nucleus	other	10	10	14	18	15	22	2.08	0.00103
IPI00027831	Glutamate-rich WD repeat-containing protein 1	GRWD1	glutamate-rich WD repeat containing 1	Nucleus	other	0	3	0	7	7	6	2.02	0.00111
IPI00419933	Pleckstrin homology domain containing, family A member 2	PLEKHA7	pleckstrin homology domain containing, f	Cytoplasm	other	0	2	2	3	7	10	2.02	0.00111
IPI00304587	dispatched B	DISP2	dispatched homolog 2 (Drosophila)	unknown	other	8	4	5	0	0	0	-2.02	0.00120
IPI00017450	Transcription initiation factor IIF alpha subunit	GTF2F1	general transcription factor IIF, polypeptic	Nucleus	transcription regulator	5	6	6	12	12	11	2.01	0.00132
IPI00219841	DNA ligase 1	LIG1	ligase I, DNA, ATP-dependent	Nucleus	enzyme	15	15	16	25	23	19	1.97	0.00144
IPI00218136	137 kDa protein	CGN	cingulin	Plasma Membrane	other	0	0	2	6	7	5	1.95	0.00149
IPI00020021	Protein DEK	DEK	DEK oncogene	Nucleus	transcription regulator	10	10	11	22	14	14	1.92	0.00161
IPI00061758	PRR8 protein	RBM33	RNA binding motif protein 33	unknown	other	0	7	8	0	0	0	-1.89	0.00168
IPI00031698	Hypothetical protein MGC5509	C2orf49	chromosome 2 open reading frame 49	unknown	other	0	3	0	6	8	5	1.90	0.00177
IPI00554788	Keratin, type I cytoskeletal 18	KRT18	keratin 18	Cytoplasm	other	17	14	16	8	10	11	-1.84	0.00179
IPI00033054	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide /	CTDSPL2	CTD (carboxy-terminal domain, RNA poly	unknown	other	0	0	0	4	5	7	1.89	0.00179
IPI00025156	Isoform 1 of STIP1 homology and U box-containing protein 1	STUB1	STIP1 homology and U-box containing pr	Cytoplasm	enzyme	9	11	11	6	3	6	-1.84	0.00180
IPI00376199	Interferon regulatory factor 2 binding protein 2	IRF2BP2	interferon regulatory factor 2 binding prc	Nucleus	transcription regulator	0	4	0	4	6	10	1.85	0.00195

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IPI00411635	KIAA0802 protein					10	11	9	18	14	16	1.83	0.00202
IPI00005688	Zinc finger protein 185	ZNF185	zinc finger protein 185 (LIM domain)	Nucleus	other	14	18	22	22	28	24	1.82	0.00206
IPI00470483	WD repeat domain 62	WDR62	WD repeat domain 62	Nucleus	other	0	0	3	8	5	5	1.77	0.00219
IPI00152881	Shroom-related protein	SHROOM3	shroom family member 3	Cytoplasm	other	0	0	0	5	4	6	1.76	0.00225
IPI00337426	Isoform 1 of BMP-2-inducible protein kinase	BMP2K	BMP2 inducible kinase	Nucleus	kinase	0	0	0	6	4	5	1.76	0.00225
IPI00217709	Isoform Beta-1 of DNA topoisomerase 2-beta	TOP2B	topoisomerase (DNA) II beta 180kDa	Nucleus	enzyme	29	34	30	28	17	28	-1.72	0.00251
IPI00025512	Heat-shock protein beta-1	HSPB1	heat shock 27kDa protein 1	Cytoplasm	other	4	4	2	7	8	9	1.73	0.00265
IPI00456887	Scaffold attachment factor A2	HNRNPUL2	heterogeneous nuclear ribonucleoprotein	Nucleus	other	42	38	41	44	49	50	1.71	0.00272
IPI00396634	OTTHUMP0000028561	KIAA1671	KIAA1671	unknown	other	6	6	5	1	0	3	-1.65	0.00274
IPI00020418	Ras-related protein R-Ras	RRAS	related RAS viral (r-ras) oncogene homolog	Cytoplasm	enzyme	1	0	2	4	5	7	1.70	0.00277
IPI00009146	FLN29 gene product	TRAFD1	TRAF-type zinc finger domain containing	unknown	other	5	6	3	0	0	0	-1.62	0.00291
IPI00719759	Akt substrate AS250	RALGAPA2	Ral GTPase activating protein, alpha subunit	Cytoplasm	other	6	4	4	0	0	0	-1.62	0.00291
IPI00291175	Isoform 1 of Vinculin	VCL	vinculin	Plasma Membrane	enzyme	3	4	6	9	9	9	1.66	0.00291
IPI00010746	Phosphatidylserine synthase 1	PTDSS1	phosphatidylserine synthase 1	Cytoplasm	enzyme	14	0	8	14	12	12	1.61	0.00336
IPI00216654	Isoform Beta of Nucleolar phosphoprotein p130	NOLC1	nucleolar and coiled-body phosphoprotein	Nucleus	transcription regulator	10	10	5	14	13	13	1.59	0.00365
IPI00645814	KIAA1187 protein	MAP7D1	MAP7 domain containing 1	unknown	other	23	24	20	30	25	30	1.58	0.00370
IPI00004273	RNA binding motif protein 25	RBM25	RNA binding motif protein 25	Nucleus	other	24	18	16	18	14	10	-1.54	0.00377
IPI00019502	Myosin-9	MYH9	myosin, heavy chain 9, non-muscle	Cytoplasm	enzyme	15	19	11	11	10	9	-1.54	0.00377
IPI00019996	modulator of estrogen induced transcription isoform b	SLTM	SAFB-like, transcription modulator	Nucleus	other	26	22	24	31	27	32	1.56	0.00388
IPI00013743	Hypothetical protein BUD13	BUD13	(includes BUD13 homolog (S. cerevisiae))	Nucleus	other	16	22	19	27	24	23	1.54	0.00400
IPI00024579	Postreplication repair protein RAD18	RAD18	RAD18 homolog (S. cerevisiae)	Nucleus	other	3	0	0	6	5	5	1.52	0.00406
IPI00025087	Isoform 1 of Cellular tumor antigen p53	TP53	(includes tumor protein p53)	Nucleus	transcription regulator	3	0	0	5	6	5	1.52	0.00406
IPI00008708	Ribosomal L1 domain-containing protein 1	RSL1D1	ribosomal L1 domain containing 1	Cytoplasm	other	13	20	14	19	22	22	1.51	0.00448
IPI00295457	myosin phosphatase-Rho interacting protein isoform 1	MPRIP	myosin phosphatase Rho interacting protein	Cytoplasm	other	10	12	12	15	18	16	1.50	0.00449
IPI00002135	Transforming acidic coiled-coil-containing protein 3	TACC3	transforming, acidic coiled-coil containing	Nucleus	other	0	0	0	5	2	6	1.49	0.00458
IPI00032107	Sulfate transporter	SLC26A2	solute carrier family 26 (sulfate transporter)	Plasma Membrane	transporter	0	7	5	0	0	0	-1.49	0.00465
IPI00297859	Isoform 1 of Myeloid/lymphoid or mixed-lineage leukemia protein 2	MLL2	myeloid/lymphoid or mixed-lineage leukemia 2	Nucleus	transcription regulator	5	5	3	0	0	0	-1.49	0.00465
IPI00006987	ATP-dependent RNA helicase DDX24	DDX24	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	enzyme	16	16	19	17	8	11	-1.49	0.00474
IPI00011635	Isoform 2 of Bcl-2-like 13 protein	BCL2L13	BCL2-like 13 (apoptosis facilitator)	Cytoplasm	other	11	7	5	4	3	4	-1.47	0.00482
IPI00719818	nucleolar protein 5A	NOP56	NOP56 ribonucleoprotein homolog (yeast)	Nucleus	other	37	40	39	32	37	29	-1.46	0.00496
IPI00184317	Isoform Short of Transcription intermediary factor 1-alpha	TRIM24	tripartite motif containing 24	Nucleus	transcription regulator	0	0	4	7	5	5	1.49	0.00508
IPI00394829	hypothetical protein LOC286077	FAM83H	family with sequence similarity 83, member unknown	unknown	other	39	41	40	47	45	47	1.48	0.00512
IPI00010080	Serine/threonine-protein kinase OSR1	OXSRI	oxidative-stress responsive 1	Nucleus	kinase	8	9	7	6	5	1	-1.45	0.00520
IPI00100151	5'-3' exoribonuclease 2	XRN2	5'-3' exoribonuclease 2	Nucleus	enzyme	16	15	13	8	13	9	-1.44	0.00528
IPI00294618	Proline-rich protein PRCC	PRCC	papillary renal cell carcinoma (translocating)	Nucleus	other	0	0	5	6	5	7	1.45	0.00534
IPI00019870	Isoform Alpha of Caveolin-2	CAV2	caveolin 2	Plasma Membrane	other	6	6	7	0	6	0	-1.43	0.00543
IPI00301294	Protein C2orf17	FAM134A	family with sequence similarity 134, member unknown	unknown	other	6	6	7	0	0	6	-1.43	0.00543
IPI00181905	Isoform 1 of Protein KIAA1914	AFAP1L2	actin filament associated protein 1-like 2	Cytoplasm	other	0	1	2	5	5	4	1.44	0.00560
IPI00302829	Retinoblastoma-associated protein	RB1	retinoblastoma 1	Nucleus	transcription regulator	6	9	6	12	10	12	1.43	0.00569
IPI00289819	Cation-independent mannose-6-phosphate receptor precursor	IGF2R	insulin-like growth factor 2 receptor	Plasma Membrane	transmembrane receptor	11	11	15	12	6	6	-1.39	0.00592
IPI00018274	Isoform 1 of Epidermal growth factor receptor precursor	EGFR	epidermal growth factor receptor	Plasma Membrane	kinase	5	5	5	10	8	9	1.40	0.00598
IPI00289491	Protein CASC3	CASC3	cancer susceptibility candidate 3	Nucleus	other	10	10	9	9	7	0	-1.37	0.00618
IPI00028122	Isoform 1 of PC4 and SFRS1-interacting protein	PSIP1	PC4 and SFRS1 interacting protein 1	Nucleus	other	21	21	11	29	18	21	1.38	0.00633
IPI00015973	Band 4.1-like protein 2	EPB41L2	erythrocyte membrane protein band 4.1-like 2	Plasma Membrane	other	0	3	2	4	6	6	1.36	0.00646
IPI00002564	DNA-repair protein XRCC1	XRCC1	(includes X-ray repair complementing defective repair)	Nucleus	other	8	11	9	16	12	13	1.36	0.00658
IPI00006937	Ubiquitin-conjugating enzyme E2 J1	UBE2J1	ubiquitin-conjugating enzyme E2, J1, U	Cytoplasm	enzyme	0	0	0	0	6	5	1.36	0.00658
IPI00013933	Isoform DPI of Desmoplakin	DSP	desmoplakin	Plasma Membrane	other	4	3	4	5	9	8	1.36	0.00658
IPI00477104	Pleckstrin homology domain containing, family A member 6	PLEKHA6	pleckstrin homology domain containing, family A member 6	unknown	other	4	6	0	9	7	6	1.36	0.00658
IPI00101186	Isoform 1 of Protein KIAA0690	RRP12	ribosomal RNA processing 12 homolog (S. cerevisiae)	Nucleus	other	4	4	4	0	0	0	-1.36	0.00707
IPI00045914	Msx2-interacting protein	SPEN	spen homolog, transcriptional regulator (Drosophila)	Nucleus	transcription regulator	9	9	11	17	12	13	1.35	0.00727
IPI00171475	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent	NFATC2IP	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent	Nucleus	other	3	2	2	4	6	7	1.33	0.00749
IPI00290684	Bifunctional polynucleotide phosphatase/kinase	PNKP	polynucleotide kinase 3'-phosphatase	Nucleus	kinase	0	0	5	4	6	7	1.33	0.00749
IPI00550191	Protein C9orf78	C9orf78	chromosome 9 open reading frame 78	unknown	other	11	9	11	16	15	13	1.33	0.00749
IPI00292059	Nuclear pore complex protein Nup153	NUP153	nucleoporin 153kDa	Nucleus	transporter	3	3	2	6	5	7	1.30	0.00797

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IPI00413362	signal-induced proliferation-associated 1 like 1	SIPA1L1	signal-induced proliferation-associated 1	Cytoplasm	other	9	11	7	5	4	7	-1.28	0.00836
IPI00220754	Isoform 1 of Gamma-adducin	ADD3	adducin 3 (gamma)	Cytoplasm	other	15	11	12	11	7	8	-1.27	0.00843
IPI00410079	Cerebral protein-10	FAM82A2	family with sequence similarity 82, memb	Cytoplasm	other	11	10	5	11	12	15	1.27	0.00852
IPI00186711	Isoform 1 isoform 6	PLEC	plectin	Cytoplasm	other	21	27	25	22	17	20	-1.26	0.00852
IPI00019551	Pleckstrin homology-like domain family A member 2 (Fragment)	PHLDA2	pleckstrin homology-like domain, family A	Cytoplasm	other	0	3	0	5	4	5	1.27	0.00862
IPI00032150	Isoform 1 of Phosphatidate cytidyltransferase 2	CDS2	CDP-diacylglycerol synthase (phosphatidate)	Cytoplasm	enzyme	14	15	10	9	12	6	-1.26	0.00865
IPI00166009	Isoform 1 of JmjC domain-containing histone demethylation prot	KDM2A	lysine (K)-specific demethylase 2A	Nucleus	other	9	9	9	12	12	15	1.26	0.00868
IPI00017292	Isoform 1 of Beta-catenin	CTNNB1	catenin (cadherin-associated protein), bet	Nucleus	transcription regulator	9	11	8	13	13	14	1.26	0.00900
IPI00465287	ras responsive element binding protein 1 isoform 2	RREB1	ras responsive element binding protein 1	Nucleus	transcription regulator	3	5	3	8	7	6	1.24	0.00911
IPI00003842	Isoform 1 of Microtubule-associated protein 2	MAP2	microtubule-associated protein 2	Cytoplasm	other	26	28	26	22	22	22	-1.24	0.00911
IPI00005202	Membrane-associated progesterone receptor component 2	PGRMC2	progesterone receptor membrane compo	Nucleus	ligand-dependent nuclear	7	7	5	8	12	10	1.24	0.00926
IPI00221325	Ran-binding protein 2	RANBP2	RAN binding protein 2	Nucleus	enzyme	22	21	23	25	26	29	1.24	0.00928
IPI00335641	Isoform 1 of MKL/myocardin-like protein 2	MKL2	MKL/myocardin-like 2	Nucleus	transcription regulator	0	4	0	5	5	5	1.23	0.00928
IPI00479997	Stathmin	STMN1	stathmin 1	Cytoplasm	other	15	16	15	22	20	17	1.24	0.00928
IPI00005024	Isoform 1 of Myb-binding protein 1A	MYBBP1A	MYB binding protein (P160) 1a	Nucleus	transcription regulator	24	19	26	35	24	24	1.23	0.00956
IPI00021831	cAMP-dependent protein kinase type I-alpha regulatory subunit	PRKAR1A	protein kinase, cAMP-dependent, regulat	Cytoplasm	kinase	3	5	4	8	7	7	1.22	0.00958
IPI00031076	Cyclin-C	CCNC	cyclin C	Nucleus	other	1	0	0	4	3	4	1.22	0.00967
IPI00063605	jub, ajuba homolog isoform 1	AJUBA	ajuba LIM protein	unknown	transcription regulator	0	0	0	4	3	4	1.22	0.00967
IPI00181396	VPRBP protein	VPRBP	Vpr (HIV-1) binding protein	Nucleus	other	0	0	0	4	4	3	1.22	0.00967
IPI00401147	Isoform 1 of Sad1/unc-84 protein-like 1	SUN1	Sad1 and UNC84 domain containing 1	Nucleus	other	0	0	0	5	5	0	1.22	0.00967
IPI00439948	Isoform 1 of RelA-associated inhibitor	PPP1R13L	protein phosphatase 1, regulatory subuni	Nucleus	transcription regulator	0	0	0	5	5	5	1.22	0.00967
IPI00479145	Keratin, type I cytoskeletal 19	KRT19 (huma	keratin 19	Cytoplasm	other	6	5	5	0	4	2	-1.21	0.01046
IPI00003843	Isoform A1 of Tight junction protein ZO-2	TJP2	tight junction protein 2 (zona occludens	Plasma Membrane	kinase	60	57	52	50	47	56	-1.19	0.01072
IPI00100106	resistance to inhibitors of cholinesterase 8 homolog A	RIC8A	resistance to inhibitors of cholinesterase	Cytoplasm	other	4	3	6	9	8	6	1.21	0.01077
IPI00168459	Isoform 2 of Pleckstrin homology-like domain family B member	PHLDB2	pleckstrin homology-like domain, family	Cytoplasm	other	4	4	5	7	7	9	1.21	0.01077
IPI00159322	Isoform 1 of Transcription factor 20	TCF20	transcription factor 20 (AR1)	Nucleus	transcription regulator	7	6	4	3	2	3	-1.18	0.01089
IPI00456359	Isoform 1 of Ataxin-2-like protein	ATXN2L	ataxin 2-like	unknown	other	11	11	13	14	17	16	1.20	0.01091
IPI00216592	Isoform C1 of Heterogeneous nuclear ribonucleoproteins C1/C2	HNRNPC	heterogeneous nuclear ribonucleoprotein	Nucleus	other	40	30	39	45	41	38	1.20	0.01100
IPI00375454	Isoform 2 of Telomere-associated protein RIF1	RIF1 (include	RAP1 interacting factor homolog (yeast)	Nucleus	other	2	6	6	7	8	9	1.19	0.01102
IPI00015924	Isoform 1 of Tuftelin-interacting protein 11	TFIP11	tuftelin interacting protein 11	Extracellular Space	other	10	8	7	5	4	6	-1.18	0.01103
IPI00290460	Eukaryotic translation initiation factor 3 subunit 4	EIF3G	eukaryotic translation initiation factor 3, s	Cytoplasm	translation regulator	2	3	3	7	5	5	1.18	0.01121
IPI00419373	Isoform 1 of Heterogeneous nuclear ribonucleoprotein A3	HNRNPA3	heterogeneous nuclear ribonucleoprotein	Nucleus	other	4	4	4	1	2	1	-1.17	0.01126
IPI00619921	Isoform 4 of Death-inducer obliterator 1	DIDO1	death inducer-obliterator 1	Nucleus	other	12	14	14	16	19	17	1.17	0.01149
IPI00152007	Tumor endothelial marker 4	ARHGEF17	Rho guanine nucleotide exchange factor	Cytoplasm	other	4	4	8	10	8	8	1.16	0.01175
IPI00397376	nuclear protein UKp68 isoform 1	ZC3H14	zinc finger CCCH-type containing 14	Nucleus	other	4	4	0	5	8	5	1.16	0.01188
IPI00290652	remodeling and spacing factor 1	RSF1 (include	remodeling and spacing factor 1	Nucleus	transcription regulator	28	19	17	26	30	21	1.16	0.01207
IPI00022450	TBC1 domain family member 5	TBC1D5	TBC1 domain family, member 5	unknown	other	5	6	2	3	0	0	-1.14	0.01226
IPI00001813	CTD-binding SR-like protein rA9	PHRF1	PHD and ring finger domains 1	Nucleus	other	12	10	7	14	13	13	1.15	0.01226
IPI00059687	Isoform 1 of Protein C18orf25	C18orf25	chromosome 18 open reading frame 25	unknown	other	5	1	4	4	9	6	1.14	0.01243
IPI00010338	Tissue factor precursor	F3	coagulation factor III (thromboplastin, tiss	Plasma Membrane	transmembrane receptor	1	2	2	4	5	4	1.14	0.01245
IPI00237706	MAP-kinase activating death domain-containing protein isoform	MADD	MAP-kinase activating death domain	Cytoplasm	other	0	0	3	5	5	3	1.14	0.01245
IPI00297254	Signal-induced proliferation-associated 1-like protein 3	SIPA1L3	signal-induced proliferation-associated 1	unknown	other	0	1	3	5	4	3	1.14	0.01245
IPI00302592	Filamin A, alpha	FLNA	filamin A, alpha	Cytoplasm	other	9	12	10	14	11	17	1.13	0.01268
IPI00024773	Isoform 1 of FERM, RhoGEF and pleckstrin domain-containing pr	FARP1	FERM, RhoGEF (ARHGEF) and pleckstrin d	unknown	other	3	7	9	9	9	11	1.13	0.01268
IPI00382733	Transcription repressor	LRRFIP1	leucine rich repeat (in FLII) interacting pro	Cytoplasm	other	5	8	6	9	9	11	1.13	0.01268
IPI00021537	Isoform 1 of Opioid growth factor receptor	OGFR	opioid growth factor receptor	Plasma Membrane	other	12	11	9	15	11	17	1.13	0.01279
IPI00329547	Isoform 1 of Zinc finger CCCH-type domain-containing protein 1	ZC3H13	zinc finger CCCH-type containing 13	unknown	other	31	29	33	24	28	28	-1.11	0.01286
IPI00104050	Thyroid hormone receptor-associated protein 3	THRAP3	thyroid hormone receptor associated pro	Nucleus	transcription regulator	45	55	49	49	54	61	1.12	0.01288
IPI00410693	Isoform 1 of Plasminogen activator inhibitor 1 RNA-binding prot	SERPBP1	SERPINE1 mRNA binding protein 1	Nucleus	other	8	7	5	10	11	9	1.12	0.01288
IPI00012442	Ras-GTPase-activating protein-binding protein 1	G3BP1	GTPase activating protein (SH3 domain) b	Nucleus	enzyme	10	12	11	17	12	15	1.12	0.01306
IPI00010865	Casein kinase II subunit beta	CSNK2B	casein kinase 2, beta polypeptide	Cytoplasm	kinase	0	0	10	9	11	0	1.11	0.01330
IPI00170791	Isoform 2 of InaD-like protein	INADL	InaD-like (Drosophila)	Plasma Membrane	other	6	0	5	9	5	7	1.11	0.01330
IPI00024970	Inner centromere protein					4	0	0	5	4	5	1.11	0.01358
IPI00103756	Mid-1-related chloride channel 4	CLCC1	chloride channel CLIC-like 1	Cytoplasm	ion channel	4	1	0	6	4	4	1.11	0.01358

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00554761	Nonhistone chromosomal protein HMG-14					2	2	2	4	5	5	1.11	0.01358
IPI00158615	Isoform 1 of THO complex subunit 2	THOC2	THO complex 2	Nucleus	other	5	3	5	8	8	6	1.09	0.01402
IPI00556619	TXNDC14 protein	TMX2	thioredoxin-related transmembrane prote	Nucleus	enzyme	0	5	7	4	8	10	1.09	0.01402
IPI00645608	Interferon regulatory factor 2 binding protein 1 variant	IRF2BP1	interferon regulatory factor 2 binding prc	Nucleus	transcription regulator	8	4	0	9	7	6	1.09	0.01402
IPI00176532	Isoform 1 of Junctophilin-2	JPH2	junctophilin 2	Cytoplasm	enzyme	8	7	8	10	12	11	1.09	0.01404
IPI00004671	Golgin subfamily B member 1	GOLGB1	golgin B1	Cytoplasm	other	5	1	0	6	4	5	1.08	0.01423
IPI00011592	Cytoplasmic dynein 1 light intermediate chain 2	DYNC1L2	dynein, cytoplasmic 1, light intermediate	Cytoplasm	other	4	2	1	2	6	7	1.08	0.01423
IPI00166044	Isoform 1 of Regulatory associated protein of mTOR	RPTOR	regulatory associated protein of MTOR, c	Cytoplasm	other	6	5	4	0	5	0	-1.08	0.01439
IPI00000858	Isoform 1 of Negative elongation factor E	RDBP	RD RNA binding protein	Nucleus	other	0	0	0	3	4	3	1.08	0.01461
IPI00006171	Isoform 2 of Nuclear factor related to kappa-B-binding protein	NFRKB	nuclear factor related to kappaB binding	Nucleus	transcription regulator	0	0	0	4	3	3	1.08	0.01461
IPI00432363	Microtubule-actin crosslinking factor 1, isoform 4	MACF1	microtubule-actin crosslinking factor 1	Cytoplasm	enzyme	1	0	1	4	3	3	1.08	0.01461
IPI00440241	PREDICTED: hypothetical protein LOC79649 isoform 3					1	1	1	2	4	4	1.08	0.01461
IPI00007955	Isoform 1 of Tripartite motif protein 16	TRIM16	tripartite motif containing 16	Cytoplasm	transcription regulator	5	4	0	0	0	0	-1.08	0.01483
IPI00217418	Isoform 2 of Rho-GTPase-activating protein 12	ARHGAP12	Rho GTPase activating protein 12	Cytoplasm	other	0	4	5	0	0	0	-1.08	0.01483
IPI00005154	Structure-specific recognition protein 1	SSRP1	structure specific recognition protein 1	Nucleus	other	14	10	11	7	9	9	-1.07	0.01491
IPI00396378	Isoform B1 of Heterogeneous nuclear ribonucleoproteins A2/B1	HNRNPA2B1	heterogeneous nuclear ribonucleoprotein	Nucleus	other	4	5	5	6	10	7	1.08	0.01515
IPI00746976	Dynamain-like protein DYNIV-11 variant	DNM1L	dynamain 1-like	Cytoplasm	enzyme	4	5	5	7	7	9	1.08	0.01515
IPI00456750	Niban-like protein	FAM129B	family with sequence similarity 129, mem	Cytoplasm	other	10	8	7	13	11	11	1.07	0.01518
IPI00445401	Isoform 2 of HECT, UBA and WWE domain-containing protein 1	HUWE1	HECT, UBA and WWE domain containing	Nucleus	transcription regulator	20	21	23	25	22	29	1.07	0.01526
IPI00398505	Ubiquitin carboxyl-terminal hydrolase 24	USP24	ubiquitin specific peptidase 24	unknown	peptidase	6	5	4	10	7	7	1.06	0.01536
IPI00239406	Isoform 2 of Nesprin-2	SYNE2	spectrin repeat containing, nuclear envelc	Nucleus	other	6	5	5	3	3	2	-1.06	0.01560
IPI00289601	Histone deacetylase 2	HDAC2	histone deacetylase 2	Nucleus	transcription regulator	15	14	15	19	16	20	1.06	0.01570
IPI00014068	Isoform 1 of Serine/threonine-protein kinase PAK 4	PAK4	p21 protein (Cdc42/Rac)-activated kinase	Cytoplasm	kinase	14	15	16	19	19	18	1.05	0.01588
IPI00008529	60S acidic ribosomal protein P2	RPLP2	ribosomal protein, large, P2	Cytoplasm	other	13	14	19	21	14	22	1.05	0.01596
IPI00010414	PDZ and LIM domain protein 1	PDLIM1	PDZ and LIM domain 1	Cytoplasm	transcription regulator	6	8	3	7	9	10	1.04	0.01615
IPI00015833	Coiled-coil-helix-coiled-coil-helix domain-containing protein 3	CHCHD3	coiled-coil-helix-coiled-coil-helix domain	Cytoplasm	other	6	5	6	8	9	9	1.04	0.01615
IPI00171422	CDNA PSEC0094 fis, clone NT2RP2001499, weakly similar to PRC	TMEM87A	transmembrane protein 87A	unknown	other	6	6	5	5	3	0	-1.04	0.01617
IPI00329572	Protein kinase C and casein kinase substrate in neurons protein : PACSIN3	PACSIN3	protein kinase C and casein kinase substr	Cytoplasm	other	12	9	9	12	15	13	1.04	0.01617
IPI00177498	Hypothetical protein DKFZp451D112	LIMCH1	LIM and calponin homology domains 1	unknown	other	2	4	3	5	6	6	1.04	0.01620
IPI00219018	Glyceraldehyde-3-phosphate dehydrogenase	GAPDH	glyceraldehyde-3-phosphate dehydrogen	Cytoplasm	enzyme	4	4	3	1	1	2	-1.04	0.01621
IPI00183002	Isoform 1 of Protein phosphatase 1 regulatory subunit 12A	PPP1R12A	protein phosphatase 1, regulatory subunit	Cytoplasm	phosphatase	6	8	4	9	10	8	1.03	0.01664
IPI00386119	Isoform 5 of Splicing factor 1	SF1	splicing factor 1	Nucleus	transcription regulator	24	24	30	25	29	36	1.03	0.01675
IPI00328867	Isoform 2 of Proto-oncogene tyrosine-protein kinase Src	SRC	v-src sarcoma (Schmidt-Ruppin A-2) viral	Cytoplasm	kinase	1	5	4	5	7	6	1.02	0.01691
IPI00306825	Isoform 1 of Tumor protein D54	TPD52L2	tumor protein D52-like 2	Cytoplasm	other	3	4	4	7	6	6	1.00	0.01736
IPI00298884	Putative RNA-binding protein 16	SCAF8	SR-related CTD-associated factor 8	Nucleus	other	0	0	3	4	4	4	1.00	0.01746
IPI00418169	annexin A2 isoform 1	ANXA2	annexin A2	Plasma Membrane	other	2	2	0	4	3	5	1.00	0.01746
IPI00017451	Splicing factor 3 subunit 1	SF3A1	splicing factor 3a, subunit 1, 120kDa	Nucleus	other	27	23	23	20	21	21	-0.99	0.01808
IPI00012079	Eukaryotic translation initiation factor 4B	EIF4B	eukaryotic translation initiation factor 4B	Cytoplasm	translation regulator	10	8	5	14	10	8	0.99	0.01842
IPI00022373	RNA-binding protein NOB1	NOB1	NIN1/RPN12 binding protein 1 homolog	Nucleus	other	8	8	8	11	14	8	0.98	0.01851
IPI00006099	Ribosome biogenesis protein BMS1 homolog	BMS1	BMS1 homolog, ribosome assembly prote	Nucleus	other	5	4	4	2	1	3	-0.98	0.01870
IPI00020956	Hepatoma-derived growth factor	HDFG	hepatoma-derived growth factor	Extracellular Space	growth factor	24	21	21	31	23	23	0.98	0.01901
IPI00154915	Isoform 1 of Partitioning-defective 3 homolog	PARD3	par-3 partitioning defective 3 homolog (C	Plasma Membrane	other	7	5	0	7	9	5	0.98	0.01901
IPI00293884	Kinesin-like protein KIF23	KIF23	kinesin family member 23	Cytoplasm	other	6	4	3	8	5	8	0.98	0.01901
IPI00759546	Isoform 5 of Afadin	MLLT4	myeloid/lymphoid or mixed-lineage leuke	Nucleus	other	19	15	19	16	14	13	-0.97	0.01912
IPI00640318	Hypothetical protein FLJ23236	PDS5B	PDS5, regulator of cohesion maintenance	Nucleus	other	9	8	9	8	14	13	0.96	0.01951
IPI00020719	Isoform 1 of Mitochondrial antiviral signaling protein	MAVS	mitochondrial antiviral signaling protein	Cytoplasm	other	7	0	6	7	8	7	0.96	0.01953
IPI00218529	Isoform AML-II of Runt-related transcription factor 1	RUNX1	runt-related transcription factor 1	Nucleus	transcription regulator	4	5	5	3	2	2	-0.95	0.01973
IPI00045360	Protein capicua homolog	CIC	capicua homolog (Drosophila)	unknown	other	2	1	4	7	4	3	0.95	0.01979
IPI00167053	Isoform 1b of Oxysterol-binding protein-related protein 3	OSBPL3	oxysterol binding protein-like 3	Cytoplasm	other	3	3	0	4	4	6	0.95	0.01979
IPI00177743	251 kDa protein	ZNF318	zinc finger protein 318	Nucleus	other	0	2	4	4	0	9	0.95	0.01979
IPI00220490	SH3 and multiple ankyrin repeat domains 2 isoform 1	SHANK2	SH3 and multiple ankyrin repeat domains	Plasma Membrane	other	2	2	3	5	5	4	0.95	0.01979
IPI00737871	PREDICTED: similar to angiominin	KIAA0754	KIAA0754	unknown	other	3	1	3	6	4	4	0.95	0.01979
IPI00296830	Isoform 1 of Leucine zipper protein 1	LUZP1	leucine zipper protein 1	Nucleus	other	7	7	0	7	8	8	0.95	0.02005
IPI00409671	DEAD box polypeptide 42 protein	DDX42	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Cytoplasm	enzyme	9	9	11	12	12	14	0.94	0.02040

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00179713	insulin-like growth factor 2 mRNA binding protein 2 isoform a	IGF2BP2	insulin-like growth factor 2 mRNA bindin	Cytoplasm	translation regulator	5	5	6	7	7	10	0.94	0.02042
IPI00291711	pleckstrin homology domain containing, family G, member 3	PLEKHG3	pleckstrin homology domain containing, f	unknown	other	1	0	0	3	2	4	0.94	0.02088
IPI00431749	Keratin b20	KRT80	keratin 80	unknown	other	1	0	1	3	3	4	0.94	0.02088
IPI00604756	Nuclear receptor-binding protein	NRBP1	nuclear receptor binding protein 1	Nucleus	kinase	0	0	0	1	4	4	0.94	0.02088
IPI00646493	COPA protein	COPA	coatomer protein complex, subunit alpha	Cytoplasm	transporter	1	1	0	3	2	4	0.94	0.02088
IPI00009101	Transcriptional activator SRCAP	SRCAP	Snf2-related CREBBP activator protein	Cytoplasm	transcription regulator	0	3	5	0	0	0	-0.94	0.02388
IPI00103552	mucin 16	MUC16	mucin 16, cell surface associated	Extracellular Space	other	0	3	5	0	0	0	-0.94	0.02388
IPI00299463	Nibrin	NBN	nibrin	Nucleus	other	3	2	4	0	0	0	-0.94	0.02388
IPI00328987	Bystin	BYSL	bystin-like	Cytoplasm	other	3	0	5	0	0	0	-0.94	0.02388
IPI00412771	CD2-associated protein	CD2AP	CD2-associated protein	Cytoplasm	other	4	4	1	0	0	0	-0.94	0.02388
IPI00554560	Hypothetical protein 101F10.1	C16orf88	chromosome 16 open reading frame 88	unknown	other	4	0	4	0	0	0	-0.94	0.02388
IPI00174962	Molecule interacting with Rab13	MICALL1	MICAL-like 1	Cytoplasm	other	4	5	6	2	0	5	-0.93	0.02416
IPI00031651	MGC11257 protein	C7orf50	chromosome 7 open reading frame 50	unknown	other	3	2	3	5	5	5	0.93	0.02429
IPI00101942	Calmin	CLMN	calmin (calponin-like, transmembrane)	Cytoplasm	other	9	11	5	8	6	3	-0.93	0.02429
IPI00220835	Protein transport protein Sec61 beta subunit	SEC61B	Sec61 beta subunit	Cytoplasm	transporter	9	7	9	5	7	5	-0.93	0.02429
IPI00065931	A-kinase anchor protein 13 isoform 1	AKAP13	A kinase (PRKA) anchor protein 13	Cytoplasm	other	12	6	13	12	14	14	0.93	0.02451
IPI00064212	KIAA1802 protein (Fragment)	CHAMP1	chromosome alignment maintaining phos	Nucleus	other	30	31	26	35	28	35	0.92	0.02483
IPI00031812	Nuclease sensitive element-binding protein 1	YBX1	Y box binding protein 1	Nucleus	transcription regulator	6	5	7	8	10	8	0.92	0.02489
IPI00176706	Splicing factor 45	RBM17	RNA binding motif protein 17	Nucleus	other	14	14	17	11	14	11	-0.90	0.02527
IPI00303797	B-Raf proto-oncogene serine/threonine-protein kinase	BRAF	v-raf murine sarcoma viral oncogene hon	Cytoplasm	enzyme	9	9	10	8	7	5	-0.90	0.02539
IPI00384357	Isoform 1 of FYVE, RhoGEF and PH domain-containing protein 3	FGD3	FYVE, RhoGEF and PH domain containing	Cytoplasm	other	0	4	4	0	0	2	-0.90	0.02574
IPI00021518	Isoform 1 of DNA damage-binding protein 2	DDB2	damage-specific DNA binding protein 2,	Nucleus	other	10	9	0	8	11	9	0.90	0.02574
IPI00103654	Hypothetical protein	PPP4R2	protein phosphatase 4, regulatory subuni	Cytoplasm	other	1	2	1	3	5	2	0.90	0.02591
IPI00294739	SAM domain and HD domain-containing protein 1	SAMHD1	SAM domain and HD domain 1	Nucleus	enzyme	0	0	2	3	4	3	0.90	0.02591
IPI00294879	Ran GTPase-activating protein 1	RANGAP1	Ran GTPase activating protein 1	Cytoplasm	other	2	1	1	3	3	4	0.90	0.02591
IPI00024291	Bcl2-antagonist of cell death	BAD	BCL2-associated agonist of cell death	Cytoplasm	other	3	5	2	3	7	7	0.90	0.02615
IPI00030915	Ubiquitin carboxyl-terminal hydrolase 8	USP8	ubiquitin specific peptidase 8	Cytoplasm	peptidase	5	0	4	5	6	6	0.90	0.02615
IPI00009032	Lupus La protein	SSB	Sjogren syndrome antigen B (autoantigen	Nucleus	enzyme	39	42	36	34	36	36	-0.89	0.02662
IPI00003419	Small acidic protein	C11orf58	chromosome 11 open reading frame 58	unknown	other	15	11	14	14	18	17	0.89	0.02695
IPI00301421	Isoform 1 of Nuclear-interacting partner of ALK	ZC3HC1	zinc finger, C3HC-type containing 1	Nucleus	other	10	13	17	17	16	16	0.89	0.02695
IPI00334715	172 kDa protein	ARHGAP35	Rho GTPase activating protein 35	Nucleus	transcription regulator	4	2	5	6	6	6	0.88	0.02701
IPI00021076	Isoform Long of Plakophilin-4	PKP4	plakophilin 4	Plasma Membrane	other	6	0	5	7	6	6	0.87	0.02787
IPI00384689	Hypothetical protein KIAA0251	PDXDC1	pyridoxal-dependent decarboxylase dom	unknown	other	4	4	4	6	7	6	0.87	0.02787
IPI00014177	Septin-2	SEPT2	septin 2	Cytoplasm	enzyme	14	15	15	15	18	20	0.87	0.02810
IPI00004363	STE20/SPS1-related proline-alanine-rich protein kinase	STK39	serine threonine kinase 39	Nucleus	kinase	0	0	3	4	4	3	0.87	0.02812
IPI00148057	Isoform 2 of Bromodomain-containing protein 8	BRD8	bromodomain containing 8	Nucleus	transcription regulator	3	1	0	6	4	1	0.87	0.02812
IPI00414127	Ran-specific GTPase-activating protein	RANBP1	RAN binding protein 1	Nucleus	other	2	2	1	3	4	4	0.87	0.02812
IPI00010906	CLN3 protein	CLN3 (inclu	ceroid-lipofuscinosis, neuronal 3	Cytoplasm	other	0	3	7	0	0	3	-0.87	0.02820
IPI00479404	vacuolar protein sorting 13D isoform 1	VPS13D	vacuolar protein sorting 13 homolog D (S	unknown	other	5	3	3	3	0	0	-0.87	0.02820
IPI00016405	Hypothetical protein FUJ20455	OCIAD1	OCIA domain containing 1	Cytoplasm	other	6	8	6	4	4	5	-0.86	0.02871
IPI00303343	Serine arginine-rich pre-mRNA splicing factor SR-A1	SCAF1	SR-related CTD-associated factor 1	Nucleus	other	20	28	28	31	26	29	0.86	0.02898
IPI00419433	Isoform 1 of Rab11 family-interacting protein 1	RAB11FIP1	RAB11 family interacting protein 1 (class	Cytoplasm	other	14	17	15	21	18	16	0.86	0.02900
IPI00013297	28 kDa heat- and acid-stable phosphoprotein	PDAP1	PDGFA associated protein 1	Cytoplasm	other	11	11	5	11	12	12	0.85	0.02937
IPI00307591	zinc finger protein 609	ZNF609	zinc finger protein 609	unknown	other	4	6	4	8	7	6	0.85	0.02951
IPI00470596	Isoform 1 of Zinc finger protein 638	ZNF638	zinc finger protein 638	Nucleus	other	9	9	10	12	13	11	0.85	0.02969
IPI00003527	Ezrin-radixin-moesin-binding phosphoprotein 50	SLC9A3R1	solute carrier family 9 (sodium/hydrogen	Plasma Membrane	other	2	2	2	3	5	4	0.84	0.02977
IPI00005681	PREDICTED: similar to basic leucine zipper and W2 domains 1	BZW1	basic leucine zipper and W2 domains 1	Cytoplasm	translation regulator	1	4	0	5	4	3	0.84	0.02977
IPI00018240	CDNA FLJ10498 fis, clone NT2RP2000328	SDA1	SDA1 domain containing 1	Nucleus	other	7	0	4	0	4	1	-0.84	0.03170
IPI00410590	Isoform 2 of Protein FAM61A	LSM14A	LSM14A, SCD6 homolog A (S. cerevisiae)	Cytoplasm	other	18	16	18	26	16	19	0.84	0.03220
IPI00186194	KARP-1-binding protein	CEP170	centrosomal protein 170kDa	Nucleus	other	5	5	5	6	10	6	0.84	0.03225
IPI00015602	Mitochondrial precursor proteins import receptor	TOMM70A	translocase of outer mitochondrial memb	Cytoplasm	transporter	12	13	15	9	14	9	-0.83	0.03277
IPI00004472	Isoform 1 of Serine/threonine-protein kinase WNK1	WNK1	WNK lysine deficient protein kinase 1	Cytoplasm	kinase	8	5	3	9	10	4	0.83	0.03298
IPI00216952	Isoform C of Lamin-A/C	LMNA	lamin A/C	Nucleus	other	6	5	5	9	6	8	0.83	0.03298
IPI00024650	Monocarboxylate transporter 1	SLC16A1	solute carrier family 16, member 1 (monc	Plasma Membrane	transporter	11	12	9	12	14	14	0.83	0.03309

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00646058	103 kDa protein	SAFB	scaffold attachment factor B	Nucleus	other	7	12	13	16	12	12	0.83	0.03309
IPI00016074	M-phase phosphoprotein 6	MPHOSPH6	M-phase phosphoprotein 6	Nucleus	other	2	3	2	4	4	5	0.82	0.03313
IPI00289649	Tyrosine-protein phosphatase non-receptor type 3	PTPN3	protein tyrosine phosphatase, non-recept	Cytoplasm	phosphatase	4	4	5	3	0	3	-0.82	0.03350
IPI00017030	Isoform 1 of Myosin-18A	MYO18A	myosin XVIIIa	Cytoplasm	other	6	10	8	8	4	5	-0.82	0.03391
IPI00006103	CD2 antigen cytoplasmic tail-binding protein 2	CD2BP2	CD2 (cytoplasmic tail) binding protein 2	Cytoplasm	other	6	6	5	10	8	6	0.82	0.03420
IPI00005139	Isoform 1 of Retinoblastoma-like protein 1	RBL1	retinoblastoma-like 1 (p107)	Nucleus	other	3	4	0	5	5	4	0.81	0.03513
IPI00016702	Rab6 GTPase activating protein, GAPCenA	RABGAP1	RAB GTPase activating protein 1	Cytoplasm	other	4	0	3	5	3	6	0.81	0.03513
IPI00023466	Protein AF-17	MLLT6	myeloid/lymphoid or mixed-lineage leuk	Nucleus	transcription regulator	6	0	0	5	6	3	0.81	0.03513
IPI00302238	Protein AATF	AATF	apoptosis antagonizing transcription fact	Nucleus	transcription regulator	0	4	3	5	4	5	0.81	0.03513
IPI00022145	Nuclear ubiquitous casein and cyclin-dependent kinases substrat	NUCKS1	nuclear casein kinase and cyclin-depende	Nucleus	kinase	66	61	55	61	54	56	-0.80	0.03535
IPI00185919	Isoform 1 of La-related protein 1	LARP1	La ribonucleoprotein domain family, men	Cytoplasm	other	45	37	42	44	39	31	-0.79	0.03560
IPI00420014	U5 small nuclear ribonucleoprotein 200 kDa helicase	SNRNP200	small nuclear ribonucleoprotein 200kDa (	Nucleus	enzyme	6	7	6	8	8	10	0.80	0.03573
IPI00433194	EHBP1 protein	EHBP1	EH domain binding protein 1	Cytoplasm	other	5	7	7	7	9	10	0.80	0.03573
IPI00012462	CDA02	EIF2A	eukaryotic translation initiation factor 2A,	Cytoplasm	translation regulator	7	7	6	6	10	11	0.79	0.03601
IPI00008917	Isoform 1 of Doublecortin domain-containing protein 2	DCDC2	doublecortin domain containing 2	unknown	other	0	0	0	2	4	2	0.79	0.03611
IPI00012788	Isoform 2 of RNA polymerase I-associated factor PAF49	CD3EAP	CD3e molecule, epsilon associated protei	Nucleus	other	0	0	0	0	0	6	0.79	0.03611
IPI00016610	Poly(rC)-binding protein 1	PCBP1	poly(rC) binding protein 1	Nucleus	translation regulator	1	1	0	4	3	1	0.79	0.03611
IPI00023287	Isoform 4 of E3 ubiquitin-protein ligase NEDD4-like protein	NEDD4L	neural precursor cell expressed, developn	Cytoplasm	enzyme	0	0	0	2	2	4	0.79	0.03611
IPI00164528	Alpha-1-syntrophin	SNTA1	syntrophin, alpha 1 (dystrophin-associat	Plasma Membrane	other	0	0	0	4	3	0	0.79	0.03611
IPI00180404	Similar to Autoantigen protein	NEXN	nexilin (F actin binding protein)	Plasma Membrane	other	0	0	0	4	0	3	0.79	0.03611
IPI000291638	RB1-inducible coiled-coil protein 1	RB1CC1	RB1-inducible coiled-coil 1	Nucleus	other	1	1	1	2	3	3	0.79	0.03611
IPI00297261	Tyrosine-protein phosphatase non-receptor type 1	PTPN1	protein tyrosine phosphatase, non-recept	Cytoplasm	phosphatase	1	1	0	3	2	3	0.79	0.03611
IPI00329638	Isoform 1 of Mitogen-activated protein kinase kinase kinase MLT ZAK	ZAK	sterile alpha motif and leucine zipper con	Cytoplasm	kinase	0	0	0	0	3	4	0.79	0.03611
IPI00412993	CDNA FLJ36874 fis, clone ASTRO2018169, weakly similar to Ooc	PATL1	protein associated with topoisomerase II	unknown	other	0	0	0	6	0	0	0.79	0.03611
IPI00746419	IMP dehydrogenase/GMP reductase family protein	FRY	furry homolog (Drosophila)	unknown	other	0	0	0	6	0	0	0.79	0.03611
IPI00029011	Kinesin family member 1B	KIF1B	kinesin family member 1B	Cytoplasm	transporter	2	3	3	0	0	0	-0.79	0.03656
IPI00163420	Isoform 3 of Receptor-type tyrosine-protein phosphatase alpha f	PTPRA	protein tyrosine phosphatase, receptor ty	Plasma Membrane	phosphatase	2	3	3	0	0	0	-0.79	0.03656
IPI00299824	Isoform 1 of Connector enhancer of kinase suppressor of ras 1	CNKSR1	connector enhancer of kinase suppressor	Cytoplasm	other	4	0	3	0	0	0	-0.79	0.03656
IPI00332106	Pre-B-cell leukemia transcription factor interacting protein 1	PBXIP1	pre-B-cell leukemia homeobox interactin	Nucleus	transcription regulator	2	3	3	0	0	0	-0.79	0.03656
IPI00016670	FLJ20625 protein	LAMTOR1	late endosomal/lysosomal adaptor, MAPK	Plasma Membrane	other	3	2	4	4	5	6	0.79	0.03704
IPI00383597	Isoform A of Anion exchange protein 2	SLC4A2	solute carrier family 4, anion exchanger, r	Plasma Membrane	transporter	4	4	0	6	5	4	0.79	0.03704
IPI00182757	Isoform 1 of Protein KIAA1967	KIAA1967		Cytoplasm	peptidase	10	9	9	7	6	8	-0.79	0.03863
IPI00022970	Nucleoprotein TPR	TPR	translocated promoter region (to activate	Nucleus	other	4	2	4	5	7	4	0.78	0.03939
IPI00179890	Isoform B of Ras-GTPase-activating protein-binding protein 2	G3BP2	GTPase activating protein (SH3 domain) t	Nucleus	enzyme	16	18	19	14	15	16	-0.77	0.03953
IPI00549473	PREDICTED: similar to Forkhead box protein K1 (Myocyte nuclear	FOXK1	forkhead box K1	Nucleus	transcription regulator	11	16	17	13	19	20	0.77	0.03962
IPI00302594	hypothetical protein LOC91748	C14orf43	chromosome 14 open reading frame 43	Nucleus	other	7	10	6	9	11	10	0.77	0.03967
IPI00001632	hypothetical protein LOC57648	KIAA1522	KIAA1522	unknown	other	21	16	18	13	17	17	-0.76	0.03979
IPI00186966	Isoform IIA of Myc box-dependent-interacting protein 1	BIN1	bridging integrator 1	Nucleus	other	12	8	11	6	8	10	-0.77	0.03979
IPI00012345	Isoform SRP55-1 of Splicing factor, arginine/serine-rich 6	SRSF6	serine/arginine-rich splicing factor 6	Nucleus	other	13	15	18	18	17	19	0.77	0.03996
IPI00182728	Vacuolar sorting protein 4b	VPS4B	vacuolar protein sorting 4 homolog B (S.	Cytoplasm	transporter	6	8	10	11	10	10	0.77	0.04008
IPI00103090	Hypothetical protein LEO1	LEO1	Leo1, Paf1/RNA polymerase II complex cc	Nucleus	other	18	17	12	23	17	15	0.76	0.04022
IPI00003394	Isoform SMN of Survival motor neuron protein					4	0	6	9	4	4	0.76	0.04024
IPI00159652	PREDICTED: hypothetical protein LOC23045 isoform 1	FRYL	FRY-like	unknown	other	4	4	3	6	6	5	0.76	0.04024
IPI00295502	PREDICTED: widely-interspaced zinc finger motifs isoform 1	WIZ	widely interspaced zinc finger motifs	Nucleus	other	3	4	4	4	6	7	0.76	0.04024
IPI00386700	ladinin 1	LAD1	ladinin 1	Extracellular Space	other	8	9	8	11	9	12	0.76	0.04064
IPI00030531	sarcolemma associated protein	SLMAP	sarcolemma associated protein	Plasma Membrane	other	1	2	1	3	3	3	0.76	0.04074
IPI00043638	Isoform 2 of La-related protein 4	LARP4	La ribonucleoprotein domain family, men	unknown	other	2	0	1	5	3	0	0.76	0.04074
IPI00291939	Structural maintenance of chromosome 1-like 1 protein	SMC1A	structural maintenance of chromosomes	Nucleus	transporter	2	1	1	2	3	4	0.76	0.04074
IPI00413728	Isoform 1 of Spectrin alpha chain, brain	SPTAN1	spectrin, alpha, non-erythrocytic 1 (alpha-	Plasma Membrane	other	1	1	2	4	2	3	0.76	0.04074
IPI00464978	Insulin receptor substrate 2 insertion mutant (Fragment)	IRS2	insulin receptor substrate 2	Cytoplasm	enzyme	0	2	0	3	3	3	0.76	0.04074
IPI00449906	Isoform 1 of Rho guanine nucleotide exchange factor 7	ARHGEF7	Rho guanine nucleotide exchange factor	Cytoplasm	other	4	0	4	0	2	1	-0.76	0.04075
IPI00297160	CD44 antigen isoform 4 precursor	CD44	CD44 molecule (Indian blood group)	Plasma Membrane	other	15	16	18	21	18	18	0.76	0.04114
IPI00021786	RAF proto-oncogene serine/threonine-protein kinase	RAF1	v-raf-1 murine leukemia viral oncogene h	Cytoplasm	kinase	6	10	10	12	13	8	0.75	0.04143
IPI00170778	Formin binding protein 4	FNBP4	formin binding protein 4	Nucleus	other	8	8	10	10	13	10	0.75	0.04143

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00219793	Isoform 2 of Suppressor of SWI4 1 homolog	PPAN	peter pan homolog (Drosophila)	Nucleus	other	6	5	0	4	7	7	0.75	0.04159
IPI00550506	Isoform 1 of Rho guanine nucleotide exchange factor 16	ARHGEF16	Rho guanine nucleotide exchange factor 16	Cytoplasm	other	3	3	6	8	2	8	0.75	0.04159
IPI00020060	Sodium/hydrogen exchanger 1	SLC9A1	solute carrier family 9 (sodium/hydrogen antiporter)	Plasma Membrane	ion channel	7	6	5	4	3	5	-0.75	0.04241
IPI00006298	Isoform 1 of Peptidyl-prolyl cis-trans isomerase G	PP1G	peptidylprolyl isomerase G (cyclophilin G)	Nucleus	enzyme	12	13	10	12	9	7	-0.74	0.04281
IPI00217468	Histone H1.5	HIST1H1B	histone cluster 1, H1b	Nucleus	other	20	16	19	18	24	21	0.74	0.04328
IPI00170770	PHD finger protein 3	PHF3	PHD finger protein 3	Nucleus	other	5	9	5	5	5	3	-0.74	0.04328
IPI00023748	Nascent polypeptide-associated complex alpha subunit	NACA	nascent polypeptide-associated complex alpha subunit	Cytoplasm	transcription regulator	3	3	7	7	6	6	0.74	0.04331
IPI00217121	Protein C19orf21	C19orf21	chromosome 19 open reading frame 21	unknown	other	4	4	5	5	6	8	0.74	0.04331
IPI00470779	Alpha-taxilin	TXLNA	taxilin alpha	Extracellular Space	cytokine	5	4	4	7	7	5	0.74	0.04331
IPI00142538	Isoform 1 of Probable helicase senataxin	SETX	senataxin	Nucleus	enzyme	2	2	1	2	6	2	0.73	0.04390
IPI00337335	Isoform 1 of Myosin-14	MYH14	myosin, heavy chain 14, non-muscle	Extracellular Space	other	1	2	2	3	2	5	0.73	0.04390
IPI00007183	Hypothetical protein ARL6IP2	ATL2	atlastin GTPase 2	Cytoplasm	other	4	3	3	3	0	0	-0.73	0.04411
IPI00025333	Isoform 3 of Anamorsin	CIAPIN1	cytokine induced apoptosis inhibitor 1	Cytoplasm	other	3	4	3	0	3	0	-0.73	0.04411
IPI00030274	hypothetical protein LOC84081 isoform 1	NSRP1	nuclear speckle splicing regulatory protein 1	Nucleus	other	3	2	5	3	0	0	-0.73	0.04411
IPI00427522	Isoform 1 of Peroxisome proliferator-activated receptor-binding protein 1	ERBB2IP	erbB2 interacting protein	Extracellular Space	cytokine	7	3	4	6	6	8	0.73	0.04447
IPI00438286	Isoform 1 of LAP2 protein	ERBB2IP	erbB2 interacting protein	Extracellular Space	cytokine	7	4	3	7	6	7	0.73	0.04447
IPI00607645	Sin3 histone deacetylase corepressor complex component SDS3	SUDS3	suppressor of defective silencing 3 homolog	Nucleus	other	7	6	7	8	0	5	-0.73	0.04452
IPI00013830	SNW domain-containing protein 1	SNW1	SNW domain containing 1	Nucleus	transcription regulator	19	19	21	19	25	23	0.73	0.04483
IPI00031519	Isoform 1 of DNA methyltransferase 1	DNMT1	DNA (cytosine-5-)-methyltransferase 1	Nucleus	enzyme	11	11	9	11	15	12	0.73	0.04485
IPI00329236	Protein kinase C delta type 2	PRKCD	protein kinase C, delta	Cytoplasm	kinase	7	4	4	8	6	7	0.72	0.04515
IPI00006038	Isoform 1 of Nuclear pore complex protein Nup98-Nup96 precursor	NUP98	nucleoporin 98kDa	Nucleus	transporter	10	12	11	15	11	14	0.72	0.04615
IPI00216049	Isoform 1 of Heterogeneous nuclear ribonucleoprotein K	HNRNPK	heterogeneous nuclear ribonucleoprotein K	Nucleus	other	11	11	11	17	12	11	0.72	0.04615
IPI00030131	thymopoietin isoform beta	TMPO	thymopoietin	Nucleus	other	12	12	10	13	14	14	0.72	0.04637
IPI00292753	GTPase activating protein and VPS9 domains 1	GAPVD1	GTPase activating protein and VPS9 domains 1	Cytoplasm	other	5	5	6	6	8	8	0.71	0.04665
IPI00219526	phosphoglucomutase 1	PGM1	phosphoglucomutase 1	Cytoplasm	enzyme	2	1	3	3	5	3	0.71	0.04693
IPI00064767	nadrin isoform 1	ARHGAP17	Rho GTPase activating protein 17	Cytoplasm	other	5	4	8	4	9	10	0.70	0.04823
IPI00029019	Ubiquitin-associated protein 2-like	UBAP2L	ubiquitin associated protein 2-like	unknown	other	13	12	12	15	13	16	0.70	0.04838
IPI00152377	Source of immunodominant MHC-associated peptides	STT3B	STT3, subunit of the oligosaccharyltransferase	Cytoplasm	enzyme	12	14	12	15	15	15	0.70	0.04855
IPI00008475	Hydroxymethylglutaryl-CoA synthase, cytoplasmic	HMGCS1	3-hydroxy-3-methylglutaryl-CoA synthase	Cytoplasm	enzyme	0	3	3	4	4	4	0.69	0.04938
IPI00032236	Isoform 2 of Angiomotin-like protein 2	AMOTL2	angiomotin like 2	Plasma Membrane	other	2	2	3	4	5	3	0.69	0.04938
IPI00306301	Pyruvate dehydrogenase E1 component alpha subunit, somatic form	PDHA1	pyruvate dehydrogenase (lipoamide) alpha subunit	Cytoplasm	enzyme	3	0	3	5	5	2	0.69	0.04938
IPI00470461	Hypothetical protein DKFZp686L2367	ZNF462	zinc finger protein 462	Nucleus	other	2	1	4	3	3	6	0.69	0.04938
IPI00011857	Chromatin assembly factor 1 subunit B	CHAF1B	chromatin assembly factor 1, subunit B (p)	Nucleus	other	6	6	7	8	7	10	0.69	0.05034
IPI00013774	Histone deacetylase 1	HDAC1	histone deacetylase 1	Nucleus	transcription regulator	14	15	12	13	17	18	0.69	0.05048
IPI00299254	Eukaryotic translation initiation factor 5B	EIF5B	eukaryotic translation initiation factor 5B	Cytoplasm	transcription regulator	47	46	43	50	44	51	0.69	0.05056
IPI00234252	SWI/SNF-related matrix-associated actin-dependent regulator of chromatin 1	SMARCC1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin 1	Nucleus	transcription regulator	18	14	12	18	17	16	0.68	0.05116
IPI00298994	Talin-1	TLN1	talin 1	Plasma Membrane	other	2	3	3	4	4	5	0.68	0.05122
IPI00301311	Isoform 2 of Protein SET	SET	SET nuclear oncogene	Nucleus	phosphatase	4	1	3	4	4	5	0.68	0.05122
IPI00644127	Isoleucyl-tRNA synthetase, cytoplasmic	IARS	isoleucyl-tRNA synthetase	Cytoplasm	enzyme	2	1	5	5	4	4	0.68	0.05122
IPI00002349	FMRP interacting protein, 82kD	NUFIP2	nuclear fragile X mental retardation protein 2	Cytoplasm	other	19	17	20	19	17	13	-0.66	0.05295
IPI00220219	Coatomer subunit beta'	COPB2	coatamer protein complex, subunit beta prime	Cytoplasm	transporter	19	18	19	15	16	18	-0.66	0.05295
IPI00009771	Lamin-B2	LMNB2	lamin B2	Nucleus	other	2	2	5	3	5	6	0.66	0.05349
IPI00017184	EH-domain-containing protein 1	EHD1	EH-domain containing 1	Cytoplasm	other	3	3	3	3	5	6	0.66	0.05349
IPI00217978	26 kDa protein	MED19	mediator complex subunit 19	Nucleus	other	3	5	0	6	5	3	0.66	0.05349
IPI00303954	cytochrome b5 outer mitochondrial membrane precursor	CYB5B	cytochrome b5 type B (outer mitochondrial membrane)	Cytoplasm	enzyme	4	2	3	6	4	4	0.66	0.05349
IPI00106847	Isoform GTBP-alt of DNA mismatch repair protein MSH6	MSH6	mutS homolog 6 (E. coli)	Nucleus	enzyme	5	3	6	3	2	4	-0.66	0.05369
IPI00455500	rapamycin-insensitive companion of mTOR	RICTOR	RPTOR independent companion of mTOR	Cytoplasm	other	5	4	5	3	2	4	-0.66	0.05369
IPI00477949	zinc finger protein 262	ZMYM4	zinc finger, MYM-type 4	unknown	other	5	4	5	2	5	2	-0.66	0.05369
IPI00184330	DNA replication licensing factor MCM2	MCM2	minichromosome maintenance complex component 2	Nucleus	enzyme	19	12	19	22	19	16	0.66	0.05411
IPI00455518	MORC family CW-type zinc finger 2	MORC2	MORC family CW-type zinc finger 2	unknown	other	8	8	8	9	9	12	0.66	0.05435
IPI00335634	Isoform Beta of Paxillin	PXN	paxillin	Cytoplasm	other	19	22	13	23	21	17	0.65	0.05547
IPI00030968	Hypothetical protein C9orf142	C9orf142	chromosome 9 open reading frame 142	unknown	other	4	2	4	5	5	5	0.65	0.05548
IPI00032374	Isoform 2 of Protein KIAA0179	RRP1B	ribosomal RNA processing 1 homolog B	Nucleus	other	4	3	3	5	4	6	0.65	0.05548
IPI00060181	EF-hand domain-containing protein 2	EFHD2	EF-hand domain family, member D2	unknown	other	3	4	3	3	5	7	0.65	0.05548

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00176903	Isoform 1 of Polymerase I and transcript release factor	PTRF	polymerase I and transcript release factor	Nucleus	transcription regulator	4	1	5	5	5	5	0.65	0.05548
IPI00165970	Isoform 1 of DGCR8 protein	DGCR8	DiGeorge syndrome critical region gene 8	Nucleus	enzyme	3	6	6	3	3	4	-0.65	0.05561
IPI00410717	Isoform 1 of Pogo transposable element with ZNF domain	POGZ	pogo transposable element with ZNF domain	Nucleus	enzyme	5	5	5	4	0	5	-0.65	0.05561
IPI00161085	Isoform 1 of Nucleolar protein 8	NOL8	nucleolar protein 8	Nucleus	other	12	10	10	9	5	12	-0.65	0.05591
IPI00013174	Isoform 1 of RNA-binding protein 14					12	11	10	7	9	11	-0.64	0.05710
IPI00001649	DNAJ domain-containing	DNAJC15	Dnaj (Hsp40) homolog, subfamily C, member 15	Cytoplasm	other	0	0	0	0	0	5	0.64	0.05751
IPI00007411	A-kinase anchor protein 11	AKAP11	A kinase (PRKA) anchor protein 11	Cytoplasm	other	0	0	0	0	3	3	0.64	0.05751
IPI00009342	Ras GTPase-activating-like protein IQGAP1	IQGAP1	IQ motif containing GTPase activating protein	Cytoplasm	other	1	1	0	3	2	2	0.64	0.05751
IPI00010463	GTP binding protein 1	GTPBP1	GTP binding protein 1	Cytoplasm	enzyme	0	0	0	5	0	0	0.64	0.05751
IPI00021263	14-3-3 protein zeta/delta	YWHAZ	tyrosine 3-monooxygenase/tryptophan 5-hydroxylase	Cytoplasm	enzyme	1	1	1	3	2	2	0.64	0.05751
IPI00022465	Isoform 1 of Citron Rho-interacting kinase	CIT	citron (rho-interacting, serine/threonine kinase)	Cytoplasm	kinase	0	0	0	3	0	3	0.64	0.05751
IPI00029745	Nuclear factor 1 A-type	NFIA	nuclear factor 1A	Nucleus	transcription regulator	0	0	0	3	0	3	0.64	0.05751
IPI00031195	Isoform 1 of Vang-like protein 1	VANGL1	vang-like 1 (van gogh, Drosophila)	Cytoplasm	other	0	0	1	1	4	2	0.64	0.05751
IPI00032003	Emerin	EMD	emerin	Nucleus	other	0	0	0	2	2	3	0.64	0.05751
IPI00163851	Isoform 1 of Eukaryotic translation initiation factor 2-alpha kinase	EIF2AK4	eukaryotic translation initiation factor 2 alpha kinase	Cytoplasm	kinase	0	1	1	2	3	2	0.64	0.05751
IPI00168878	Torsin-1A-interacting protein 2	TOR1AIP2	torsin A interacting protein 2	Cytoplasm	other	0	0	1	2	2	3	0.64	0.05751
IPI00186028	Hypothetical protein DKFZp434A112	SAP130	Sin3A-associated protein, 130kDa	Nucleus	transcription regulator	0	0	0	0	2	4	0.64	0.05751
IPI00294250	Ephrin type-A receptor 1 precursor	EPHA1	EPH receptor A1	Plasma Membrane	kinase	0	0	0	0	0	5	0.64	0.05751
IPI00294391	Cdc42 effector protein 3	CDC42EP3	CDC42 effector protein (Rho GTPase binding)	Cytoplasm	other	0	0	0	2	0	4	0.64	0.05751
IPI00301058	Vasodilator-stimulated phosphoprotein	VASP	vasodilator-stimulated phosphoprotein	Plasma Membrane	other	1	1	1	2	3	2	0.64	0.05751
IPI00329142	Glutamate-rich protein 1	ERIC1H	glutamate-rich 1	unknown	other	0	0	0	2	2	3	0.64	0.05751
IPI00744767	SAMD4A protein	SAMD4A	sterile alpha motif domain containing 4A	Cytoplasm	translation regulator	0	0	0	2	3	2	0.64	0.05751
IPI00008422	Isoform 2 of SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subunit 1	SMARCA2	SWI/SNF-related, matrix-associated actin-dependent regulator of chromatin subunit 1	Nucleus	enzyme	0	2	4	0	0	0	-0.64	0.06334
IPI00021363	Jumonji/ARID domain-containing protein 1A	KDM5A	lysine (K)-specific demethylase 5A	Nucleus	transcription regulator	1	4	2	0	0	0	-0.64	0.06334
IPI00289608	Isoform 2 of AP-3 complex subunit delta-1	AP3D1	adaptor-related protein complex 3, delta-1	Cytoplasm	transporter	3	2	2	0	0	0	-0.64	0.06334
IPI00554521	Ferritin heavy chain	FTH1	(includes ferritin, heavy polypeptide 1)	Cytoplasm	enzyme	2	2	3	1	1	0	-0.64	0.06334
IPI00740502	PREDICTED: similar to ELG protein					3	2	2	0	0	0	-0.64	0.06334
IPI00219754	Isoform 2 of Liprin-alpha-1	PPFIA1	protein tyrosine phosphatase, receptor type 11 subunit A	Plasma Membrane	phosphatase	7	5	4	4	6	0	-0.64	0.06379
IPI00301618	Isoform 1 of Serologically defined colon cancer antigen 1	NEMF	nuclear export mediator factor	Nucleus	other	7	4	6	4	5	3	-0.63	0.06535
IPI00431127	Isoform 1 of Cyclin-K	CCNK	cyclin K	Nucleus	other	7	6	4	8	1	3	-0.63	0.06535
IPI00414315	Isoform 1 of Epidermal growth factor receptor kinase substrate 8	EPS8L2	EPS8-like 2	unknown	other	9	10	10	12	12	11	0.63	0.06555
IPI00010158	Chromatin accessibility complex protein 1	CHRAC1	chromatin accessibility complex 1	Nucleus	enzyme	3	3	6	7	4	6	0.63	0.06626
IPI00304885	Centromere protein C 1	CENPC1	centromere protein C 1	Nucleus	other	2	8	2	5	8	4	0.63	0.06626
IPI00001780	Ubiquitin carboxyl-terminal hydrolase 16	USP16	ubiquitin specific peptidase 16	Cytoplasm	peptidase	7	5	6	4	4	5	-0.62	0.06646
IPI00419322	hepatoma-derived growth factor-related protein 2 isoform 1	HDGFRP2	hepatoma-derived growth factor-related protein 2	Nucleus	other	12	15	12	16	9	8	-0.62	0.06685
IPI00008274	Adenylyl cyclase-associated protein 1	CAP1	CAP, adenylyl cyclase-associated protein	Plasma Membrane	other	23	24	20	25	26	23	0.62	0.06724
IPI00411559	Isoform 1 of Structural maintenance of chromosomes 4-like 1 protein	SMC4	structural maintenance of chromosomes 4-like 1 protein	Nucleus	transporter	9	9	14	12	12	14	0.62	0.06727
IPI00395444	Calmodulin regulated spectrin-associated protein 1	CAMSAP1	calmodulin regulated spectrin-associated protein	unknown	other	4	6	3	7	5	6	0.62	0.06740
IPI00004413	Tumor necrosis factor receptor superfamily member 21 precursor	TNFRSF21	tumor necrosis factor receptor superfamily member 21 precursor	Plasma Membrane	other	4	3	1	2	0	0	-0.62	0.06769
IPI00014537	Calumenin precursor	CALU	calumenin	Cytoplasm	other	3	2	3	0	2	1	-0.62	0.06769
IPI00016006	Gephyrin	GPHN	gephyrin	Plasma Membrane	enzyme	3	2	3	0	2	0	-0.62	0.06769
IPI00027230	Endoplasmic precursor	HSP90B1	heat shock protein 90kDa beta (Grp94), class B	Cytoplasm	other	3	3	2	1	2	1	-0.62	0.06769
IPI00028955	Ribosome biogenesis protein BOP1	BOP1/LOC727222	block of proliferation 1	Nucleus	other	2	3	3	2	0	0	-0.62	0.06769
IPI00410330	Isoform 1 of Transcriptional repressor p66 alpha	GATAD2A	GATA zinc finger domain containing 2A	Nucleus	transcription regulator	6	8	5	8	5	0	-0.61	0.06812
IPI00000077	Ribonuclease H1	RNASEH1	ribonuclease H1	Nucleus	enzyme	0	0	2	2	3	3	0.62	0.06827
IPI00243221	Nardilysin	NRD1	(includes nardilysin (N-arginine dibasic convertase))	Cytoplasm	peptidase	1	2	1	5	1	2	0.62	0.06827
IPI00290410	Acidic 82 kDa protein mRNA	DNTTIP2	deoxynucleotidyltransferase, terminal, intergenic	Nucleus	other	2	0	1	5	0	2	0.62	0.06827
IPI00306046	Serine/threonine-protein kinase RIO2	RIOK2	RIO kinase 2 (yeast)	unknown	kinase	2	0	0	3	0	4	0.62	0.06827
IPI00175146	hypothetical protein LOC196441	ZFC3H1	zinc finger, C3H1-type containing	unknown	other	5	4	5	7	6	6	0.61	0.06919
IPI00103004	HABP4 protein	HABP4	hyaluronan binding protein 4	Cytoplasm	other	8	7	6	5	6	5	-0.60	0.06988
IPI00217467	Histone H1.4	HIST1H1E	histone cluster 1, H1e	Nucleus	other	11	13	13	17	12	14	0.60	0.06997
IPI00023780	Isoform 2 of Dnaj homolog subfamily C member 5	DNAJC5	Dnaj (Hsp40) homolog, subfamily C, member 5	Plasma Membrane	other	14	18	14	12	13	15	-0.59	0.07002
IPI00220739	Membrane-associated progesterone receptor component 1	PGRMC1	progesterone receptor membrane component 1	Plasma Membrane	transmembrane receptor	26	24	28	29	30	26	0.60	0.07043
IPI00038698	Retinoblastoma-associated protein RAP140	FAM208A	family with sequence similarity 208, member 1	unknown	other	6	7	3	7	8	6	0.60	0.07087



**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00010368	Kinesin-like protein KIF2	KIF2A	kinesin heavy chain member 2A	Cytoplasm	other	0	2	2	4	3	2	0.59	0.07147
IPI00019835	Isoform 1 of Bcl-2-related proline-rich protein	BCL2L12	BCL2-like 12 (proline rich)	unknown	other	2	2	0	4	2	3	0.59	0.07147
IPI00028065	Cytoplasmic protein NCK1	NCK1	NCK adaptor protein 1	Cytoplasm	kinase	2	2	0	2	3	4	0.59	0.07147
IPI00107745	Isoform 1 of Cisplatin resistance-associated overexpressed protein	LUC7L3	LUC7-like 3 (S. cerevisiae)	Nucleus	other	2	1	2	3	5	1	0.59	0.07147
IPI00160348	claspin	CLSPN	claspin	Nucleus	other	0	0	3	2	4	3	0.59	0.07147
IPI00329650	Nucleoporin NUP53	NUP35	nucleoporin 35kDa	Nucleus	transporter	2	2	0	3	3	3	0.59	0.07147
IPI00399254	OTU domain containing 4 protein isoform 1	OTUD4	OTU domain containing 4	unknown	other	2	0	2	3	5	0	0.59	0.07147
IPI00448751	Hypothetical protein DKFZp686A0439	KIAA1598	KIAA1598	unknown	other	2	1	2	1	3	5	0.59	0.07147
IPI00646377	Isoform 1 of Eukaryotic translation initiation factor 4 gamma 3	EIF4G3	eukaryotic translation initiation factor 4 g	Cytoplasm	translation regulator	1	1	3	3	3	3	0.59	0.07147
IPI00011898	Translation initiation factor eIF-2B subunit epsilon	EIF2B5	eukaryotic translation initiation factor 2B,	Cytoplasm	translation regulator	2	2	5	2	2	0	-0.59	0.07445
IPI00016780	Isoform 1 of PR domain zinc finger protein 2	PRDM2	PR domain containing 2, with ZNF domain	Nucleus	transcription regulator	2	2	5	0	3	0	-0.59	0.07445
IPI00419979	p21-activated kinase 2					10	6	6	7	5	5	-0.59	0.07483
IPI00409640	LISCH protein isoform 2	LSR	lipolysis stimulated lipoprotein receptor	Nucleus	transcription regulator	21	16	15	16	14	16	-0.58	0.07595
IPI00029778	Isoform 1 of Tumor suppressor p53-binding protein 1	TP53BP1	tumor protein p53 binding protein 1	Nucleus	transcription regulator	67	60	62	68	54	59	-0.58	0.07627
IPI00002804	Serine/threonine-protein kinase N2	PKN2	protein kinase N2	Cytoplasm	kinase	5	7	6	6	9	8	0.58	0.07641
IPI00337530	Isoform 1 of RalBP1-associated Eps domain-containing protein 1	REPS1	RALBP1 associated Eps domain containing	Plasma Membrane	other	9	6	3	11	6	6	0.58	0.07641
IPI00023048	Elongation factor 1-delta	EEF1D	eukaryotic translation elongation factor 1	Cytoplasm	translation regulator	33	30	32	37	32	33	0.58	0.07684
IPI00002214	Importin alpha-2 subunit	KPNA2	karyopherin alpha 2 (RAG cohort 1, importin alpha 2)	Nucleus	transporter	2	2	2	2	5	3	0.58	0.07730
IPI00018963	Isoform 1 of Alpha-parvin	PARVA	parvin, alpha	Cytoplasm	other	2	2	2	2	5	3	0.58	0.07730
IPI00253281	Isoform 2 of Epidermal growth factor receptor kinase substrate 8	EPS8L1	EPS8-like 1	unknown	other	0	0	8	4	0	0	-0.58	0.07831
IPI00472675	Nuclear pore complex protein Nup205	NUP205	nucleoporin 205kDa	Nucleus	other	3	4	3	3	2	1	-0.58	0.07831
IPI00024071	Isoform Long of Heat shock factor protein 1	HSF1	heat shock transcription factor 1	Nucleus	transcription regulator	8	9	9	5	10	6	-0.57	0.07953
IPI00414481	Isoform 1 of General transcription factor 3C polypeptide 1	GTF3C1	general transcription factor IIIc, polypeptide 1	Nucleus	transcription regulator	9	9	8	8	8	5	-0.57	0.07953
IPI00748715	septin 9	SEPT9	septin 9	Cytoplasm	enzyme	9	10	7	4	11	6	-0.57	0.07953
IPI00642673	ATP-binding cassette, sub-family F (GCN20), member 1	ABCF1	ATP-binding cassette, sub-family F (GCN2)	Cytoplasm	transporter	35	33	32	36	36	35	0.57	0.07974
IPI00100980	EH-domain-containing protein 2	EHD2	EH-domain containing 2	Nucleus	other	8	8	4	10	8	7	0.57	0.07975
IPI00180154	Isoform 1 of Ataxin-2	ATXN2	ataxin 2	Nucleus	other	7	7	8	8	9	10	0.56	0.08087
IPI00003373	Occludin	OCLN	occludin	Plasma Membrane	other	4	0	2	3	5	3	0.56	0.08108
IPI00171273	Isoform A of Myotubularin-related protein 3	MTMR3	myotubularin related protein 3	Cytoplasm	phosphatase	0	3	3	0	5	5	0.56	0.08108
IPI00218323	Tumor protein D52	TPD52	tumor protein D52	Cytoplasm	other	2	3	2	3	4	4	0.56	0.08108
IPI00455199	Zuotin-related factor 1	DNAJC2	Dnaj (Hsp40) homolog, subfamily C, member 2	Nucleus	other	5	0	0	4	3	4	0.56	0.08108
IPI00107104	Chromosome X open reading frame 26	CXorf26	chromosome X open reading frame 26	unknown	other	4	3	4	4	2	0	-0.56	0.08214
IPI00008490	UNC93 homolog B1	UNC93B1	unc-93 homolog B1 (C. elegans)	Cytoplasm	other	9	9	10	8	8	7	-0.56	0.08254
IPI00456681	Isoform 1 of Transcription elongation factor SPT6	SUPT6H	suppressor of Ty 6 homolog (S. cerevisiae)	Nucleus	transcription regulator	8	11	9	10	6	7	-0.56	0.08254
IPI00743778	76 kDa protein	TOR1AIP1	torsin A interacting protein 1	Nucleus	other	23	18	22	16	22	19	-0.55	0.08269
IPI00022143	Isoform 1 of Protein FAM62A	ESYT1	extended synaptotagmin-like protein 1	unknown	other	2	4	2	3	5	4	0.55	0.08429
IPI00297178	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 16	DHX16	DEAH (Asp-Glu-Ala-His) box polypeptide	Nucleus	enzyme	2	5	0	7	4	0	0.55	0.08429
IPI00479926	Isoform 2 of Ribosomal protein S6 kinase alpha-4	RPS6KA4	ribosomal protein S6 kinase, 90kDa, polypeptide 4	Cytoplasm	kinase	0	3	4	4	3	5	0.55	0.08429
IPI00607554	Isoform 1 of Ubiquitin carboxyl-terminal hydrolase 47	USP47	ubiquitin specific peptidase 47	Cytoplasm	peptidase	4	2	2	3	4	5	0.55	0.08429
IPI00394926	DNA polymerase delta subunit 3	POLD3	polymerase (DNA-directed), delta 3, accessory	Nucleus	transcription regulator	10	10	10	9	9	7	-0.55	0.08557
IPI00017763	Nucleosome assembly protein 1-like 4	NAP1L4	nucleosome assembly protein 1-like 4	Nucleus	other	25	21	23	21	23	19	-0.54	0.08600
IPI00009544	RalA-binding protein 1	RALBP1	ralA binding protein 1	Cytoplasm	enzyme	9	10	6	7	11	12	0.55	0.08612
IPI00376976	Isoform 1 of 130-kDa phosphatidylinositol 4,5-bisphosphate-dependent protein kinase	ASAP1	ArfGAP with SH3 domain, ankyrin repeat	Plasma Membrane	other	6	10	9	7	10	13	0.55	0.08612
IPI00179700	high mobility group AT-hook 1 isoform a	HMGGA1	high mobility group AT-hook 1	Nucleus	transcription regulator	11	10	11	11	7	9	-0.54	0.08642
IPI00216689	Poly(rC)-binding protein 2	PCBP2	poly(rC) binding protein 2	Nucleus	other	8	10	8	9	11	11	0.54	0.08665
IPI00297211	SWI/SNF-related matrix-associated actin-dependent regulator of transcription	SMARCA5	SWI/SNF related, matrix associated, actin dependent	Nucleus	transcription regulator	8	8	11	12	10	10	0.54	0.08707
IPI00375124	Ubiquitin carboxyl-terminal hydrolase 42					3	3	3	5	4	4	0.54	0.08757
IPI00001707	Isoform 1 of Bromodomain-containing protein 7	BRD7	bromodomain containing 7	Nucleus	transcription regulator	5	5	3	0	4	4	-0.54	0.08853
IPI00003964	ubiquitin specific protease 9, X-linked isoform 4	USP9X	ubiquitin specific peptidase 9, X-linked	Plasma Membrane	peptidase	3	5	5	4	2	3	-0.54	0.08853
IPI00103867	Isoform 1 of Rififylin	RFFL	ring finger and FYVE-like domain containing	Cytoplasm	enzyme	4	4	5	3	4	2	-0.54	0.08853
IPI00032342	Thyroid receptor-interacting protein 12	TRIP12	thyroid hormone receptor interactor 12	Cytoplasm	enzyme	7	10	12	13	10	11	0.53	0.09020
IPI00425560	Isoform 1 of LAP4 protein	SCRIB	scribbled homolog (Drosophila)	Cytoplasm	other	23	23	25	26	23	28	0.53	0.09039
IPI00031960	polymerase (RNA) I polypeptide A, 194kDa	POLR1A	polymerase (RNA) I polypeptide A, 194kDa	Nucleus	enzyme	5	3	6	4	1	5	-0.53	0.09067
IPI00011593	Fos-related antigen 2	FOSL2	FOS-like antigen 2	Nucleus	transcription regulator	3	3	4	7	3	4	0.53	0.09086

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00027157	CENP-F kinetochore protein	CENPF	centromere protein F, 350/400kDa (mitos	Nucleus	other	2	4	4	3	4	7	0.53	0.09086
IPI00215948	Isoform 1 of Alpha-1 catenin	CTNNA1	catenin (cadherin-associated protein), alp1	Plasma Membrane	other	27	27	30	29	24	25	-0.52	0.09143
IPI00013214	DNA replication licensing factor MCM3	MCM3	minichromosome maintenance complex c	Nucleus	enzyme	31	29	25	29	20	30	-0.52	0.09159
IPI00013891	Isoform Long of Transformer-2 protein homolog	TRA2A	transformer 2 alpha homolog (Drosophila)	Nucleus	other	9	8	15	14	13	10	0.52	0.09216
IPI00027378	UBA/UBX 33.3 kDa protein	UBXN1	UBX domain protein 1	Cytoplasm	other	4	3	4	4	5	6	0.52	0.09272
IPI00217975	Lamin-B1	LMNB1	lamin B1	Nucleus	other	3	4	4	6	5	4	0.52	0.09272
IPI00304409	Calcium-regulated heat stable protein 1	CARHSP1	calcium regulated heat stable protein 1, 2	Cytoplasm	other	4	6	5	4	4	3	-0.52	0.09323
IPI00219726	Isoform 2AC of Catenin delta-1	CTNND1	catenin (cadherin-associated protein), del1	Nucleus	other	13	12	10	15	14	11	0.51	0.09452
IPI00004344	Isoform 1 of AF4/FMR2 family member 4	AFF4	AF4/FMR2 family, member 4	Nucleus	transcription regulator	3	4	5	4	6	6	0.51	0.09479
IPI00045856	CDNA FLJ14717 fis, clone NT2RP3001239, moderately similar to					3	4	5	3	5	8	0.51	0.09479
IPI00219798	Isoform 1 of Roundabout homolog 1 precursor	ROBO1	roundabout, axon guidance receptor, hon	Plasma Membrane	transmembrane receptor	5	6	5	3	5	4	-0.51	0.09575
IPI00464952	Splicing factor arginine/serine-rich 11	SRSF11	serine/arginine-rich splicing factor 11	Nucleus	other	13	15	9	13	17	12	0.51	0.09709
IPI00015952	Eukaryotic translation initiation factor 4 gamma 2	EIF4G2	eukaryotic translation initiation factor 4 g	Cytoplasm	translation regulator	13	13	12	15	16	12	0.50	0.09732
IPI00054042	Isoform 1 of General transcription factor II-I	GTF2I	general transcription factor Iii	Nucleus	transcription regulator	4	5	4	3	8	6	0.50	0.09753
IPI00383396	Isoform 1 of Autophagy-related protein 9A	ATG9A	ATG9 autophagy related 9 homolog A (S.	Cytoplasm	other	4	6	4	7	6	5	0.49	0.09891
IPI00289344	Isoform 1 of Nuclear receptor corepressor 1	NCOR1	nuclear receptor corepressor 1	Nucleus	transcription regulator	15	13	14	16	16	15	0.49	0.10016
IPI00002806	Isoform TAFII20 of Transcription initiation factor TFIID subunit 12	TAF12	(includ TAF12 RNA polymerase II, TATA box bind	Nucleus	transcription regulator	0	0	0	3	2	0	0.49	0.10030
IPI00005011	Isoform 1 of CCR4-NOT transcription complex subunit 2	CNOT2	CCR4-NOT transcription complex, subunit	Nucleus	transcription regulator	0	0	0	3	2	0	0.49	0.10030
IPI00012318	PREDICTED: mitogen-activated protein kinase kinase kinase 1					0	0	0	0	2	3	0.49	0.10030
IPI00013444	Zinc finger protein 40	HIVEP1	human immunodeficiency virus type I en1	Nucleus	transcription regulator	0	0	1	2	2	2	0.49	0.10030
IPI00014893	Isoform 2 of Nuclear distribution protein nudE homolog 1	NDE1	(includ nudE nuclear distribution gene E homolo	Nucleus	other	0	0	0	3	1	2	0.49	0.10030
IPI00018321	Isoform 1 of Histone-lysine N-methyltransferase, H3 lysine-9 spe	SETDB1	SET domain, bifurcated 1	Nucleus	enzyme	0	0	0	2	3	0	0.49	0.10030
IPI00027152	Centromere protein A	CENPA	centromere protein A	Nucleus	other	0	0	0	2	2	2	0.49	0.10030
IPI00027248	Tumor suppressor candidate 2	TUSC2	tumor suppressor candidate 2	Nucleus	other	0	0	0	0	3	2	0.49	0.10030
IPI00064666	Protein FAM84B	FAM84B	family with sequence similarity 84, memb	Plasma Membrane	other	0	0	0	4	0	0	0.49	0.10030
IPI00152093	Isoform 3 of Periphilin-1	PPHLN1	Periphilin 1	Nucleus	other	0	0	0	4	0	0	0.49	0.10030
IPI00154590	MKI67 FHA domain-interacting nucleolar phosphoprotein	MKI67IP	MKI67 (FHA domain) interacting nucleola	Nucleus	other	0	0	0	2	3	0	0.49	0.10030
IPI00170865	Membrane-associated guanylate kinase-related 3	MAGI3	membrane associated guanylate kinase, V	Cytoplasm	kinase	0	0	0	4	0	0	0.49	0.10030
IPI00173946	TPR domain, ankyrin-repeat and coiled-coil-containing	TANC1	tetratricopeptide repeat, ankyrin repeat a	Plasma Membrane	other	0	0	0	0	3	2	0.49	0.10030
IPI00183699	Isoform 2 of HMG box transcription factor BBX	BBX	bobby sox homolog (Drosophila)	Nucleus	other	0	0	0	4	0	0	0.49	0.10030
IPI00295425	BC282485_1	CCDC61	coiled-coil domain containing 61	Cytoplasm	other	0	0	0	0	3	2	0.49	0.10030
IPI00296992	AXL receptor tyrosine kinase isoform 1	AXL	AXL receptor tyrosine kinase	Plasma Membrane	kinase	0	0	0	2	3	0	0.49	0.10030
IPI00297655	Neurogenic locus notch homolog protein 2 precursor	NOTCH2	notch 2	Plasma Membrane	transcription regulator	0	0	0	0	2	3	0.49	0.10030
IPI00297982	Eukaryotic translation initiation factor 2 subunit 3	EIF2S3	eukaryotic translation initiation factor 2, s	Cytoplasm	translation regulator	0	0	0	3	1	2	0.49	0.10030
IPI00375220	Isoform 1 of Nance-Horan syndrome protein	NHS	Nance-Horan syndrome (congenital catar.	Nucleus	other	0	0	0	2	2	2	0.49	0.10030
IPI00384765	Membrane-associated tyrosine- and threonine-specific cdc2-inhib	PKMYT1	protein kinase, membrane associated tyrc	Cytoplasm	kinase	0	0	0	2	2	2	0.49	0.10030
IPI00385001	Hypothetical protein DKFZp686L1653 (Fragment)	NUP188	(includ nucleoporin 188kDa	Nucleus	other	0	0	0	4	0	0	0.49	0.10030
IPI00387144	Tubulin alpha-ubiquitous chain	TUBA1C	tubulin, alpha 1c	Cytoplasm	other	1	1	1	2	2	2	0.49	0.10030
IPI00400873	Chromosome 10 open reading frame 18					0	0	0	4	0	0	0.49	0.10030
IPI00431025	abl-interactor 1 isoform a	ABI1	abl-interactor 1	Cytoplasm	other	0	0	0	4	0	0	0.49	0.10030
IPI00444793	Centrosome and spindle pole associated protein 1	CSPP1	centrosome and spindle pole associated	Cytoplasm	other	0	0	0	4	0	0	0.49	0.10030
IPI00455806	paternally expressed 10 isoform RF1	PEG10	paternally expressed 10	Nucleus	other	0	0	0	2	0	3	0.49	0.10030
IPI00465087	Ubiquitin carboxyl-terminal hydrolase BAP1	BAP1	BRCA1 associated protein-1 (ubiquitin car	Nucleus	peptidase	0	0	0	3	0	2	0.49	0.10030
IPI00555838	Isoform 1 of Serine/threonine-protein kinase MARK2	MARK2	MAP/microtubule affinity-regulating kinas	Cytoplasm	kinase	1	0	1	4	0	0	0.49	0.10030
IPI00746320	3-phosphoinositide dependent protein kinase-1 variant (Fragmen	PDPK1	3-phosphoinositide dependent protein kii	Cytoplasm	kinase	0	0	0	0	4	0	0.49	0.10030
IPI00017227	Ubiquitin domain containing 1 variant	UBTD1	ubiquitin domain containing 1	unknown	other	2	3	0	0	0	0	-0.49	0.10582
IPI00021320	Bin3, bicoid-interacting 3	MEPCE	methylphosphate capping enzyme	unknown	enzyme	4	0	0	0	0	0	-0.49	0.10582
IPI00156793	DNA-repair protein complementing XP-C cells	XPC	xeroderma pigmentosum, complementati	Nucleus	other	0	3	2	1	0	0	-0.49	0.10582
IPI00215805	Exocyst complex component 2	EXOC2	exocyst complex component 2	Cytoplasm	transporter	0	4	0	0	0	0	-0.49	0.10582
IPI00216308	Voltage-dependent anion-selective channel protein 1	VDAC1	voltage-dependent anion channel 1	Cytoplasm	ion channel	2	2	2	1	1	1	-0.49	0.10582
IPI00217686	Putative rRNA methyltransferase 3	FTSJ3	FtsJ homolog 3 (E. coli)	Nucleus	enzyme	1	1	4	1	0	0	-0.49	0.10582
IPI00218823	Isoform 1 of Myeloid/lymphoid or mixed-lineage leukemia prote	MLL4	myeloid/lymphoid or mixed-lineage leuk	Nucleus	transcription regulator	0	2	3	0	0	0	-0.49	0.10582
IPI00246827	Isoform 1 of Protein C17orf28	C17orf28	chromosome 17 open reading frame 28	Plasma Membrane	other	0	4	0	0	0	0	-0.49	0.10582
IPI00249080	Isoform 2 of N-acetylserotonin O-methyltransferase-like protein	ASMTL	acetylserotonin O-methyltransferase-like	Cytoplasm	enzyme	2	2	2	0	0	0	-0.49	0.10582

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00291376	Putative RNA methyltransferase NCOA6IP	TGS1	trimethylguanosine synthase 1	Nucleus	enzyme	0	0	4	0	0	0	-0.49	0.10582
IPI00299526	Polycomb protein SUZ12	SUZ12	suppressor of zeste 12 homolog (Drosophila)	Nucleus	enzyme	3	0	2	0	0	1	-0.49	0.10582
IPI00337641	Isoform 1 of Tetratricopeptide repeat protein 7B	TTC7B	tetratricopeptide repeat domain 7B	unknown	other	3	2	0	1	0	0	-0.49	0.10582
IPI00420025	SVH-B	ARMC10	armadillo repeat containing 10	Cytoplasm	other	2	2	2	0	0	0	-0.49	0.10582
IPI00431262	Isoform 1 of Protein KIAA0195	KIAA0195	KIAA0195	unknown	other	3	0	2	0	0	0	-0.49	0.10582
IPI00006211	VAMP-associated protein B/C	VAPB	VAMP (vesicle-associated membrane protein)	Plasma Membrane	other	6	5	4	7	6	6	0.49	0.10655
IPI00008283	Zinc finger protein 106 homolog	ZFP106	zinc finger protein 106 homolog (mouse)	Cytoplasm	other	6	6	6	6	6	7	0.49	0.10655
IPI00008531	REST corepressor 1	RCOR1	REST corepressor 1	Nucleus	transcription regulator	5	3	7	6	7	6	0.49	0.10655
IPI00220901	TBC1 domain family, member 4	TBC1D4	TBC1 domain family, member 4	Cytoplasm	other	7	7	0	7	6	6	0.49	0.10655
IPI00301844	Zinc finger and homeobox protein 3	ZHX3	zinc fingers and homeoboxes 3	Nucleus	transcription regulator	6	8	0	6	7	6	0.49	0.10655
IPI00217541	ATP-dependent RNA helicase DDX51	DDX51	DEAD (Asp-Glu-Ala-Asp) box polypeptide	unknown	enzyme	4	6	9	7	4	4	-0.49	0.10707
IPI00373869	Homeodomain-like containing protein	C17orf49	chromosome 17 open reading frame 49	Nucleus	other	6	7	6	4	5	6	-0.49	0.10707
IPI00301503	Isoform 1 of Arginine/serine-rich splicing factor 10	TRA2B	transformer 2 beta homolog (Drosophila)	Nucleus	other	19	12	14	13	20	17	0.49	0.10769
IPI00083708	HBxAg transactivated protein 2	PRRC2C	proline-rich coiled-coil 2C	Cytoplasm	other	4	8	4	8	8	4	0.48	0.10812
IPI00166487	Isoform 3 of Protein KIAA0310	SEC16A	SEC16 homolog A (S. cerevisiae)	Cytoplasm	phosphatase	5	5	6	6	7	7	0.48	0.10812
IPI00305020	SH2 domain-containing protein 3A	SH2D3A	SH2 domain containing 3A	Cytoplasm	other	6	5	5	10	5	5	0.48	0.10812
IPI00456631	Isoform 1 of Lysine-specific histone demethylase 1	KDM1A	lysine (K)-specific demethylase 1A	Nucleus	enzyme	5	4	7	6	6	8	0.48	0.10812
IPI00166512	stromal interaction molecule 1 precursor	STIM1	stromal interaction molecule 1	Plasma Membrane	other	20	16	18	16	16	17	-0.48	0.10904
IPI00549521	Isoform 1 of Choline transporter-like protein 2	SLC44A2	solute carrier family 44, member 2	Extracellular Space	transporter	7	6	5	6	8	8	0.47	0.11078
IPI00006865	Vesicle trafficking protein SEC22b	SEC22B	SEC22 vesicle trafficking protein homolog	Cytoplasm	other	1	2	1	2	3	2	0.47	0.11186
IPI00010833	Zinc finger protein 148	ZNF148	zinc finger protein 148	Nucleus	transcription regulator	0	2	0	0	3	2	0.47	0.11186
IPI00013272	Isoform 1 of Golgin subfamily A member 4	GOLGA4	golgin A4	Cytoplasm	other	2	1	1	1	3	3	0.47	0.11186
IPI00164434	Isoform 1 of Receptor expression-enhancing protein 3	REEP3	receptor accessory protein 3	unknown	other	2	0	0	5	0	0	0.47	0.11186
IPI00335437	CDNA FLJ13144 fis, clone NT2RP3003278	ANKZF1	ankyrin repeat and zinc finger domain	Nucleus	transcription regulator	2	0	0	0	3	3	0.47	0.11186
IPI00374054	Isoform 2 of Protein enabled homolog	ENAH	enabled homolog (Drosophila)	Plasma Membrane	other	2	1	0	2	3	2	0.47	0.11186
IPI00029730	Syntaxin-4	STX4	syntaxin 4	Plasma Membrane	transporter	3	3	0	1	2	0	-0.47	0.11288
IPI00170934	LKB1 interacting protein	STK11IP	serine/threonine kinase 11 interacting protein	Cytoplasm	other	2	1	4	0	1	2	-0.47	0.11288
IPI00179326	Insulin receptor tyrosine kinase substrate	BAIAP2L1	BAI1-associated protein 2-like 1	Cytoplasm	other	2	4	0	0	2	1	-0.47	0.11288
IPI00290272	DNA polymerase alpha subunit B	POLA2	polymerase (DNA directed), alpha 2 (70kD)	Nucleus	enzyme	3	3	1	2	0	0	-0.47	0.11288
IPI00294728	Protein Dmx-like 1	DMXL1	Dmx-like 1	unknown	other	2	2	3	2	0	1	-0.47	0.11288
IPI00298738	DNA-directed RNA polymerase, mitochondrial precursor	POLRMT	polymerase (RNA) mitochondrial (DNA directed)	Cytoplasm	enzyme	3	0	3	0	0	2	-0.47	0.11288
IPI00007675	Cytoplasmic dynein 1 light intermediate chain 1	DYNC1L1	dynein, cytoplasmic 1, light intermediate chain	Cytoplasm	other	6	7	6	6	8	9	0.46	0.11359
IPI00024167	ABT1-associated protein	ESF1	ESF1, nucleolar pre-rRNA processing protein	Nucleus	other	5	6	8	5	8	10	0.46	0.11359
IPI00384541	Novel protein	RPRD2	regulation of nuclear pre-mRNA domain	unknown	other	6	10	7	6	8	5	-0.46	0.11369
IPI00456744	Isoform 1 of SH3 domain-binding protein 1	SH3BP1	SH3-domain binding protein 1	unknown	other	8	4	11	4	8	7	-0.46	0.11369
IPI00010700	Isoform 1 of Large proline-rich protein BAT2	PRRC2A	proline-rich coiled-coil 2A	Cytoplasm	other	20	19	22	18	18	20	-0.46	0.11370
IPI00009326	65 kDa Yes-associated protein	YAP1	Yes-associated protein 1	Nucleus	transcription regulator	16	22	20	20	20	23	0.46	0.11421
IPI00029822	SMARCA4 isoform 2	SMARCA4	SWI/SNF related, matrix associated, actin dependent	Nucleus	transcription regulator	6	7	11	7	3	10	-0.46	0.11486
IPI00152510	ATP-dependent RNA helicase DDX54	DDX54	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	transcription regulator	9	9	6	8	6	6	-0.46	0.11486
IPI00000634	Coiled-coil domain-containing protein 6	CCDC6	coiled-coil domain containing 6	Cytoplasm	other	7	8	6	9	8	8	0.45	0.11545
IPI00012268	26S proteasome non-ATPase regulatory subunit 2	PSMD2	proteasome (prosome, macropain) 26S subunit	Cytoplasm	other	5	7	9	8	9	8	0.45	0.11545
IPI00010951	Epiplakin	EPPK1	epiplakin 1	Cytoplasm	other	2	2	1	2	3	3	0.45	0.11635
IPI00025039	Fibrillarin	FBL	fibrillarin	Nucleus	other	2	0	2	2	3	3	0.45	0.11635
IPI00026307	Pre-mRNA-splicing factor PRP17	CDC40	cell division cycle 40 homolog (S. cerevisiae)	Nucleus	other	0	2	2	2	4	2	0.45	0.11635
IPI00026320	Ubiquitin-protein ligase EDD1	UBR5	ubiquitin protein ligase E3 component n-1	Nucleus	enzyme	1	2	2	2	4	2	0.45	0.11635
IPI00164672	mRNA decapping enzyme 1A	DCP1A	DCP1 decapping enzyme homolog A (S. cerevisiae)	Nucleus	other	3	0	5	2	0	0	0.45	0.11635
IPI00291032	spectrin domain with coiled-coils 1 NSP5b3b	SPECC1	sperm antigen with calponin homology domain	Nucleus	other	1	2	2	2	3	3	0.45	0.11635
IPI00299571	CDNA FLJ45525 fis, clone BRTHA2026311, highly similar to Protein C9orf82	PDIA6	protein disulfide isomerase family A, member 6	Cytoplasm	enzyme	0	0	3	5	0	2	0.45	0.11635
IPI00303812	Protein C9orf82	C9orf82	chromosome 9 open reading frame 82	unknown	other	3	0	0	4	0	3	0.45	0.11635
IPI00375441	far upstream element-binding protein	FUBP1	far upstream element (FUSE) binding protein	Nucleus	transcription regulator	2	2	1	3	1	4	0.45	0.11635
IPI00644079	heterogeneous nuclear ribonucleoprotein U isoform a	HNRNPU	heterogeneous nuclear ribonucleoprotein U	Nucleus	transporter	1	1	3	2	2	4	0.45	0.11635
IPI00028077	Isoform 1 of Presenilin-1	PSEN1	presenilin 1	Plasma Membrane	peptidase	6	0	0	3	0	0	-0.45	0.11777
IPI00154515	Smad nuclear-interacting protein 1	SNIP1	Smad nuclear interacting protein 1	Nucleus	other	6	7	9	7	9	10	0.45	0.11817
IPI00100453	DENN domain containing protein	DENND4C	DENN/MADD domain containing 4C	unknown	other	9	8	6	7	10	10	0.45	0.11910

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00172474	Isoform 2 of Zinc finger protein 91 homolog	ZFP91	zinc finger protein 91 homolog (mouse)	Nucleus	transcription regulator	8	8	7	9	10	8	0.45	0.11910
IPI00216348	Isoform 2C of Cytoplasmic dynein 1 intermediate chain 2	DYN112	dynein, cytoplasmic 1, intermediate chain	Cytoplasm	other	8	6	9	11	7	9	0.45	0.11910
IPI00256861	Isoform 2 of Microtubule-actin crosslinking factor 1, isoforms 1/2	MACF1	microtubule-actin crosslinking factor 1	Cytoplasm	enzyme	7	9	7	9	9	9	0.45	0.11910
IPI00333215	Isoform 1 of Transcription elongation factor A protein 1	TCEA1	transcription elongation factor A (SII), 1	Nucleus	transcription regulator	8	9	6	10	9	8	0.45	0.11910
IPI00032355	Pumilio homolog 1	PUM1	pumilio homolog 1 (Drosophila)	Cytoplasm	other	9	11	7	9	7	7	-0.45	0.11962
IPI00218486	Isoform 1 of Protein phosphatase Slingshot homolog 3	SSH3	slingshot homolog 3 (Drosophila)	Cytoplasm	phosphatase	8	8	11	7	9	7	-0.45	0.11962
IPI00382470	Heat shock protein HSP 90-alpha 2	HSP90AA1	heat shock protein 90kDa alpha (cytosolic)	Cytoplasm	enzyme	27	25	25	24	26	22	-0.44	0.12119
IPI00012199	Hypothetical protein FUJ22321	CCDC86	coiled-coil domain containing 86	Nucleus	other	26	22	22	24	27	24	0.44	0.12137
IPI00008961	Telomeric repeat-binding factor 2-interacting protein 1	TERF2IP	telomeric repeat binding factor 2, interacting	Nucleus	other	2	3	0	3	3	3	0.44	0.12217
IPI00221235	nucleoporin 160kDa	NUP160	nucleoporin 160kDa	Nucleus	transporter	0	4	0	4	0	4	0.44	0.12217
IPI00299512	Isoform 2 of Neurofibromin	NF1	neurofibromin 1	Cytoplasm	other	2	2	2	3	2	4	0.44	0.12217
IPI00296337	Isoform 1 of DNA-dependent protein kinase catalytic subunit	PRKDC	protein kinase, DNA-activated, catalytic subunit	Nucleus	kinase	4	3	2	2	1	3	-0.44	0.12824
IPI00026317	Zinc finger and BTB domain-containing protein 7A	ZBTB7A	zinc finger and BTB domain containing 7A	Nucleus	transcription regulator	11	10	10	11	7	9	-0.43	0.12985
IPI00217957	ELYS transcription factor-like protein TMBS62					11	10	10	11	7	9	-0.43	0.12985
IPI00221394	H/ACA ribonucleoprotein complex subunit 4	DKC1	dyskeratosis congenita 1, dyskerin	Nucleus	enzyme	26	28	26	31	25	29	0.43	0.13003
IPI00029601	Src substrate cortactin	CTTN	cortactin	Plasma Membrane	other	26	25	31	24	32	31	0.43	0.13035
IPI00000846	Isoform 1 of Chromodomain helicase-DNA-binding protein 4	CHD4	chromodomain helicase DNA binding protein 4	Nucleus	enzyme	2	1	4	3	4	3	0.42	0.13097
IPI00018037	Surfeit locus protein 2	SURF2	surfeit 2	unknown	other	2	4	0	4	4	2	0.42	0.13097
IPI00178203	Some homology with holliday junction DNA helicase RUVB like	CTHF18	CTF18, chromosome transmission fidelity	unknown	other	4	2	0	3	3	4	0.42	0.13097
IPI00414963	Isoform 2 of Polyadenylate-binding protein 2	PABPN1	poly(A) binding protein, nuclear 1	Nucleus	other	3	2	2	3	3	4	0.42	0.13097
IPI00009504	Leukemia virus receptor 2	SLC20A2	solute carrier family 20 (phosphate transporter)	Plasma Membrane	transporter	4	2	4	3	3	0	-0.42	0.13292
IPI00297579	Chromobox protein homolog 3	CBX3	chromobox homolog 3	Nucleus	transcription regulator	5	4	0	5	0	0	-0.42	0.13292
IPI00337386	Isoform 2 of Pre-mRNA-processing factor 40 homolog A	PRPF40A	PRP40 pre-mRNA processing factor 40 homolog A	Nucleus	other	16	9	9	11	12	7	-0.42	0.13344
IPI00145593	Nucleolar protein with MIF4G domain 1	NOM1	nucleolar protein with MIF4G domain 1	Nucleus	other	0	3	4	3	3	5	0.41	0.13537
IPI00218292	Isoform Short of Ubiquitin fusion degradation protein 1 homolog 1	UFD1L	ubiquitin fusion degradation protein 1 like (yeast)	Cytoplasm	peptidase	3	3	2	3	4	4	0.41	0.13537
IPI00291755	Isoform 1 of Nuclear pore membrane glycoprotein 210 precursor	NUP210	nucleoporin 210kDa	Nucleus	transporter	3	3	2	4	4	3	0.41	0.13537
IPI00303063	SCC-112 protein					3	3	2	5	2	4	0.41	0.13537
IPI00418185	Hypothetical protein FUJ20097	CCDC132	coiled-coil domain containing 132	unknown	other	4	0	3	5	3	3	0.41	0.13537
IPI00021129	Isoform 1 of AP-3 complex subunit beta-1	AP3B1	adaptor-related protein complex 3, beta 1	Cytoplasm	transporter	4	2	5	5	1	2	-0.41	0.13708
IPI00257508	Dihydropyrimidinase-related protein 2	DPYSL2	dihydropyrimidinase-like 2	Cytoplasm	enzyme	4	3	4	1	3	4	-0.41	0.13708
IPI00513803	Mitogen-activated protein kinase kinase 2	MAP3K2	mitogen-activated protein kinase kinase 2	Cytoplasm	kinase	4	4	3	4	0	3	-0.41	0.13708
IPI00375358	Isoform 1 of Replication factor C subunit 1	RFC1	replication factor C (activator 1) 1, 145kD	Nucleus	transcription regulator	14	10	14	12	10	12	-0.41	0.13755
IPI00016580	Isoform 1 of Protein C20orf172	DSN1	(includes DSN1, MIND) kinetochore complex component 1	Nucleus	other	3	3	3	4	5	3	0.41	0.13881
IPI00156282	G protein pathway suppressor 1 isoform 2	GPS1	G protein pathway suppressor 1	Nucleus	other	0	4	4	3	4	5	0.41	0.13881
IPI00165261	Sec1 family domain-containing protein 1	SCFD1	sec1 family domain containing 1	Cytoplasm	transporter	3	3	3	5	2	5	0.41	0.13881
IPI00215884	splicing factor, arginine/serine-rich 1	SRSF1	serine/arginine-rich splicing factor 1	Nucleus	other	2	2	5	5	3	4	0.41	0.13881
IPI00216046	SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily 1 member C	SMARCA1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin subfamily 1 member C	Nucleus	transcription regulator	3	4	2	5	3	4	0.41	0.13881
IPI00217223	Multifunctional protein ADE2	PAICS	phosphoribosylaminoimidazole carboxamide transferase	Cytoplasm	enzyme	3	3	3	3	4	5	0.41	0.13881
IPI00419100	Isoform 1 of FYVE, RhoGEF and PH domain-containing protein 6	FGD6	FYVE, RhoGEF and PH domain containing	Cytoplasm	other	3	3	3	3	5	4	0.41	0.13881
IPI00456970	Isoform 1 of Cell division cycle 2-like protein kinase 5	CDK13	cyclin-dependent kinase 13	Nucleus	kinase	2	3	4	3	3	6	0.41	0.13881
IPI00009505	Isoform 1 of Beta-2-syntrophin	SNTB2	syntrophin, beta 2 (dystrophin-associated)	Plasma Membrane	other	3	4	5	4	3	2	-0.41	0.14309
IPI00012202	Methylosome protein 50	WDR77	WD repeat domain 77	Nucleus	transcription regulator	4	3	5	2	4	3	-0.41	0.14309
IPI00004970	Small subunit processome component 20 homolog	UTP20	UTP20, small subunit (SSU) processome component 20	Nucleus	other	3	4	3	4	4	5	0.40	0.14496
IPI00064931	Isoform 2 of E1A-binding protein p400	EP400	E1A binding protein p400	Nucleus	other	3	3	4	6	3	4	0.40	0.14496
IPI00641181	MARCKS-related protein	MARCKSL1	MARCKS-like 1	Cytoplasm	other	0	5	4	6	5	2	0.40	0.14496
IPI00031556	Splicing factor U2AF 65 kDa subunit	U2AF2	U2 small nuclear RNA auxiliary factor 2	Nucleus	other	4	3	6	4	3	3	-0.40	0.14648
IPI00043978	Isoform 1 of Amyotrophic lateral sclerosis 2 chromosome region	PARD3B	par-3 partitioning defective 3 homolog B	Plasma Membrane	other	3	5	5	0	5	4	-0.40	0.14648
IPI00385729	OTTHUMP00000022614	KIAA1984	KIAA1984	unknown	other	5	4	4	0	4	5	-0.40	0.14648
IPI00014298	Periodic tryptophan protein 1 homolog	PWP1	PWP1 homolog (S. cerevisiae)	Nucleus	other	5	3	3	5	5	4	0.39	0.14749
IPI00290142	CTP synthase	CTPS	CTP synthase	Nucleus	enzyme	3	3	5	5	5	4	0.39	0.14749
IPI00411984	Serine/threonine-protein kinase 3	STK3	serine/threonine kinase 3	Cytoplasm	kinase	15	19	14	17	14	13	-0.39	0.14754
IPI00013721	Serine/threonine-protein kinase PRP4 homolog	PRPF4B	PRP4 pre-mRNA processing factor 4 homolog B	Nucleus	kinase	19	18	13	20	16	10	-0.39	0.14902
IPI00024971	Oxysterol-binding protein 1	OSBP	oxysterol binding protein	Cytoplasm	other	14	15	18	17	16	18	0.39	0.14903
IPI00179964	Isoform 1 of Polypyrimidine tract-binding protein 1	PTBP1	polypyrimidine tract binding protein 1	Nucleus	enzyme	5	5	2	5	5	5	0.38	0.14932

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00023640	Programmed cell death protein 5	PDCD5	programmed cell death 5	Nucleus	other	5	6	4	6	4	2	-0.38	0.15199
IPI00306723	CCAAT/enhancer-binding protein zeta	CEBPZ	CCAAT/enhancer binding protein (C/EBP)	Nucleus	other	4	4	7	3	4	5	-0.38	0.15199
IPI00472901	chromodomain helicase DNA binding protein 7	CHD7	chromodomain helicase DNA binding prc	Nucleus	enzyme	4	7	4	3	6	3	-0.38	0.15199
IPI00216230	Lamina-associated polypeptide 2 isoform alpha	TMPO	thymopoietin	Nucleus	other	17	14	18	21	18	14	0.38	0.15200
IPI00294834	Aspartyl/asparaginyl beta-hydroxylase	ASPH	aspartate beta-hydroxylase	Cytoplasm	enzyme	5	4	4	5	4	7	0.38	0.15279
IPI00165995	Isoform 1 of Splicing factor, arginine/serine-rich 130	PNISR	PNN-interacting serine/arginine-rich prot	Nucleus	other	5	6	5	5	4	4	-0.38	0.15399
IPI00028888	Isoform 1 of Heterogeneous nuclear ribonucleoprotein D0	HNRNPD	heterogeneous nuclear ribonucleoprotein	Nucleus	transcription regulator	17	17	19	18	21	18	0.38	0.15419
IPI00025100	2-oxoisovalerate dehydrogenase alpha subunit, mitochondrial prc	BCKDHA	branched chain keto acid dehydrogenase	Cytoplasm	enzyme	6	5	3	5	7	5	0.37	0.15477
IPI00022460	Zinc finger protein 592	ZNF592	zinc finger protein 592	Nucleus	other	5	5	7	3	6	5	-0.37	0.15574
IPI00328715	Protein LYRIC	MTDH	metadherin	Cytoplasm	transcription regulator	7	4	6	7	1	6	-0.37	0.15574
IPI00029081	ligase III, DNA, ATP-dependent isoform alpha precursor	LIG3	ligase III, DNA, ATP-dependent	Nucleus	enzyme	5	5	5	6	5	7	0.37	0.15644
IPI00152692	Probable D-tyrosyl-tRNA(Tyr) deacylase	DTD1	D-tyrosyl-tRNA deacylase 1 homolog (S. cerevisiae)	Cytoplasm	enzyme	5	5	5	7	6	5	0.37	0.15644
IPI00006093	Protein FAM38A					6	4	9	6	4	6	-0.36	0.15996
IPI00011069	Isoform 2 of Uracil-DNA glycosylase	UNG	uracil-DNA glycosylase	Nucleus	enzyme	6	5	6	7	6	7	0.36	0.16038
IPI00412676	CDNA FLJ43339 fis, clone NT2RI3007291	C15orf52	chromosome 15 open reading frame 52	unknown	other	7	6	4	8	6	6	0.36	0.16038
IPI00554715	fragile X mental retardation-related protein 1 isoform b	FXR1	fragile X mental retardation, autosomal h	Cytoplasm	other	8	8	4	7	4	6	-0.36	0.16119
IPI00001661	RCC1 protein	RCC1	regulator of chromosome condensation 1	Cytoplasm	other	8	6	7	5	4	9	-0.35	0.16335
IPI00021417	U4/U6.U5 tri-snRNP-associated protein 1	SART1	squamous cell carcinoma antigen recogni	Nucleus	other	7	4	8	9	6	7	0.35	0.16370
IPI00179473	Isoform 1 of Sequestosome-1	SQSTM1	sequestosome 1	Cytoplasm	transcription regulator	6	5	8	7	9	6	0.35	0.16370
IPI00023109	Chromodomain-helicase-DNA-binding protein 2	CHD2	chromodomain helicase DNA binding prc	Nucleus	enzyme	8	6	8	7	5	7	-0.35	0.16441
IPI00411614	WD repeat and HMG-box DNA-binding protein 1	WDHD1	WD repeat and HMG-box DNA binding p	Nucleus	other	7	7	8	8	5	6	-0.35	0.16441
IPI00419791	hypothetical protein LOC65117 isoform a	RSRC2	arginine/serine-rich coiled-coil 2	unknown	other	9	10	3	7	6	6	-0.35	0.16441
IPI00007277	LRR FLI-I interacting protein 2	LRRFIP2	leucine rich repeat (in FLII) interacting prc	unknown	other	6	6	8	8	7	8	0.35	0.16477
IPI00025330	Isoform 2 of Cyclin-L1					10	4	6	7	10	6	0.35	0.16477
IPI00398779	plectin 1 isoform 11	PLEC	plectin	Cytoplasm	other	7	5	8	8	8	7	0.35	0.16477
IPI00643014	retinoblastoma-associated factor 600	UBR4	ubiquitin protein ligase E3 component n-	Nucleus	other	6	8	6	7	7	9	0.35	0.16477
IPI00215965	heterogeneous nuclear ribonucleoprotein A1 isoform b	HNRNPA1	heterogeneous nuclear ribonucleoprotein	Nucleus	other	6	5	10	7	7	10	0.34	0.16552
IPI00554711	Junction plakoglobin	JUP	junction plakoglobin	Plasma Membrane	other	7	6	8	8	8	8	0.34	0.16552
IPI00185027	Isoform 1 of Arginine-glutamic acid dipeptide repeats protein	RERE	arginine-glutamic acid dipeptide (RE) rep	Nucleus	other	9	7	8	7	6	8	-0.34	0.16684
IPI00305152	SEC31L1 protein	SEC31A	SEC31 homolog A (S. cerevisiae)	Cytoplasm	other	7	8	7	10	9	6	0.34	0.16687
IPI00016910	Eukaryotic translation initiation factor 3 subunit 8					8	8	9	7	8	7	-0.34	0.16740
IPI00019205	Protein C14orf4	IRF2BP1	interferon regulatory factor 2 binding prc	Nucleus	other	7	9	9	6	7	9	-0.34	0.16740
IPI00021954	Golgi-specific brefeldin A-resistance guanine nucleotide exchange	GBF1	golgi brefeldin A resistant guanine nucleoc	Cytoplasm	other	8	7	10	7	6	9	-0.34	0.16740
IPI00162549	SP110 nuclear body protein isoform c	SP110	SP110 nuclear body protein	Nucleus	other	9	9	7	9	7	6	-0.34	0.16740
IPI00021766	Isoform 1 of Reticulon-4	RTN4	reticulon 4	Cytoplasm	other	6	9	8	8	9	9	0.34	0.16757
IPI00395568	Isoform 1 of PHD finger protein 6	PHF6	PHD finger protein 6	Nucleus	other	8	8	10	8	8	7	-0.34	0.16820
IPI00000030	Isoform Delta-1 of Serine/threonine-protein phosphatase 2A 56 kDa	PPP2R5D	protein phosphatase 2, regulatory subuni	Nucleus	phosphatase	0	0	1	0	3	1	0.33	0.16831
IPI00003479	Mitogen-activated protein kinase 1	MAPK1	mitogen-activated protein kinase 1	Cytoplasm	kinase	1	1	1	1	2	2	0.33	0.16831
IPI00003627	Isoform 1 of Actin-like protein 6A	ACTL6A	actin-like 6A	Nucleus	other	1	0	1	3	0	1	0.33	0.16831
IPI00004068	Mediator of RNA polymerase II transcription subunit 12	MED12	mediator complex subunit 12	Nucleus	transcription regulator	0	0	0	0	2	2	0.33	0.16831
IPI00006715	Double-strand-break repair protein rad21 homolog	RAD21	RAD21 homolog (S. pombe)	Nucleus	other	1	1	1	3	1	1	0.33	0.16831
IPI00008223	UV excision repair protein RAD23 homolog B	RAD23B	RAD23 homolog B (S. cerevisiae)	Nucleus	other	0	0	0	0	3	0	0.33	0.16831
IPI00012429	Isoform 2 of Protein C9orf5	C9orf5	chromosome 9 open reading frame 5	unknown	other	0	0	0	0	2	2	0.33	0.16831
IPI0013452	glutamyl-prolyl tRNA synthetase	EPRS	glutamyl-prolyl-tRNA synthetase	Cytoplasm	enzyme	1	1	1	0	2	2	0.33	0.16831
IPI00015806	Isoform 1 of General transcription factor 3C polypeptide 3	GTF3C3	general transcription factor 3C, polypepti	Nucleus	transcription regulator	0	0	0	0	3	0	0.33	0.16831
IPI00020468	Selenoprotein S	SELS	selenoprotein S	Cytoplasm	other	0	0	0	0	0	3	0.33	0.16831
IPI00021595	Glucocorticoid induced transcript 1	GLCC1	glucocorticoid induced transcript 1	Cytoplasm	other	0	0	0	2	0	2	0.33	0.16831
IPI00022661	Isoform Delta of Poliovirus receptor-related protein 2 precursor	PVRL2	poliovirus receptor-related 2 (herpesvirus	Plasma Membrane	other	0	0	0	1	2	2	0.33	0.16831
IPI00023649	MOP-3	SBNO1	strawberry notch homolog 1 (Drosophila)	unknown	enzyme	0	0	0	2	2	0	0.33	0.16831
IPI00025849	Acidic leucine-rich nuclear phosphoprotein 32 family member A					1	1	1	1	2	2	0.33	0.16831
IPI00026256	Filaggrin	FLG	filaggrin	Cytoplasm	other	0	0	0	0	0	3	0.33	0.16831
IPI00027834	heterogeneous nuclear ribonucleoprotein L isoform a	HNRNPL	heterogeneous nuclear ribonucleoprotein	Nucleus	other	1	1	0	1	0	3	0.33	0.16831
IPI00028059	Isoform 1 of Protein numb homolog	NUMB	numb homolog (Drosophila)	Plasma Membrane	other	0	0	0	0	3	0	0.33	0.16831
IPI00028357	Exportin-4	XPO4	exportin 4	Nucleus	transporter	0	0	0	0	3	0	0.33	0.16831

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00033600	Isoform 1 of Protein phosphatase 1 regulatory subunit 7	PPP1R7	protein phosphatase 1, regulatory subunit 7	Nucleus	phosphatase	0	1	1	3	1	1	0.33	0.16831
IPI00152853	Isoform 1 of Protein KIAA1949	PPP1R18	protein phosphatase 1, regulatory subunit 18	unknown	other	0	0	0	0	2	2	0.33	0.16831
IPI00166612	cardiomyopathy associated 5	CMYA5	cardiomyopathy associated 5	Plasma Membrane	other	0	0	0	3	0	0	0.33	0.16831
IPI00166933	Protein C10orf12	C10orf12	chromosome 10 open reading frame 12	unknown	other	0	1	0	0	0	3	0.33	0.16831
IPI00173461	Junctophilin-1	JPH1	junctophilin 1	Plasma Membrane	other	0	0	0	3	0	0	0.33	0.16831
IPI00176702	Protein KIAA1543	CAMSAP3	calmodulin regulated spectrin-associated protein 3	Cytoplasm	other	0	0	0	0	3	0	0.33	0.16831
IPI00177642	Coiled-coil domain-containing protein 9	CCDC9	coiled-coil domain containing 9	unknown	other	0	0	0	3	0	0	0.33	0.16831
IPI00181556	CDNA FLJ90551 fis, clone OVARC1000779, weakly similar to ZINC1	ZNF777	zinc finger protein 777	unknown	other	0	0	0	0	0	3	0.33	0.16831
IPI00215928	Centrin-2	CETN2	centrin, EF-hand protein, 2	Nucleus	enzyme	0	1	0	1	2	2	0.33	0.16831
IPI00217340	KIBRA protein	WWC1	WW and C2 domain containing 1	Cytoplasm	transcription regulator	0	0	0	0	3	0	0.33	0.16831
IPI00217661	Isoform 2 of Protein raver-1	RAVER1	ribonucleoprotein, PTB-binding 1	Nucleus	other	0	0	0	0	3	0	0.33	0.16831
IPI00234446	activating transcription factor 2	ATF2	activating transcription factor 2	Nucleus	transcription regulator	0	0	0	0	0	3	0.33	0.16831
IPI00297877	CDNA FLJ40166 fis, clone TESTI2016197	KIAA0556	KIAA0556	Extracellular Space	other	0	0	0	2	2	0	0.33	0.16831
IPI00299116	Podocalyxin-like protein 1 precursor	PODXL	podocalyxin-like	Plasma Membrane	kinase	0	0	0	2	2	0	0.33	0.16831
IPI00305545	debranching enzyme homolog 1	DBR1	(includes) debranching enzyme homolog 1 (S. cerevisiae)	Nucleus	enzyme	0	1	0	0	3	1	0.33	0.16831
IPI00306369	NOL1/NOP2/Sun domain family 2 protein	NSUN2	NOP2/Sun domain family, member 2	Nucleus	enzyme	0	1	1	2	1	2	0.33	0.16831
IPI00328835	Isoform 1 of Serine/threonine-protein kinase 32C	STK32C	serine/threonine kinase 32C	unknown	kinase	0	0	0	0	0	3	0.33	0.16831
IPI00329488	Isoform IB of Tyrosine-protein kinase ABL2	ABL2	v-abl Abelson murine leukemia viral oncogene protein 2	Cytoplasm	kinase	0	0	0	0	0	3	0.33	0.16831
IPI00334713	Isoform 3 of Heterogeneous nuclear ribonucleoprotein A/B	HNRNPAB	heterogeneous nuclear ribonucleoprotein A/B	Nucleus	enzyme	0	0	0	3	0	0	0.33	0.16831
IPI00395663	Ankyrin repeat and SAM domain-containing protein 1A	ANKS1A	ankyrin repeat and sterile alpha motif domain containing 1A	Cytoplasm	other	0	0	0	0	0	3	0.33	0.16831
IPI00396561	Leucine-rich repeats and calponin homology (CH) domain containing protein 3	LRCH3	leucine-rich repeats and calponin homology domain containing 3	unknown	other	0	0	0	0	3	0	0.33	0.16831
IPI00398170	CDNA FLJ43547 fis, clone PROST2016462	ARHGAP27	Rho GTPase activating protein 27	Cytoplasm	other	0	0	0	0	0	3	0.33	0.16831
IPI00410127	Transforming, acidic coiled-coil containing protein 2	TACC2	transforming, acidic coiled-coil containing 2	Nucleus	other	0	0	0	3	0	0	0.33	0.16831
IPI00411715	Isoform 2 of Nuclear factor NF-kappa-B p100 subunit	NFKB2	nuclear factor of kappa light polypeptide chain 2	Nucleus	transcription regulator	0	0	1	0	0	3	0.33	0.16831
IPI00418991	CDNA FLJ44035 fis, clone TESTI4028612	QSER1	glutamine and serine rich 1	unknown	other	0	0	0	2	0	2	0.33	0.16831
IPI00429547	Isoform 4 of Aftiphilin	AFTPH	aftiphilin	Cytoplasm	other	0	0	0	0	0	3	0.33	0.16831
IPI00465074	Isoform 3 of Kinesin light chain 3	KLC3	kinesin light chain 3	Cytoplasm	enzyme	0	0	0	2	2	0	0.33	0.16831
IPI00479143	Pericentriolar protein 1	PCNT	pericentriolar protein 1	Cytoplasm	other	0	0	0	0	2	2	0.33	0.16831
IPI00654583	PREDICTED: hypothetical protein XP_944986	FAM83G	family with sequence similarity 83, member 3	unknown	other	0	0	0	0	3	0	0.33	0.16831
IPI00656088	Isoform 1 of Ras-associated and pleckstrin homology domains-containing protein 1	RAPH1	Ras association (RalGDS/AF-6) and pleckstrin homology domain containing 1	Plasma Membrane	other	0	0	0	1	0	3	0.33	0.16831
IPI00737659	PREDICTED: hypothetical protein LOC440193 isoform 1	CCDC88C	coiled-coil domain containing 88C	unknown	other	1	1	1	0	2	2	0.33	0.16831
IPI00738216	PREDICTED: hypothetical protein LOC23379	KIAA0947	KIAA0947	unknown	other	1	0	0	3	0	0	0.33	0.16831
IPI00002803	Serine/threonine-protein kinase N1	PKN1	protein kinase N1	Cytoplasm	kinase	0	3	0	0	0	0	-0.33	0.19043
IPI00005715	Isoform 1 of Ubiquitin conjugation factor E4 B	UBE4B	ubiquitination factor E4B	Cytoplasm	enzyme	0	2	2	0	0	0	-0.33	0.19043
IPI00022058	Isoform 1 of Development and differentiation-enhancing factor 2	ASAP2	ArfGAP with SH3 domain, ankyrin repeat domain containing 2	Nucleus	enzyme	0	0	3	0	0	0	-0.33	0.19043
IPI00024234	Phosphatidate cytidylyltransferase 1	CDS1	CDP-diacylglycerol synthase (phosphatidate cytidylyltransferase)	Cytoplasm	enzyme	2	1	2	0	1	0	-0.33	0.19043
IPI00029697	exosome component 9 isoform 1	EXOSC9	exosome component 9	Nucleus	enzyme	3	0	0	0	1	0	-0.33	0.19043
IPI00029702	Isoform 1 of Protein tyrosine kinase 2 beta	PTK2B	(includes) PTK2B protein tyrosine kinase 2 beta	Cytoplasm	kinase	3	0	0	0	0	0	-0.33	0.19043
IPI00064162	Deubiquitinating protein VCIPI35	VCIPI1	valosin containing protein (p97)/p47 component 1	Cytoplasm	peptidase	0	1	3	0	0	1	-0.33	0.19043
IPI00107357	CLPTM1 protein	CLPTM1	cleft lip and palate associated transmembrane protein 1	Plasma Membrane	other	0	0	3	1	0	0	-0.33	0.19043
IPI00154388	oxysterol-binding protein-like protein 5 isoform b	OSBPL5	oxysterol binding protein-like 5	Cytoplasm	other	0	0	3	0	0	0	-0.33	0.19043
IPI00157442	Rho guanine nucleotide exchange factor 11	ARHGEF11	Rho guanine nucleotide exchange factor 11	Cytoplasm	other	1	3	1	0	0	0	-0.33	0.19043
IPI00170744	ETS-related transcription factor Elf-4	ELF4	E74-like factor 4 (ets domain transcription factor)	Nucleus	transcription regulator	0	3	0	0	0	0	-0.33	0.19043
IPI00179109	Isoform 1 of NAD-dependent deacetylase sirtuin-2	SIRT2	sirtuin 2	Nucleus	transcription regulator	0	3	0	0	0	0	-0.33	0.19043
IPI00183535	Isoform 1 of REST corepressor 3	RCOR3	REST corepressor 3	Nucleus	other	0	3	0	0	0	0	-0.33	0.19043
IPI00216633	Isoform Short of Dematin	DCMT1	dematin	unknown	other	0	3	0	0	0	0	-0.33	0.19043
IPI00217490	Factor for adipocyte differentiation 104 variant (Fragment)	FNDC3B	fibronectin type III domain containing 3B	Cytoplasm	other	2	2	0	0	0	0	-0.33	0.19043
IPI00217842	PREDICTED: hypothetical protein LOC114825	LOC114825	LOC114825	unknown	other	0	3	0	0	0	0	-0.33	0.19043
IPI00240675	programmed cell death 4 isoform 2	PDCD4	programmed cell death 4 (neoplastic transcription factor)	Nucleus	other	2	2	0	0	0	0	-0.33	0.19043
IPI00288941	Nuclear receptor coactivator 5	NCOA5	nuclear receptor coactivator 5	Nucleus	other	0	3	0	0	0	0	-0.33	0.19043
IPI00289876	syntaxin 7	STX7	syntaxin 7	Plasma Membrane	transporter	2	2	0	1	1	1	-0.33	0.19043
IPI00292376	GEM-interacting protein	GMIP	GEM interacting protein	Cytoplasm	enzyme	0	3	0	0	0	0	-0.33	0.19043
IPI00295774	Solute carrier family 23 member 2	SLC23A2	solute carrier family 23 (nucleobase transporter)	Plasma Membrane	transporter	0	0	3	0	0	0	-0.33	0.19043
IPI00307592	ATP-binding cassette, sub-family A, member 2 isoform a	ABCA2	ATP-binding cassette, sub-family A (ABC1) member 2	Plasma Membrane	transporter	0	0	3	0	0	0	-0.33	0.19043

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value	
IPI00329291	Isoform 2 of StAR-related lipid transfer protein 13	STARD13	StAR-related lipid transfer (START) domain	Cytoplasm	other	3	0	0	0	0	0	0	-0.33	0.19043
IPI00329635	Isoform 1 of Folliculin	FLCN	folliculin	Cytoplasm	other	3	0	0	0	0	0	0	-0.33	0.19043
IPI00333067	HECT and RCC1 containing protein 4 isoform 1	HERC4	hect domain and RLD 4	unknown	enzyme	0	3	0	0	0	0	0	-0.33	0.19043
IPI00337694	Isoform 1 of Rap guanine nucleotide exchange factor 6	RAPGEF6	Rap guanine nucleotide exchange factor 6	Plasma Membrane	other	2	2	0	1	1	0	0	-0.33	0.19043
IPI00386464	ring finger protein 12	RLIM	ring finger protein, LIM domain interactor	Nucleus	enzyme	2	2	0	0	1	0	0	-0.33	0.19043
IPI00465439	Fructose-bisphosphate aldolase A	ALDOA	aldolase A, fructose-bisphosphate	Cytoplasm	enzyme	2	0	2	1	0	1	0	-0.33	0.19043
IPI00740155	Hypothetical protein DKFZp686J17211	MSL1	male-specific lethal 1 homolog (Drosophila)	Nucleus	other	3	0	0	0	0	0	0	-0.33	0.19043
IPI00375731	Hypothetical protein DKFZp686E2459	RBM10	RNA binding motif protein 10	Nucleus	other	10	10	8	9	6	10	10	-0.33	0.19256
IPI00168036	CDNA FLJ35151 fis, clone PLACE6010701	TMEM40	transmembrane protein 40	unknown	other	9	7	8	8	8	11	11	0.33	0.19326
IPI00292134	Epidermal growth factor receptor substrate 15	EPS15	epidermal growth factor receptor pathway	Plasma Membrane	other	8	10	6	9	9	9	9	0.33	0.19326
IPI00019901	Isoform 1 of Alpha-adducin	ADD1	adducin 1 (alpha)	Cytoplasm	other	8	11	11	7	10	10	10	-0.33	0.19482
IPI00069817	Isoform 1 of Bromodomain adjacent to zinc finger domain protein 1	BAZ1B	bromodomain adjacent to zinc finger domain protein 1	Nucleus	transcription regulator	9	11	11	9	9	10	10	-0.32	0.19521
IPI00411886	Nucleolar complex protein 2 homolog	NOC2L	nucleolar complex associated 2 homolog	Nucleus	transcription regulator	10	10	11	10	10	8	8	-0.32	0.19521
IPI00007334	Isoform 1 of Apoptotic chromatin condensation inducer in the nucleus	ACIN1	apoptotic chromatin condensation inducer in the nucleus	Nucleus	enzyme	33	33	34	37	35	32	32	0.33	0.19549
IPI00009866	Isoform 1 of Keratin, type I cytoskeletal 13	KRT13	keratin 13	Cytoplasm	other	8	8	10	10	9	10	10	0.33	0.19549
IPI00418458	Isoform 1 of Pinin	PNN	pinin, desmosome associated protein	Plasma Membrane	other	32	35	33	34	36	34	34	0.33	0.19549
IPI00102752	Isoform 1 of Putative RNA-binding protein 15	RBM15	RNA binding motif protein 15	Nucleus	other	11	9	13	8	11	11	11	-0.32	0.19671
IPI00013881	heterogeneous nuclear ribonucleoprotein H1	HNRNPH1	heterogeneous nuclear ribonucleoprotein H1	Nucleus	other	12	8	8	9	11	11	11	0.32	0.19751
IPI00007138	Isoform 1 of Disks large-associated protein 4	DLGAP4	discs, large (Drosophila) homolog-associated protein 4	Plasma Membrane	other	0	2	0	2	2	2	2	0.32	0.19942
IPI00030116	Isoform 1 of Phosphoacetylglucosamine mutase	PGM3	phosphoglucomutase 3	Cytoplasm	enzyme	2	1	1	3	1	2	2	0.32	0.19942
IPI00186536	Isoform B of Mitogen-activated protein kinase kinase kinase 4	MAP3K4	mitogen-activated protein kinase kinase kinase 4	Cytoplasm	kinase	0	2	0	2	2	2	2	0.32	0.19942
IPI00295004	Isoform 1 of Alsin	ALS2	amyotrophic lateral sclerosis 2 (juvenile)	Cytoplasm	other	1	0	2	0	2	3	3	0.32	0.19942
IPI00297900	Probable ATP-dependent RNA helicase DDX10	DDX10	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	enzyme	0	0	2	3	2	0	0	0.32	0.19942
IPI00334294	Rac GTPase activating protein	ARHGAP32	Rho GTPase activating protein 32	Cytoplasm	other	0	2	0	3	2	0	0	0.32	0.19942
IPI00386662	Isoform 4 of FUS-interacting serine-arginine-rich protein 1	DIRAS3	DIRAS domain containing protein 3	Cytoplasm	other	1	1	2	2	2	2	2	0.32	0.19942
IPI00413140	Dynamin-1	DNM1	dynamin 1	Cytoplasm	enzyme	0	0	2	4	0	0	0	0.32	0.19942
IPI00442274	nuclear transcription factor, X-box binding-like 1	NFXL1	nuclear transcription factor, X-box binding-like 1	Nucleus	transcription regulator	0	2	0	4	0	0	0	0.32	0.19942
IPI00009329	Utrophin	UTRN	utrophin	Plasma Membrane	transmembrane receptor	2	2	2	1	1	2	2	-0.32	0.20686
IPI00010088	Histone deacetylase 4	HDAC4	histone deacetylase 4	Nucleus	transcription regulator	2	2	2	2	0	0	0	-0.32	0.20686
IPI00010882	Isoform DFF45 of DNA fragmentation factor alpha subunit (Fragmentation factor 45)	DFFA	DNA fragmentation factor, 45kDa, alpha subunit	Nucleus	enzyme	2	3	0	2	1	0	0	-0.32	0.20686
IPI00293963	Chromodomain Y-like protein	CDYL	chromodomain protein, Y-like	Nucleus	transcription regulator	0	3	2	2	1	0	0	-0.32	0.20686
IPI00479125	SLIT-ROBO Rho GTPase-activating protein 2	SRGAP2	SLIT-ROBO Rho GTPase activating protein 2	Cytoplasm	other	2	3	0	0	2	0	0	-0.32	0.20686
IPI00022215	Activity-dependent neuroprotector	ADNP	activity-dependent neuroprotector homolog 1	Nucleus	transcription regulator	9	13	13	12	10	10	10	-0.31	0.20763
IPI00163505	Isoform 1 of RNA-binding region-containing protein 2	RBM39	RNA binding motif protein 39	Nucleus	transcription regulator	13	13	9	11	12	9	9	-0.31	0.20763
IPI00216546	Isoform 2 of Probable palmitoyltransferase ZDHHC5	ZDHHC5	zinc finger, DHHC-type containing 5	Nucleus	other	12	11	13	10	11	12	12	-0.31	0.20793
IPI00180625	KIAA0284 protein	KIAA0284	KIAA0284	unknown	other	12	12	14	10	13	12	12	-0.31	0.20847
IPI00029795	Isoform 4 of Nuclear factor 1 C-type	NFIC	nuclear factor 1/C (CCAAT-binding transcription factor 1)	Nucleus	transcription regulator	14	10	9	14	12	10	10	0.31	0.20933
IPI00000001	Isoform Long of Double-stranded RNA-binding protein Staufen 1	STAU1	staufen, RNA binding protein, homolog 1	Cytoplasm	transporter	2	1	2	1	2	4	4	0.31	0.21067
IPI00000279	Hypothetical protein LEREPO4	ZC3H15	zinc finger CCH-type containing 15	Nucleus	other	2	2	1	3	1	3	3	0.31	0.21067
IPI00004838	Isoform Crk-II of Proto-oncogene C-crk	CRK	v-crk sarcoma virus CT10 oncogene homolog 2	Cytoplasm	other	2	1	2	1	3	3	3	0.31	0.21067
IPI00008231	Chromosome 1 open reading frame 9	C1orf9	chromosome 1 open reading frame 9	unknown	other	2	0	2	0	3	3	3	0.31	0.21067
IPI00011461	Isoform Beta of Striatin-3	STRN3	striatin, calmodulin binding protein 3	Nucleus	transcription regulator	3	1	1	3	1	3	3	0.31	0.21067
IPI00024816	Hypothetical protein FLJ22484	MFF	mitochondrial fission factor	Cytoplasm	other	0	0	3	3	0	3	3	0.31	0.21067
IPI00103709	Isoform 1 of Inhibitor of growth protein 5	ING5	inhibitor of growth family, member 5	Nucleus	other	0	0	3	2	2	3	3	0.31	0.21067
IPI00180764	Histone acetyltransferase MYST2	KAT7	K(lysine) acetyltransferase 7	Nucleus	enzyme	3	0	0	3	3	0	0	0.31	0.21067
IPI00007935	PDZ and LIM domain protein 5	PDLIM5	PDZ and LIM domain 5	Cytoplasm	other	1	3	3	1	3	0	0	-0.31	0.22133
IPI00008240	Methionyl-tRNA synthetase	MARS	methionyl-tRNA synthetase	Cytoplasm	enzyme	2	2	3	2	2	1	1	-0.31	0.22133
IPI00465449	Meningioma-expressed antigen 5s splice variant	MGEA5	meningioma expressed antigen 5 (hyaluronan-binding protein 5)	Cytoplasm	enzyme	2	2	3	2	2	0	0	-0.31	0.22133
IPI00216044	Isoform 1 of RNA-binding protein Raly	RALY	RNA binding protein, autoantigenic (hnRNP A1)	Nucleus	other	13	14	16	11	14	15	15	-0.30	0.22243
IPI00171199	Isoform 2 of Proteasome subunit alpha type 3	PSMA3	proteasome (prosome, macropain) subunit alpha type 3	Cytoplasm	peptidase	14	12	11	12	14	14	14	0.30	0.22273
IPI00386211	family with sequence similarity 44, member A	BOD1L	biorientation of chromosomes in cell division 1	unknown	other	12	13	14	12	14	16	16	0.30	0.22324
IPI00004388	Tyrosine-protein phosphatase non-receptor type 21	PTPN21	protein tyrosine phosphatase, non-receptor type 21	Cytoplasm	phosphatase	2	2	2	2	2	4	4	0.30	0.22461
IPI00022827	Isoform 1 of STE20-like serine/threonine-protein kinase	SLK	STE20-like kinase	Nucleus	kinase	2	2	2	2	3	3	3	0.30	0.22461
IPI00028392	specifically androgen-regulated protein	C1orf116	chromosome 1 open reading frame 116	unknown	other	2	2	2	4	0	3	3	0.30	0.22461

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00043622	Isoform 1 of FERM domain-containing protein 6	FRMD6	FERM domain containing 6	Cytoplasm	other	0	4	0	3	4	0	0.30	0.22461
IPI00178072	Cytospin-A	SPECC1L	sperm antigen with calponin homology a	unknown	other	1	3	2	2	3	3	0.30	0.22461
IPI00413144	Hypothetical protein DKFZp686B18208	C15orf42	chromosome 15 open reading frame 42	Nucleus	other	0	3	2	2	0	5	0.30	0.22461
IPI000419847	Isoform Alpha of Vexin	SORBS3	sorbin and SH3 domain containing 3	Cytoplasm	other	2	2	2	2	4	2	0.30	0.22461
IPI00003515	Thyroid receptor-interacting protein 11	TRIP11	thyroid hormone receptor interactor 11	Cytoplasm	transcription regulator	3	3	2	2	2	2	-0.30	0.22844
IPI00011891	protein kinase, AMP-activated, alpha 1 catalytic subunit isoform	PRKAA1	protein kinase, AMP-activated, alpha 1 ca	Cytoplasm	kinase	3	2	3	2	1	3	-0.30	0.22844
IPI00020524	Putative chloride channel protein 7	CLCN7	chloride channel 7	Plasma Membrane	ion channel	3	3	2	2	3	0	-0.30	0.22844
IPI00020985	E1A-associated protein p300	EP300	E1A binding protein p300	Nucleus	transcription regulator	2	3	3	3	0	2	-0.30	0.22844
IPI00022184	Isoform 3 of Pumilio homolog 2	PUM2	pumilio homolog 2 (Drosophila)	Cytoplasm	other	3	3	2	3	2	0	-0.30	0.22844
IPI00022479	guanine nucleotide exchange factor p532	HERC1	hect (homologous to the E6-AP (UBE3A))	Cytoplasm	other	3	2	3	0	2	3	-0.30	0.22844
IPI00295022	NK-tumor recognition protein	NKTR	natural killer-tumor recognition sequence	Plasma Membrane	other	2	3	3	0	2	3	-0.30	0.22844
IPI00328342	Isoform 1 of Sodium bicarbonate cotransporter 3	SLC4A7	solute carrier family 4, sodium bicarbonat	Plasma Membrane	transporter	2	3	3	0	0	4	-0.30	0.22844
IPI00642705	Isoform 2 of AT-rich interactive domain-containing protein 1A	ARID1A	AT rich interactive domain 1A (SWI-like)	Nucleus	transcription regulator	2	3	3	2	0	3	-0.30	0.22844
IPI00414676	Heat shock protein HSP 90-beta	HSP90AB1	heat shock protein 90kDa alpha (cytosolic)	Cytoplasm	enzyme	50	63	70	55	64	68	0.29	0.23162
IPI00027505	Integrin alpha-V precursor	ITGAV	integrin, alpha V (vitronectin receptor, alpha V)	Plasma Membrane	other	2	2	3	2	4	3	0.29	0.23171
IPI00103516	Caskin-2	CASKIN2	CASK interacting protein 2	Cytoplasm	other	0	0	5	4	2	3	0.29	0.23171
IPI00219913	Ubiquitin carboxyl-terminal hydrolase 14	USP14	ubiquitin specific peptidase 14 (tRNA-guan	Cytoplasm	peptidase	3	3	1	3	4	2	0.29	0.23171
IPI00009772	BET1-like protein	BET1L	blocked early in transport 1 homolog (S.	Cytoplasm	transporter	3	3	3	3	2	2	-0.29	0.23919
IPI00009917	Isoform 3 of LAS1-like protein	LAS1L	LAS1-like (S. cerevisiae)	Nucleus	other	5	2	2	4	0	2	-0.29	0.23919
IPI00013949	Small glutamine-rich tetratricopeptide repeat-containing protein	SGTA	small glutamine-rich tetratricopeptide repeat	Cytoplasm	other	3	3	3	4	0	2	-0.29	0.23919
IPI00016250	Fragile X mental retardation syndrome-related protein 2	FXR2	fragile X mental retardation, autosomal h	Cytoplasm	other	3	3	3	2	3	2	-0.29	0.23919
IPI00022228	Vigilin	HDLBP	high density lipoprotein binding protein	Nucleus	transporter	3	2	4	3	2	2	-0.29	0.23919
IPI00026219	Cleavage and polyadenylation specificity factor, 160 kDa subunit	CPSF1	cleavage and polyadenylation specific fac	Nucleus	other	3	3	3	2	2	3	-0.29	0.23919
IPI00028493	Isoform 1 of Tuberin	TSC2	tuberous sclerosis 2	Cytoplasm	other	4	3	2	4	0	2	-0.29	0.23919
IPI00032491	Inner nuclear membrane protein Man1	LEMD3	LEM domain containing 3	Nucleus	other	3	4	2	4	2	0	-0.29	0.23919
IPI00063387	28 kDa protein	TFPT	TCF3 (E2A) fusion partner (in childhood L	Nucleus	other	2	3	4	0	3	3	-0.29	0.23919
IPI00149098	Isoform 2 of Transcription initiation factor TFIID subunit 1	TAF1 (include	TAF1 RNA polymerase II, TATA box bindin	Nucleus	transcription regulator	2	3	4	3	3	0	-0.29	0.23919
IPI00168698	PDZ domain-containing protein 8	PDZD8	PDZ domain containing 8	unknown	other	3	5	1	3	2	2	-0.29	0.23919
IPI00220045	Isoform 1 of DNA-directed RNA polymerases III 80 kDa polypeptide	POLR3E	polymerase (RNA) III (DNA directed) polypeptide	Nucleus	transcription regulator	3	4	2	3	0	3	-0.29	0.23919
IPI00289082	Tyrosine-protein phosphatase non-receptor type 12	PTPN12	protein tyrosine phosphatase, non-receptor	Cytoplasm	phosphatase	0	4	4	0	4	2	-0.29	0.23919
IPI00304742	Serine/threonine-protein kinase 10	STK10	serine/threonine kinase 10	Cytoplasm	kinase	3	3	3	3	2	2	-0.29	0.23919
IPI000329791	Probable ATP-dependent RNA helicase DDX46	DDX46	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	enzyme	3	3	3	4	1	2	-0.29	0.23919
IPI00337602	56 kDa protein	ZNF326	zinc finger protein 326	Nucleus	transcription regulator	5	3	0	3	0	3	-0.29	0.23919
IPI00643923	PREDICTED: similar to HLA-B associated transcript-2 isoform a	PRRC2B	proline-rich coiled-coil 2B	unknown	other	2	6	0	5	0	0	-0.29	0.23919
IPI00002188	Brefeldin A-inhibited guanine nucleotide-exchange protein 1	ARFGEF1	ADP-ribosylation factor guanine nucleotid	Cytoplasm	other	3	1	4	3	3	4	0.28	0.24156
IPI00002478	Isoform B of Endothelin-converting enzyme 1	ECE1	endothelin converting enzyme 1	Plasma Membrane	peptidase	2	3	3	4	3	3	0.28	0.24156
IPI00291608	Isoform 1 of PEST-containing nuclear protein	PCNP	PEST proteolytic signal containing nuclear	Nucleus	other	3	4	1	3	2	5	0.28	0.24156
IPI00036742	hypothetical protein LOC25962 isoform 1	KIAA1429	KIAA1429	Nucleus	other	3	2	5	0	3	4	-0.28	0.24435
IPI00296388	Isoform 1 of Bromodomain adjacent to zinc finger domain 2A	BAZ2A	bromodomain adjacent to zinc finger domain	Nucleus	transcription regulator	3	2	5	2	2	4	-0.28	0.24435
IPI00296421	PREDICTED: EH domain binding protein 1-like 1 isoform 1	EHBP1L1	EH domain binding protein 1-like 1	Cytoplasm	other	4	0	5	1	3	4	-0.28	0.24435
IPI00337736	Isoform 2 of Kinectin	KTN1	kinectin 1 (kinesin receptor)	Cytoplasm	other	23	23	16	24	17	18	-0.28	0.24457
IPI00302917	AT rich interactive domain 4B isoform 2	ARID4B	AT rich interactive domain 4B (RBP1-like)	Nucleus	other	3	3	3	3	2	6	0.27	0.24628
IPI00442210	Isoform 1 of Abl interactor 2	ABI2	abl-interactor 2	Cytoplasm	other	0	5	3	0	5	5	0.27	0.24628
IPI00513791	dedicator of cytokinesis 7	DOCK7	dedicator of cytokinesis 7	Plasma Membrane	other	3	3	3	4	4	3	0.27	0.24628
IPI00289746	Isoform 2 of Serine/threonine-protein kinase PAK 1	PAK1	p21 protein (Cdc42/Rac)-activated kinase	Cytoplasm	kinase	3	3	5	3	3	3	-0.27	0.25029
IPI00410126	PPP1R2P3 protein	PPP1R2P3	protein phosphatase 1, regulatory (inhibit	unknown	other	3	4	4	4	3	2	-0.27	0.25029
IPI00328293	Serine/arginine repetitive matrix 1	SRRM1	serine/arginine repetitive matrix 1	Nucleus	other	95	86	75	80	84	88	-0.27	0.25091
IPI00289776	Isoform 1 of Probable ubiquitin ligase protein MYCBP2	MYCBP2	MYC binding protein 2	Nucleus	enzyme	2	3	5	3	4	5	0.27	0.25294
IPI00396279	CLIP-associating protein 1	CLASP1	cytoplasmic linker associated protein 1	Cytoplasm	other	4	5	0	4	4	4	0.27	0.25294
IPI00414095	Eukaryotic translation initiation factor 4E nuclear import factor 1	EIF4ENIF1	eukaryotic translation initiation factor 4E	Cytoplasm	translation regulator	3	4	3	5	4	3	0.27	0.25294
IPI00604399	Isoform 2 of Fanconi anemia group D2 protein	FANCD2	Fanconi anemia, complementation group	Nucleus	other	5	3	2	6	3	3	0.27	0.25294
IPI00749302	Hypothetical protein DKFZp686L20116	FAM122B	family with sequence similarity 122B	unknown	other	3	4	3	4	5	3	0.27	0.25294
IPI00170548	Isoform 1 of ATPase family AAA domain-containing protein 2	ATAD2	ATPase family, AAA domain containing 2	Nucleus	other	5	2	5	4	3	3	-0.27	0.25666
IPI00250716	Isoform B of Bromodomain and WD-repeat domain-containing protein	BRWD1	bromodomain and WD repeat domain containing	Nucleus	transcription regulator	3	4	5	4	4	2	-0.27	0.25666



**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00020984	Calnexin precursor	CANX	calnexin	Cytoplasm	other	21	23	29	25	25	20	-0.27	0.25682
IPI00465128	Isoform 1 of Large proline-rich protein BAT3	BAG6	BCL2-associated athanogene 6	Nucleus	enzyme	25	27	22	28	25	24	0.26	0.25840
IPI00045051	Transcriptional activator protein Pur-beta	PURB	purine-rich element binding protein B	Nucleus	transcription regulator	4	3	4	4	4	5	0.26	0.25857
IPI00306087	WDR79 protein	WRAP53	WD repeat containing, antisense to TP53	Nucleus	other	4	4	3	6	3	4	0.26	0.25857
IPI00328798	DLNB11 protein	BCL9L	B-cell CLL/lymphoma 9-like	Cytoplasm	other	4	3	4	3	7	3	0.26	0.25857
IPI00454969	PHD finger protein 14	PHF14	PHD finger protein 14	unknown	other	3	4	4	5	3	5	0.26	0.25857
IPI00167941	Midasin	MDN1	MDN1, midasin homolog (yeast)	Nucleus	other	7	4	2	5	2	5	-0.26	0.26100
IPI00440502	BRD2 protein	BRD2	bromodomain containing 2	Nucleus	kinase	5	4	4	3	4	4	-0.26	0.26100
IPI00021728	Eukaryotic translation initiation factor 2 subunit 2	EIF2S2	eukaryotic translation initiation factor 2, s	Cytoplasm	translation regulator	5	4	3	5	3	6	0.26	0.26271
IPI00329692	Isoform Long of Glycylpeptide N-tetradecanoyltransferase 1	NMT1	N-myristoyltransferase 1	Cytoplasm	enzyme	4	4	4	5	5	4	0.26	0.26271
IPI00448767	Growth factor receptor-bound protein 7	GRB7	growth factor receptor-bound protein 7	Plasma Membrane	other	6	4	4	4	4	4	-0.26	0.26541
IPI00549766	Isoform 1 of Protein FAM40A	FAM40A	family with sequence similarity 40, memb	Nucleus	other	5	4	4	5	6	4	0.25	0.26730
IPI00554648	Keratin, type II cytoskeletal 8	KRT8	keratin 8	Cytoplasm	other	6	5	4	7	3	3	-0.25	0.26945
IPI00006213	Pericentriolar material 1	PCM1	pericentriolar material 1	Cytoplasm	other	4	4	6	6	6	4	0.25	0.27108
IPI00178047	Proline and glutamic acid rich nuclear protein isoform	PELP1	proline, glutamate and leucine rich protei	Nucleus	other	6	5	5	5	6	3	-0.25	0.27257
IPI00419844	U4/U6.U5 tri-snRNP-associated protein 2	USP39	ubiquitin specific peptidase 39	Nucleus	peptidase	7	4	5	3	6	5	-0.25	0.27257
IPI00026689	Hypothetical protein DKFZp686L20222	CDK1	cyclin-dependent kinase 1	Nucleus	kinase	4	6	5	7	5	5	0.25	0.27437
IPI00021712	Isoform Long of Restin	CLIP1	CAP-GLY domain containing linker protei	Cytoplasm	other	5	5	5	6	6	5	0.25	0.27437
IPI00021290	ATP-citrate synthase	ACLY	ATP citrate lyase	Cytoplasm	enzyme	4	6	7	6	5	4	-0.25	0.27601
IPI00291607	Inositol 1,4,5-trisphosphate receptor type 3	ITPR3	inositol 1,4,5-trisphosphate receptor, type	Cytoplasm	ion channel	6	6	5	5	5	5	-0.25	0.27601
IPI00006029	Isoform 1 of Forkhead box protein K2	FOXK2	forkhead box K2	Nucleus	transcription regulator	4	6	6	7	5	6	0.24	0.27769
IPI00015195	Cleavage stimulation factor, 77 kDa subunit	CSTF3	cleavage stimulation factor, 3' pre-RNA, s	Nucleus	other	5	6	5	7	5	6	0.24	0.27769
IPI00028954	80 kDa MCM3-associated protein	MCM3AP	minichromosome maintenance complex c	Nucleus	other	5	7	4	5	7	6	0.24	0.27769
IPI00032597	RNA-binding motif protein, X-linked 2	RBMX2	RNA binding motif protein, X-linked 2	unknown	other	4	7	5	7	7	4	0.24	0.27769
IPI00169307	Rho GTPase activating protein 21	ARHGAP21	Rho GTPase activating protein 21	Cytoplasm	other	5	8	3	5	9	4	0.24	0.27769
IPI00181359	SFRS2-interacting protein	SCAF11	SR-related CTD-associated factor 11	Nucleus	other	5	5	6	6	6	6	0.24	0.27769
IPI00419693	activating transcription factor 7 interacting protein	ATF7IP	activating transcription factor 7 interactin	Nucleus	transcription regulator	4	5	7	7	5	6	0.24	0.27769
IPI00012645	Isoform 1 of Spectrin beta chain, brain 2	SPTBN2	spectrin, beta, non-erythrocytic 2	Cytoplasm	other	6	6	5	7	7	5	0.24	0.28066
IPI00021695	Isoform D of Plasma membrane calcium-transporting ATPase 1	ATP2B1	ATPase, Ca++ transporting, plasma meml	Plasma Membrane	transporter	5	6	6	5	7	7	0.24	0.28066
IPI00218566	Isoform 1A of Mitogen-activated protein kinase kinase kinase 7	MAP3K7 (incl	mitogen-activated protein kinase kinase k	Cytoplasm	kinase	5	6	6	5	6	8	0.24	0.28066
IPI00005861	Isoform 1 of U4/U6 small nuclear ribonucleoprotein Prp3	PRPF3	PRP3 pre-mRNA processing factor 3 hom	Nucleus	other	7	5	7	8	4	5	-0.24	0.28100
IPI00438229	Isoform 1 of Transcription intermediary factor 1-beta	TRIM28	tripartite motif containing 28	Nucleus	transcription regulator	4	7	7	6	6	8	0.24	0.28297
IPI00549725	Phosphoglycerate mutase 1	PGAM1	phosphoglycerate mutase 1 (brain)	Cytoplasm	phosphatase	6	5	7	6	6	8	0.24	0.28297
IPI00398992	Isoform 1 of Chromodomain-helicase-DNA-binding protein 8	CHD8	chromodomain helicase DNA binding prc	Nucleus	enzyme	6	8	6	7	5	6	-0.24	0.28387
IPI00642862	Peptidyl-prolyl cis-trans isomerase-like 4	PPIL4	peptidylprolyl isomerase (cyclophilin)-like	Nucleus	enzyme	6	6	8	8	4	6	-0.24	0.28387
IPI00290452	Transmembrane BAX inhibitor motif-containing protein 1	TMBIM1	transmembrane BAX inhibitor motif conta	unknown	other	6	7	8	5	6	8	-0.23	0.28592
IPI00014843	leucine rich repeat containing 16	LRRC16A	leucine rich repeat containing 16A	Cytoplasm	enzyme	6	7	7	7	6	9	0.23	0.28763
IPI00063234	PRKAR2A protein	PRKAR2A	protein kinase, cAMP-dependent, regulat	Cytoplasm	kinase	6	7	7	7	7	8	0.23	0.28763
IPI00004795	Methylosome subunit pICln	CLNS1A	chloride channel, nucleotide-sensitive, 1A	Plasma Membrane	ion channel	8	8	8	8	5	9	-0.23	0.29083
IPI00413734	Isoform 6 of Transcriptional regulator ATRX	ATRX	alpha thalassemia/mental retardation syn	Nucleus	transcription regulator	7	10	7	12	5	5	-0.23	0.29083
IPI00163849	Epidermal growth factor receptor substrate 15-like 1	EPS15L1	epidermal growth factor receptor pathwa	Plasma Membrane	other	7	8	8	9	6	10	0.23	0.29236
IPI00030466	PREDICTED: hypothetical protein LOC26115 isoform 1	TANC2	tetratricopeptide repeat, ankyrin repeat a	Nucleus	transcription regulator	10	8	8	7	8	9	-0.22	0.29433
IPI00169434	Grb10 interacting GYF protein 2	GIGYF2	GRB10 interacting GYF protein 2	unknown	other	6	9	10	8	10	9	0.22	0.29585
IPI00298696	Treacle protein	TCOF1	Treacher Collins-Franceschetti syndrome	Nucleus	transporter	60	60	49	63	55	48	-0.22	0.29614
IPI00444371	WD repeat domain 44 protein	WDR44	WD repeat domain 44	Cytoplasm	other	9	8	9	9	11	8	0.22	0.29753
IPI00000861	Isoform 1 of LIM and SH3 domain protein 1	LASP1	LIM and SH3 protein 1	Cytoplasm	transporter	12	7	9	9	11	6	-0.22	0.29779
IPI00373870	Isoform 1 of Chromodomain helicase-DNA-binding protein 3					12	9	7	8	6	12	-0.22	0.29779
IPI00375330	wings apart-like homolog	WAPAL	wings apart-like homolog (Drosophila)	Nucleus	other	9	10	8	11	8	10	0.22	0.29907
IPI00657953	triple functional domain	TRIO	triple functional domain (PTPRF interactin	Plasma Membrane	kinase	8	9	10	11	8	10	0.22	0.29907
IPI00221106	splicing factor 3B subunit 2	SF3B2	splicing factor 3b, subunit 2, 145kDa	Nucleus	other	13	9	8	12	4	12	-0.22	0.30011
IPI00643352	nucleoporin 214kDa	NUP214	nucleoporin 214kDa	Nucleus	transporter	9	9	12	8	8	16	0.21	0.30260
IPI00179953	Isoform 1 of Nuclear autoantigenic sperm protein	NASP	nuclear autoantigenic sperm protein (hist	Nucleus	other	15	9	9	13	10	8	-0.21	0.30352
IPI00008998	HSPC121	PTPLAD1	protein tyrosine phosphatase-like A dom	Cytoplasm	other	11	13	14	14	11	11	-0.20	0.30747
IPI00170596	Paired amphipathic helix protein Sin3a	SIN3A	SIN3 transcription regulator homolog A (	Nucleus	transcription regulator	10	13	12	13	11	13	0.21	0.30749

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI0000192	Isoform F of SON protein	SON	SON DNA binding protein	Nucleus	other	15	13	11	17	10	10	-0.20	0.30825
IPI00300384	Receptor tyrosine-protein kinase erbB-2 precursor	ERBB2	v-erb-b2 erythroblastic leukemia viral onc	Plasma Membrane	kinase	14	12	14	12	12	14	-0.20	0.30902
IPI00022624	Retinoic acid-induced protein 3	GPRCSA	G protein-coupled receptor, family C, group 5	Plasma Membrane	G-protein coupled receptor	16	14	12	15	14	11	-0.20	0.31023
IPI00401282	PREDICTED: hypothetical protein LOC23307	FKBP15	FK506 binding protein 15, 133kDa	Plasma Membrane	enzyme	12	14	13	12	14	15	0.20	0.31053
IPI00260388	PHD finger protein 2	PHF2	PHD finger protein 2	Nucleus	other	16	19	13	20	14	16	0.19	0.31398
IPI00604517	74 kDa protein	NCL	nucleolin	Nucleus	other	18	17	20	22	18	13	-0.19	0.31422
IPI00418313	Isoform 4 of Interleukin enhancer-binding factor 3	ILF3	interleukin enhancer binding factor 3, 90kDa	Nucleus	transcription regulator	28	23	16	19	26	20	-0.18	0.31605
IPI00395337	Isoform 1 of Pre-mRNA 3'-end-processing factor FIP1	FIP1L1	FIP1 like 1 (S. cerevisiae)	Nucleus	other	17	23	21	21	22	20	0.18	0.31679
IPI0002286	Ankyrin repeat domain-containing protein 11	ANKRD11	ankyrin repeat domain 11	Nucleus	other	0	0	0	2	0	0	0.17	0.32019
IPI00002549	Isoform 1 of Anaphase-promoting complex subunit 2	ANAPC2	anaphase promoting complex subunit 2	Nucleus	enzyme	0	0	0	2	0	0	0.17	0.32019
IPI00004399	ERBB receptor feedback inhibitor 1	ERRFI1	ERBB receptor feedback inhibitor 1	Cytoplasm	other	0	0	0	0	0	2	0.17	0.32019
IPI0005087	Tropomodulin-3	TMOD3	tropomodulin 3 (ubiquitous)	Cytoplasm	other	0	0	0	2	0	1	0.17	0.32019
IPI00005146	Hypothetical protein A-362G6.1	KIAA0430	KIAA0430	unknown	other	0	0	0	2	0	0	0.17	0.32019
IPI00005490	Golgi phosphoprotein 3	GOLPH3	golgi phosphoprotein 3 (coat-protein)	Cytoplasm	other	0	0	0	2	0	0	0.17	0.32019
IPI00005578	EH-domain-containing protein 4	EHD4	EH-domain containing 4	Plasma Membrane	enzyme	0	0	0	0	2	0	0.17	0.32019
IPI00010252	Isoform Alpha of Transcription intermediary factor 1-gamma	TRIM33	tripartite motif containing 33	Nucleus	transcription regulator	0	0	0	2	0	0	0.17	0.32019
IPI00012074	Heterogeneous nuclear ribonucleoprotein R	HNRNPR	heterogeneous nuclear ribonucleoprotein	Nucleus	other	0	0	0	0	0	2	0.17	0.32019
IPI00012149	U3 small nucleolar ribonucleoprotein protein MPP10	MPHOSPH10	M-phase phosphoprotein 10 (U3 small nucleolar)	Nucleus	other	1	1	1	2	0	1	0.17	0.32019
IPI00012669	Hypothetical protein DKFZp564H1322	SMG9	smg-9 homolog, nonsense mediated mRNA decay	Cytoplasm	other	0	0	0	0	2	0	0.17	0.32019
IPI00013068	Eukaryotic translation initiation factor 3 subunit 6	EIF3E	eukaryotic translation initiation factor 3, subunit 6	Cytoplasm	translation regulator	1	1	0	1	2	0	0.17	0.32019
IPI00013184	N-terminal acetyltransferase complex ARD1 subunit homolog A	NAA10	N(alpha)-acetyltransferase 10, NatA catalytic subunit	Nucleus	enzyme	1	1	0	0	1	2	0.17	0.32019
IPI00013215	Origin recognition complex subunit 1	ORC1	origin recognition complex, subunit 1	Nucleus	other	0	0	0	0	2	0	0.17	0.32019
IPI00013269	Isoform 1 of Protein C6orf106	C6orf106	chromosome 6 open reading frame 106	unknown	other	0	0	0	0	0	2	0.17	0.32019
IPI00013485	40S ribosomal protein S2	RPS2	ribosomal protein S2	Cytoplasm	other	0	0	0	2	0	1	0.17	0.32019
IPI00013894	Stress-induced-phosphoprotein 1	STIP1	stress-induced-phosphoprotein 1	Cytoplasm	other	0	0	0	2	1	0	0.17	0.32019
IPI00014197	Hypothetical protein	CDV3	CDV3 homolog (mouse)	unknown	other	1	0	1	2	0	0	0.17	0.32019
IPI00014376	RAB31, member RAS oncogene family variant	RAB31	RAB31, member RAS oncogene family	Cytoplasm	enzyme	0	0	0	1	2	1	0.17	0.32019
IPI00016802	NAD-dependent deacetylase sirtuin-1	SIRT1	sirtuin 1	Nucleus	transcription regulator	0	0	0	0	2	0	0.17	0.32019
IPI00017648	Lactase-phlorizin hydrolase precursor	LCT	lactase	Plasma Membrane	enzyme	0	0	0	2	0	0	0.17	0.32019
IPI00019471	Insulin receptor substrate 1	IRS1	insulin receptor substrate 1	Cytoplasm	enzyme	0	0	0	0	2	0	0.17	0.32019
IPI00020546	Ash1	ASH1L	ash1 (absent, small, or homeotic)-like (Drosophila)	Nucleus	transcription regulator	0	0	0	0	0	2	0.17	0.32019
IPI00020898	Ribosomal protein S6 kinase alpha-3	RPS6KA3	ribosomal protein S6 kinase, 90kDa, polypeptide chain 3	Cytoplasm	kinase	0	0	0	2	0	0	0.17	0.32019
IPI00020928	Transcription factor A, mitochondrial precursor	TFAM	transcription factor A, mitochondrial	Cytoplasm	transcription regulator	0	0	0	0	0	2	0.17	0.32019
IPI00023004	Eukaryotic translation initiation factor 1A, Y-chromosomal	E1F1AY	eukaryotic translation initiation factor 1A, Y-chromosomal	Cytoplasm	translation regulator	1	0	0	1	2	1	0.17	0.32019
IPI00028071	Isoform Long of Dual specificity protein kinase CLK2	CLK2	CDC-like kinase 2	Nucleus	kinase	0	0	0	0	2	0	0.17	0.32019
IPI00029054	Cytosolic purine 5'-nucleotidase	NT5C2	5'-nucleotidase, cytosolic II	Cytoplasm	phosphatase	0	0	1	1	0	2	0.17	0.32019
IPI00030876	Protein diaphanous homolog 1	DIAPH1	diaphanous homolog 1 (Drosophila)	Cytoplasm	other	0	0	0	0	2	0	0.17	0.32019
IPI00031563	Hypothetical protein DDA1	DDA1	DET1 and DDB1 associated 1	unknown	other	0	0	0	0	0	2	0.17	0.32019
IPI00032358	Nuclear envelope pore membrane protein POM 121	POM121/POM122	POM121 membrane glycoprotein	Nucleus	other	0	0	0	0	0	2	0.17	0.32019
IPI00032936	ETS domain-containing transcription factor ERF	ERF	Ets2 repressor factor	Nucleus	transcription regulator	0	0	0	2	0	0	0.17	0.32019
IPI00032971	Oxysterol-binding protein-related protein 10	OSBPL10	oxysterol binding protein-like 10	unknown	other	0	0	0	0	2	0	0.17	0.32019
IPI00034006	Tyrosine-protein phosphatase non-receptor type 23	PTPN23	protein tyrosine phosphatase, non-receptor type 23	Cytoplasm	phosphatase	1	1	0	1	1	2	0.17	0.32019
IPI00043565	Coiled-coil domain-containing protein 16	ZNF830	zinc finger protein 830	Nucleus	other	0	0	1	2	0	0	0.17	0.32019
IPI00059242	Synapse-associated protein 1	SYAP1	synapse associated protein 1	Nucleus	other	1	1	0	1	2	1	0.17	0.32019
IPI00069084	Isoform 1 of Transformation/transcription domain-associated protein 1	TRRAP	transformation/transcription domain-associated protein 1	Nucleus	transcription regulator	0	1	0	2	0	0	0.17	0.32019
IPI00070943	Isoform 1 of Phosphatidylinositol 4-kinase alpha	PI4KA	phosphatidylinositol 4-kinase, catalytic, alpha	Cytoplasm	kinase	0	0	0	2	0	0	0.17	0.32019
IPI00099834	Ubinuclein	UBN1	ubinnuclein 1	Nucleus	transcription regulator	0	0	0	2	0	0	0.17	0.32019
IPI00101049	NMD3 homolog	NMD3	NMD3 homolog (S. cerevisiae)	Nucleus	other	1	0	0	2	1	0	0.17	0.32019
IPI00102173	Ubiquitin-conjugating enzyme E2 E2	UBE2E2	ubiquitin-conjugating enzyme E2E 2	Cytoplasm	enzyme	1	1	1	0	0	2	0.17	0.32019
IPI00102575	ATP(GTP)-binding protein	ATAD5	ATPase family, AAA domain containing 5	unknown	other	0	0	0	0	0	2	0.17	0.32019
IPI00141933	Mitotic checkpoint serine/threonine-protein kinase BUB1 beta	BUB1B	budding uninhibited by benzimidazoles 1 beta	Nucleus	kinase	0	0	0	2	0	0	0.17	0.32019
IPI00152001	Isoform Alpha of Tripartite motif protein 3	TRIM3	tripartite motif containing 3	Cytoplasm	other	0	0	0	2	0	0	0.17	0.32019
IPI00157643	Isoform 3 of Transcription factor III B 90 kDa subunit	BRF1	(include BRF1 homolog, subunit of RNA polymerase II)	Nucleus	transcription regulator	0	0	0	2	0	0	0.17	0.32019
IPI00160131	Myosin-Ixa	MYO9A	myosin IXA	Cytoplasm	enzyme	0	0	0	0	2	0	0.17	0.32019

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00165138	GRIP and coiled-coil domain-containing protein 1	GCC1	GRIP and coiled-coil domain containing 1	Cytoplasm	other	0	0	0	0	0	2	0.17	0.32019
IPI00165171	DGCR14 protein	DGCR14	DiGeorge syndrome critical region gene 1	Nucleus	other	0	0	1	0	0	2	0.17	0.32019
IPI00166555	Chromosome 13 open reading frame 10	RBM26	RNA binding motif protein 26	unknown	other	1	0	0	0	0	2	0.17	0.32019
IPI00170643	Isoform 2 of Histone-lysine N-methyltransferase, H3 lysine-79 sp	DOT1L	DOT1-like, histone H3 methyltransferase 1	Nucleus	phosphatase	0	0	0	0	2	1	0.17	0.32019
IPI00170935	Leucine-rich repeat-containing protein 47	LRRC47	leucine rich repeat containing 47	unknown	other	0	0	0	1	2	0	0.17	0.32019
IPI00172590	69 kDa protein					1	0	0	1	2	0	0.17	0.32019
IPI00173346	Phosphoglucosyltransferase-2-like 1	PGM2L1	phosphoglucosyltransferase 2-like 1	Cytoplasm	enzyme	0	1	0	2	0	0	0.17	0.32019
IPI00176398	Isoform 1 of SLIT and NTRK-like protein 6 precursor	SLITRK6	SLIT and NTRK-like family, member 6	unknown	other	0	0	0	0	2	0	0.17	0.32019
IPI00178150	Isoform 1 of Chromosome-associated kinesin KIF4A	KIF4A	kinesin family member 4A	Nucleus	other	0	0	1	2	0	0	0.17	0.32019
IPI00178185	Isoform 1 of Cytoskeleton-like bicaudal D protein homolog 2	BICD2	bicaudal D homolog 2 (Drosophila)	Cytoplasm	other	0	0	0	0	2	0	0.17	0.32019
IPI00181283	Similar to phospholipase C, beta 3 (Fragment)	PLCB3	phospholipase C, beta 3 (phosphatidylinositol)	Cytoplasm	enzyme	1	0	1	2	0	0	0.17	0.32019
IPI00184821	Bifunctional coenzyme A synthase	COASY	CoA synthase	Cytoplasm	kinase	1	1	0	0	1	2	0.17	0.32019
IPI00184997	Full-length cDNA clone CS0DH002YN05 of T cells (Fragment)	DLGAP5	discs, large (Drosophila) homolog-associated 5	Nucleus	phosphatase	0	0	0	2	0	0	0.17	0.32019
IPI00185326	Isoform 1 of JmjC domain-containing histone demethylation protein 1	KDM2B	lysine (K)-specific demethylase 2B	Nucleus	other	0	0	0	0	2	0	0.17	0.32019
IPI00217797	C1orf174 protein (Fragment)	C1orf174	chromosome 1 open reading frame 174	unknown	other	0	0	0	2	0	0	0.17	0.32019
IPI00217882	Sortilin precursor	SORT1	sortilin 1	Cytoplasm	transporter	0	0	0	2	0	0	0.17	0.32019
IPI00218775	FK506-binding protein 5	FKBP5	FK506 binding protein 5	Nucleus	enzyme	0	0	0	2	0	0	0.17	0.32019
IPI00218982	Breast cancer type 1 susceptibility protein	BRCA1	breast cancer 1, early onset	Nucleus	transcription regulator	0	0	0	2	0	0	0.17	0.32019
IPI00219352	cystathionine-beta-synthase	CBS	cystathionine-beta-synthase	Cytoplasm	enzyme	0	1	0	2	1	0	0.17	0.32019
IPI00234154	similar to RIKEN cDNA 5730467H21	ANKRD56	ankyrin repeat domain 56	Nucleus	transcription regulator	0	0	0	0	2	0	0.17	0.32019
IPI00247674	PREDICTED: hypothetical protein XP_292820	PALM3	paralemmin 3	unknown	other	0	0	0	0	2	0	0.17	0.32019
IPI00289584	RING finger protein 139	RNF139	ring finger protein 139	Cytoplasm	enzyme	0	0	0	2	0	0	0.17	0.32019
IPI00290547	E14 protein	NPAT	nuclear protein, ataxia-telangiectasia loci	Nucleus	transcription regulator	0	1	0	2	0	0	0.17	0.32019
IPI00291922	Proteasome subunit alpha type 5	PSMA5	proteasome (prosome, macropain) subunit alpha type 5	Cytoplasm	peptidase	1	1	1	1	2	0	0.17	0.32019
IPI00292000	Isoform 1 of U4/U6 small nuclear ribonucleoprotein Prp31	PRPF31	PRP31 pre-mRNA processing factor 31	Nucleus	other	0	1	1	2	1	1	0.17	0.32019
IPI00292326	Sperm-associated antigen 1	SPAG1	sperm associated antigen 1	Cytoplasm	other	0	0	0	2	0	0	0.17	0.32019
IPI00292537	nuclear factor kappa-B, subunit 1	NFKB1	nuclear factor of kappa light polypeptide chain epsilon 1	Nucleus	transcription regulator	0	0	0	2	0	0	0.17	0.32019
IPI00294962	Isoform 1 of SH3-domain kinase-binding protein 1	SH3KBP1	SH3-domain kinase binding protein 1	Cytoplasm	other	0	0	0	2	0	0	0.17	0.32019
IPI00298949	Cyclin G-associated kinase	GAK	cyclin G associated kinase	Nucleus	kinase	1	1	1	2	0	1	0.17	0.32019
IPI00299507	Condensin complex subunit 2	NCAPH	non-SMC condensin I complex, subunit H	Nucleus	other	0	0	0	2	0	0	0.17	0.32019
IPI00301465	hypothetical protein LOC55355	HUJRP	Holliday junction recognition protein	Nucleus	other	0	0	0	2	0	0	0.17	0.32019
IPI00304379	Ubiquitin carboxyl-terminal hydrolase 1	USP1	ubiquitin specific peptidase 1	Cytoplasm	peptidase	1	0	1	2	0	0	0.17	0.32019
IPI00304866	Tumor necrosis factor, alpha-induced protein 2	TNFAIP2	tumor necrosis factor, alpha-induced protein 2	Extracellular Space	other	0	0	0	2	0	0	0.17	0.32019
IPI00305305	Signal-induced proliferation-associated protein 1	SIPA1	signal-induced proliferation-associated 1	Cytoplasm	other	0	0	0	0	0	2	0.17	0.32019
IPI00306265	A kinase anchor protein 10, mitochondrial precursor	AKAP10	A kinase (PRKA) anchor protein 10	Cytoplasm	other	0	0	0	0	2	0	0.17	0.32019
IPI00328089	Kappa B and V(D)J recombination signal sequences binding protein 1	HIVEP3	human immunodeficiency virus type 1 enhancer binding protein 3	Nucleus	transcription regulator	0	0	0	0	2	0	0.17	0.32019
IPI00333420	Serine/threonine-protein kinase SRPK2	SRPK2	SRSF protein kinase 2	Nucleus	kinase	1	0	1	1	2	1	0.17	0.32019
IPI00384529	Hypothetical protein DKFZp547K059	COBL	cordons-bleu homolog (mouse)	unknown	other	0	0	0	2	0	0	0.17	0.32019
IPI00384569	Hypothetical protein KIAA1685	ASXL2	additional sex combs like 2 (Drosophila)	unknown	other	0	0	0	0	0	2	0.17	0.32019
IPI00386898	CDNA FLJ12346 fis, clone MAMMA1002297, highly similar to Hs	RABGAP1	RAB GTPase activating protein 1	Cytoplasm	other	0	0	0	2	0	0	0.17	0.32019
IPI00396145	FYVE finger-containing phosphoinositide kinase	PIKFYVE	phosphoinositide kinase, FYVE finger containing 1	Cytoplasm	kinase	0	0	0	0	0	2	0.17	0.32019
IPI00442150	CDNA FLJ16420 fis, clone BRACE3003053. (Fragment)	SETD2	SET domain containing 2	Cytoplasm	enzyme	0	0	0	2	1	0	0.17	0.32019
IPI00453473	Histone H4					0	0	0	2	0	1	0.17	0.32019
IPI00465132	Coatamer subunit epsilon	COPE	coatamer protein complex, subunit epsilon	Cytoplasm	transporter	0	0	0	2	0	1	0.17	0.32019
IPI00477825	Isoform 1 of Mesoderm induction early response protein 1	MIER1	mesoderm induction early response 1 homolog 1	Nucleus	other	0	0	0	2	0	0	0.17	0.32019
IPI00477982	ribosomal protein S6 kinase, 90kDa, polypeptide 1 isoform b	RPS6KA1	ribosomal protein S6 kinase, 90kDa, polypeptide 1	Cytoplasm	kinase	1	1	1	2	0	0	0.17	0.32019
IPI00478127	Transcription elongation factor A protein-like 3	TCEAL3	transcription elongation factor A (SII)-like 3	unknown	other	0	0	0	0	0	2	0.17	0.32019
IPI00550821	Isoform 1 of Cleavage and polyadenylation specificity factor 7	CPSF7	cleavage and polyadenylation specificity factor 7	Nucleus	other	1	0	1	1	1	2	0.17	0.32019
IPI00658093	61 kDa protein	MEN1	multiple endocrine neoplasia 1	Nucleus	transcription regulator	0	0	0	0	2	0	0.17	0.32019
IPI00719015	Isoform 2 of Dedicator of cytokinesis protein 9	DOCK9	dedicator of cytokinesis 9	Cytoplasm	other	0	0	0	0	2	1	0.17	0.32019
IPI00736672	Isoform 3 of Quaking protein	QKI	QKI, KH domain containing, RNA binding protein 1	Nucleus	other	0	0	0	2	0	1	0.17	0.32019
IPI00745557	ankyrin repeat domain protein 17 isoform a	ANKRD17	ankyrin repeat domain 17	unknown	other	0	1	0	0	2	0	0.17	0.32019
IPI00748891	26 kDa protein	FAM177A1	family with sequence similarity 177, member A1	unknown	other	1	1	0	2	0	0	0.17	0.32019
IPI00000690	Isoform 1 of Programmed cell death protein 8, mitochondrial precursor	AIFM1	apoptosis-inducing factor, mitochondrion-associated 1	Cytoplasm	enzyme	2	0	0	0	0	0	-0.17	0.34309

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00000692	Chloride intracellular channel protein 3	CLIC3	chloride intracellular channel 3	Nucleus	ion channel	0	2	0	0	0	0	-0.17	0.34309
IPI00000897	Probable helicase with zinc-finger domain	HELZ	helicase with zinc finger	Nucleus	enzyme	0	2	0	0	0	0	-0.17	0.34309
IPI00001893	Isoform A of Protocadherin-7 precursor	PCDH7	protocadherin 7	Plasma Membrane	other	2	0	0	0	0	0	-0.17	0.34309
IPI00005264	Isoform 2 of Plakophilin-2	PKP2 (include	plakophilin 2	Plasma Membrane	other	1	0	2	0	0	0	-0.17	0.34309
IPI00006280	SREBP cleavage-activating protein	SCAP	SREBF chaperone	Cytoplasm	other	0	2	0	0	0	0	-0.17	0.34309
IPI00006900	Something about silencing protein 10	UTP3	UTP3, small subunit (SSU) processome co	Nucleus	other	2	1	1	1	1	1	-0.17	0.34309
IPI00007208	Probable ATP-dependent RNA helicase DDX41	DDX41	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	enzyme	2	0	0	0	1	1	-0.17	0.34309
IPI00010486	Isoform 1 of Hermansky-Pudlak syndrome 5 protein	HPS5	Hermansky-Pudlak syndrome 5	Cytoplasm	other	0	0	2	0	0	0	-0.17	0.34309
IPI00011118	Ribonucleoside-diphosphate reductase M2 subunit	RRM2	ribonucleotide reductase M2	Nucleus	enzyme	1	2	0	0	0	0	-0.17	0.34309
IPI00011938	Isoform 1 of Adenylate cyclase type 6	ADCY6	adenylate cyclase 6	Plasma Membrane	enzyme	2	0	0	0	0	0	-0.17	0.34309
IPI00012998	Isoform 1 of Cleavage and polyadenylation specificity factor 6	CPSF6	cleavage and polyadenylation specific fac	Nucleus	other	2	1	0	1	0	0	-0.17	0.34309
IPI00013905	5'-AMP-activated protein kinase subunit beta-2	PRKAB2	protein kinase, AMP-activated, beta 2 nor	Cytoplasm	kinase	2	0	0	1	0	0	-0.17	0.34309
IPI00016387	pre-mRNA cleavage complex II protein Pcf11	PCF11 (huma	PCF11, cleavage and polyadenylation fact	Nucleus	other	0	0	2	0	1	1	-0.17	0.34309
IPI00019004	Translocation protein SEC62	SEC62 (includ	SEC62 homolog (S. cerevisiae)	Cytoplasm	transporter	2	0	0	0	0	0	-0.17	0.34309
IPI00020567	Rho-GTPase-activating protein 1	ARHGAP1	Rho GTPase activating protein 1	Cytoplasm	other	1	1	2	0	1	1	-0.17	0.34309
IPI00021167	Isoform 1 of Interferon-inducible double stranded RNA-depende	PRKRA	protein kinase, interferon-inducible doubl	Cytoplasm	other	0	2	0	0	0	0	-0.17	0.34309
IPI00021701	KIAA0433 protein (Fragment)	PIIP5K2	diphosphoinositol pentakisphosphate kin	Cytoplasm	other	2	0	1	0	0	0	-0.17	0.34309
IPI00022095	paternally expressed 10 isoform RF1/2	PEG10	paternally expressed 10	Nucleus	other	0	2	0	0	0	0	-0.17	0.34309
IPI00025202	Isoform 2 of Formin-like 1 protein	FMNL1	formin-like 1	Cytoplasm	other	2	0	0	0	0	0	-0.17	0.34309
IPI00026625	Isoform 1 of Nuclear pore complex protein Nup155	NUP155	nucleoporin 155kDa	Nucleus	transporter	0	2	1	0	0	0	-0.17	0.34309
IPI00026673	Isoform 1 of Homeobox protein cut-like 1	CUX1	cut-like homeobox 1	Nucleus	transcription regulator	0	0	2	1	0	0	-0.17	0.34309
IPI00029734	Isoform 4 of M-phase inducer phosphatase 2	CDC25B	cell division cycle 25 homolog B (S. pom	Nucleus	phosphatase	2	0	0	0	0	0	-0.17	0.34309
IPI00069694	Isoform 1 of General transcription factor II-I repeat domain-cont	GTF2IRD1	GTF2I repeat domain containing 1	Nucleus	transcription regulator	0	0	2	0	0	0	-0.17	0.34309
IPI00075080	Isoform B of Oxysterol-binding protein-related protein 1	OSBPL1A	oxysterol binding protein-like 1A	Cytoplasm	other	2	0	0	0	0	0	-0.17	0.34309
IPI00095032	PREDICTED: hypothetical protein LOC146439	CCDC64B	coiled-coil domain containing 64B	Nucleus	other	2	1	0	0	0	0	-0.17	0.34309
IPI00100041	Isoform 1 of Lethal(3)malignant brain tumor-like 2 protein	L3MBTL2	l(3)mbt-like 2 (Drosophila)	Nucleus	transcription regulator	0	0	2	0	0	0	-0.17	0.34309
IPI00100798	CASP8-associated protein 2	CASP8AP2	caspase 8 associated protein 2	Nucleus	transcription regulator	0	2	0	0	0	0	-0.17	0.34309
IPI00102313	steroid receptor RNA activator 1	SRA1	steroid receptor RNA activator 1	Nucleus	transcription regulator	0	0	2	0	0	0	-0.17	0.34309
IPI00103731	Jun dimerization protein 2	JDP2	Jun dimerization protein 2	Nucleus	transcription regulator	0	2	0	0	0	0	-0.17	0.34309
IPI00152658	Serine/threonine-protein kinase Nek7	NEK7	NIMA (never in mitosis gene a)-related ki	Nucleus	kinase	0	2	0	0	0	0	-0.17	0.34309
IPI00162088	Isoform 1 of TNF receptor-associated factor 4	TRAF4	TNF receptor-associated factor 4	Cytoplasm	other	0	0	2	0	0	0	-0.17	0.34309
IPI00166153	KIAA0082	FTSJD2	FtsJ methyltransferase domain containing	unknown	enzyme	0	2	1	0	0	0	-0.17	0.34309
IPI00167909	EML3 protein	EML3	echinoderm microtubule associated prote	unknown	other	0	2	0	0	0	0	-0.17	0.34309
IPI00168350	CDNA FLJ90669 fis, clone PLACE1005519, moderately similar to	MST4	serine/threonine protein kinase MST4	Nucleus	kinase	0	0	2	0	0	0	-0.17	0.34309
IPI00170979	Isoform 2 of Ena/VASP-like protein	EVL	Enah/Vasp-like	Cytoplasm	other	2	0	0	0	0	0	-0.17	0.34309
IPI00172636	calcium/calmodulin-dependent protein kinase II delta isoform 1	CAMK2D	calcium/calmodulin-dependent protein ki	Cytoplasm	kinase	2	0	0	0	0	0	-0.17	0.34309
IPI00178352	Isoform 1 of Filamin-C	FLNC	filamin C, gamma	Cytoplasm	other	0	2	1	0	1	1	-0.17	0.34309
IPI00179016	Histone-lysine N-methyltransferase, H3 lysine-4 specific SET1	SETD1A	SET domain containing 1A	Nucleus	ion channel	0	1	2	0	0	0	-0.17	0.34309
IPI00179757	Kinesin-like protein KIF1C	KIF1C	kinesin family member 1C	Cytoplasm	other	0	0	2	0	0	0	-0.17	0.34309
IPI00180266	WW domain-containing transcription regulator protein 1	WWTR1	WW domain containing transcription reg	Nucleus	transcription regulator	0	2	0	0	0	0	-0.17	0.34309
IPI00180292	Isoform 5 of Brain-specific angiogenesis inhibitor 1-associated pr	BAIAP2	BAI1-associated protein 2	Plasma Membrane	kinase	2	0	0	0	0	0	-0.17	0.34309
IPI00186008	START domain containing 10	STAR10	StAR-related lipid transfer (START) domai	Cytoplasm	other	0	0	0	0	0	0	-0.17	0.34309
IPI00215963	hypothetical protein LOC23199	KIAA0182	KIAA0182	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00216587	40S ribosomal protein S8	RPS8	ribosomal protein S8	Cytoplasm	other	0	2	0	0	1	0	-0.17	0.34309
IPI00217413	DEAH (Asp-Glu-Ala-His) box polypeptide 29	DHX29	DEAH (Asp-Glu-Ala-His) box polypeptide	Cytoplasm	enzyme	0	2	0	0	1	0	-0.17	0.34309
IPI00218648	Isoform III of AT-rich interactive domain-containing protein 4A	ARID4A	AT rich interactive domain 4A (RBP1-like)	Nucleus	transcription regulator	0	1	2	1	0	0	-0.17	0.34309
IPI00220844	Isoform 2 of Solute carrier family 12 member 2	SLC12A2	solute carrier family 12 (sodium/potassiur	Plasma Membrane	transporter	0	0	2	0	0	0	-0.17	0.34309
IPI00289837	PREDICTED: hypothetical protein LOC114800	CCDC85A	coiled-coil domain containing 85A	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00290562	nuclear factor, interleukin 3 regulated	NFIL3	nuclear factor, interleukin 3 regulated	Nucleus	transcription regulator	0	0	2	0	0	0	-0.17	0.34309
IPI00291783	Gem-associated protein 5	GEMIN5	gem (nuclear organelle) associated protei	Nucleus	other	1	2	1	0	0	0	-0.17	0.34309
IPI00291796	BTB (POZ) domain containing 12	SLX4 (include	SLX4 structure-specific endonuclease sub	Nucleus	other	0	2	0	0	0	0	-0.17	0.34309
IPI00294435	step II splicing factor SLU7	SLU7 (include	SLU7 splicing factor homolog (S. cerevisi	Nucleus	enzyme	0	0	2	0	0	0	-0.17	0.34309
IPI00297251	MGRN1 protein	MGRN1	mahogunin, ring finger 1	Cytoplasm	enzyme	2	0	1	0	1	0	-0.17	0.34309
IPI00297910	Tumor-associated calcium signal transducer 2 precursor	TACSTD2	tumor-associated calcium signal transduc	Plasma Membrane	other	1	2	0	0	1	1	-0.17	0.34309

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00299033	Importin alpha-3 subunit	KPNA3	karyopherin alpha 3 (importin alpha 4)	Nucleus	transporter	0	0	2	0	0	0	-0.17	0.34309
IPI00306929	Isoform 1 of Myosin-18B	MYO18B	myosin XVIIIIB	Cytoplasm	other	0	2	0	0	0	0	-0.17	0.34309
IPI00329573	Isoform Long of Collagen alpha-1(XII) chain precursor	COL12A1	collagen, type XII, alpha 1	Extracellular Space	other	0	2	0	0	0	0	-0.17	0.34309
IPI00374268	Isoform 2 of Bromodomain-containing protein 9	BRD9	bromodomain containing 9	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00383694	D13S824E locus	MTMR6	myotubularin related protein 6	Cytoplasm	phosphatase	0	0	2	0	0	0	-0.17	0.34309
IPI00385022	DEAH (Asp-Glu-Ala-His) box polypeptide 34 isoform 1	DHX34	DEAH (Asp-Glu-Ala-His) box polypeptide	unknown	enzyme	2	1	1	0	0	0	-0.17	0.34309
IPI00385511	Isoform 1 of Trinucleotide repeat-containing 6B protein	TNRC6B	trinucleotide repeat containing 6B	unknown	other	1	2	0	0	0	1	-0.17	0.34309
IPI00386208	Gastric-associated differentially-expressed protein YA61P					1	1	2	1	1	1	-0.17	0.34309
IPI00396057	Isoform C of Protein C9orf10	FAM120A	family with sequence similarity 120A	Cytoplasm	other	2	0	0	0	0	1	-0.17	0.34309
IPI00396071	Isoform 1 of Retinoid X receptor-interacting protein 110	UIMC1	ubiquitin interaction motif containing 1	Nucleus	other	2	0	0	0	0	0	-0.17	0.34309
IPI00397015	Novel protein	AHDC1	AT hook, DNA binding motif, containing	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00397700	Isoform 2 of PHD finger protein 6	PHF6	PHD finger protein 6	Nucleus	other	0	0	2	0	0	0	-0.17	0.34309
IPI00398012	Fragile site-associated protein	KIAA1109	KIAA1109	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00410360	Isoform 2 of Protein C14orf120	NGDN	neuroguidin, EIF4E binding protein	Nucleus	other	0	0	2	0	1	0	-0.17	0.34309
IPI00411356	Vacuolar sorting protein 4a	VPS4A	vacuolar protein sorting 4 homolog A (S. Cytoplasm		other	0	2	0	0	0	0	-0.17	0.34309
IPI00413611	DNA topoisomerase 1	TOP1	topoisomerase (DNA) I	Nucleus	enzyme	2	1	0	1	0	1	-0.17	0.34309
IPI00413942	Isoform 1 of GRIP1-associated protein 1					2	0	1	0	0	0	-0.17	0.34309
IPI00438170	Isoform 1 of Sorting nexin-12	SNX12	sorting nexin 12	unknown	transporter	2	1	0	1	0	1	-0.17	0.34309
IPI00444452	Isoform 1 of Putative helicase MOV-10	MOV10	Mov10, Moloney leukemia virus 10, homc	Nucleus	enzyme	0	1	2	0	0	0	-0.17	0.34309
IPI00448465	Isoform 1 of Ankyrin repeat domain-containing protein 12	ANKRD12	ankyrin repeat domain 12	Nucleus	other	2	0	0	0	0	0	-0.17	0.34309
IPI00464981	Hypothetical protein gene +108	ITFG3	integrin alpha FG-GAP repeat containing	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00464999	Hypothetical protein DKFZp686D22141	HEATR6	HEAT repeat containing 6	unknown	other	0	0	2	0	0	0	-0.17	0.34309
IPI00470478	374 kDa protein	RNF213	ring finger protein 213	Plasma Membrane	other	1	2	1	1	1	1	-0.17	0.34309
IPI00477401	F-box/WD-repeat protein 9	FBXW9	F-box and WD repeat domain containing	unknown	other	0	2	0	0	0	0	-0.17	0.34309
IPI00604590	NME2 protein					1	1	2	1	1	1	-0.17	0.34309
IPI00640818	Neuropathy target esterase	PNPLA6	patatin-like phospholipase domain contai	Cytoplasm	enzyme	0	0	2	0	0	0	-0.17	0.34309
IPI00646469	WDR26 protein (Fragment)	WDR26	WD repeat domain 26	Cytoplasm	other	2	0	0	0	0	0	-0.17	0.34309
IPI00646782	Hypothetical protein FAM73B	FAM73B	family with sequence similarity 73, memb	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00744888	IMP dehydrogenase/GMP reductase family protein	RNF219	ring finger protein 219	unknown	other	2	0	0	0	0	0	-0.17	0.34309
IPI00003406	Drebrin	DBN1	drebrin 1	Cytoplasm	other	2	0	1	3	0	0	0.16	0.34516
IPI00005277	Cell cycle checkpoint control protein RAD9A	RAD9A	RAD9 homolog A (S. pombe)	Nucleus	enzyme	0	2	0	0	3	0	0.16	0.34516
IPI00010241	WW domain-containing adaptor with a coiled-coil region, isoform	WAC	WW domain containing adaptor with coil	Nucleus	other	2	1	0	0	3	0	0.16	0.34516
IPI00014264	Centaurin-beta 2	ACAP2	ArfGAP with coiled-coil, ankyrin repeat ar	Nucleus	other	2	1	1	2	0	2	0.16	0.34516
IPI00014456	Striatin	STRN	striatin, calmodulin binding protein	Cytoplasm	other	2	0	0	2	0	2	0.16	0.34516
IPI00015793	Isoform 1 of Telomerase-binding protein EST1A	SMG6	smg-6 homolog, nonsense mediated mR	Nucleus	enzyme	0	0	2	0	2	2	0.16	0.34516
IPI00023023	OTTHUMP00000030182	C20orf30	chromosome 20 open reading frame 30	unknown	other	0	0	2	2	0	2	0.16	0.34516
IPI00024425	Putative eukaryotic translation initiation factor 3 subunit	KIAA0664	KIAA0664	Cytoplasm	translation regulator	2	1	1	2	2	1	0.16	0.34516
IPI00029484	Isoform 1 of Zinc finger MYM-type protein 3	ZMYM3	zinc finger, MYM-type 3	Nucleus	other	0	0	2	0	0	3	0.16	0.34516
IPI00063219	Hypothetical protein LOC92345	NAF1	nuclear assembly factor 1 homolog (S. ce	Cytoplasm	other	0	0	2	3	0	0	0.16	0.34516
IPI00072534	smooth muscle cell associated protein-1 isoform 2	UNC45A	unc-45 homolog A (C. elegans)	Plasma Membrane	other	1	1	2	1	2	2	0.16	0.34516
IPI00140420	Staphylococcal nuclease domain-containing protein 1	SND1	staphylococcal nuclease and tudor domai	Nucleus	enzyme	1	2	1	1	2	2	0.16	0.34516
IPI00170867	Isoform 1 of Death domain-associated protein 6	DAXX	death-domain associated protein	Nucleus	transcription regulator	2	0	0	0	3	0	0.16	0.34516
IPI00299635	Baculoviral IAP repeat-containing protein 6	BIRC6	baculoviral IAP repeat containing 6	Cytoplasm	enzyme	0	1	2	2	1	2	0.16	0.34516
IPI00329200	Importin beta-3	IPO5	importin 5	Nucleus	transporter	1	1	2	2	1	2	0.16	0.34516
IPI00386808	HDAC7A protein	HDAC7	histone deacetylase 7	Nucleus	transcription regulator	2	0	0	0	0	3	0.16	0.34516
IPI00401611	PREDICTED: RW1 protein isoform 1					0	0	2	0	2	2	0.16	0.34516
IPI00470901	215 kDa protein					2	0	0	2	0	2	0.16	0.34516
IPI00013788	HIV TAT specific factor 1	HTATSF1	HIV-1 Tat specific factor 1	Nucleus	transcription regulator	42	36	34	45	35	34	0.16	0.37110
IPI00001754	Junctional adhesion molecule A precursor	F11R	F11 receptor	Plasma Membrane	other	1	2	2	2	0	0	-0.16	0.37116
IPI00005904	Probable ATP-dependent RNA helicase DDX20	DDX20	DEAD (Asp-Glu-Ala-Asp) box polypeptide	Nucleus	transcription regulator	3	1	0	2	0	0	-0.16	0.37116
IPI00009949	Proteasome inhibitor PI31 subunit	PSMF1	proteasome (prosome, macropain) inhibit	Cytoplasm	other	0	2	2	0	0	2	-0.16	0.37116
IPI00012837	Kinesin heavy chain	KIF5B	kinesin family member 5B	Cytoplasm	other	1	2	2	1	2	1	-0.16	0.37116
IPI00017504	Protein C9orf40	C9orf40	chromosome 9 open reading frame 40	unknown	other	0	2	2	0	0	2	-0.16	0.37116
IPI00028618	Methylated-DNA--protein-cysteine methyltransferase	MGMT	O-6-methylguanine-DNA methyltransfera	Nucleus	enzyme	2	2	0	2	0	0	-0.16	0.37116

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00030976	Isoform 1 of High-affinity cAMP-specific and IBMX-insensitive 3',5'-cyclic nucleotide phosphodiesterase	PDE8A	phosphodiesterase 8A	Cytoplasm	enzyme	0	1	3	0	0	2	-0.16	0.37116
IPI00059366	H2A histone family, member Y isoform 2	H2AFY	H2A histone family, member Y	Nucleus	other	2	2	1	1	1	2	-0.16	0.37116
IPI00099463	Sphingosine-1-phosphate lyase 1	SGPL1	sphingosine-1-phosphate lyase 1	Cytoplasm	enzyme	3	0	0	2	1	0	-0.16	0.37116
IPI00177381	hypothetical protein LOC57703	CWC22	CWC22 spliceosome-associated protein h	Nucleus	other	2	2	1	2	0	0	-0.16	0.37116
IPI00185769	Isoform Beta of ATP-dependent DNA helicase Q5	RECQL5	RecQ protein-like 5	Nucleus	enzyme	2	0	2	0	0	2	-0.16	0.37116
IPI00220845	Isoform Beta-4A of Integrin beta-4 precursor	ITGB4	integrin, beta 4	Plasma Membrane	transmembrane receptor	3	1	1	2	1	1	-0.16	0.37116
IPI00290337	Epidermal growth factor receptor kinase substrate 8	EP8	epidermal growth factor receptor pathwa	Plasma Membrane	peptidase	1	2	2	1	0	2	-0.16	0.37116
IPI00297191	CRSP complex subunit 2	MED14	mediator complex subunit 14	Nucleus	transcription regulator	0	0	3	1	1	2	-0.16	0.37116
IPI00337465	Isoform P of Kinesin light chain 1	KLC1	kinesin light chain 1	Cytoplasm	other	0	2	2	1	2	1	-0.16	0.37116
IPI00396015	acetyl-Coenzyme A carboxylase alpha isoform 1	ACACA	acetyl-CoA carboxylase alpha	Cytoplasm	enzyme	2	1	2	2	0	0	-0.16	0.37116
IPI00479669	hypothetical protein LOC23074 isoform a	UHRF1BP1L	UHRF1 binding protein 1-like	unknown	other	0	2	2	0	0	2	-0.16	0.37116
IPI00735918	PREDICTED: similar to fat3					2	0	2	0	0	2	-0.16	0.37116
IPI00000875	Elongation factor 1-gamma	EEF1G	eukaryotic translation elongation factor 1	Cytoplasm	translation regulator	2	1	2	1	3	2	0.16	0.37156
IPI00007764	hematological and neurological expressed 1 isoform 1	HN1	hematological and neurological expressec	Nucleus	other	2	2	0	2	2	2	0.16	0.37156
IPI00014266	Isoform 1 of Bromodomain-containing protein 3	BRD3	bromodomain containing 3	Nucleus	kinase	0	3	0	3	0	2	0.16	0.37156
IPI00026497	Isoform 1 of Poly (ADP-ribose) polymerase 2	PARP2	poly (ADP-ribose) polymerase 2	Nucleus	enzyme	3	0	0	2	0	3	0.16	0.37156
IPI00033022	Isoform 1 of Dynamin-2	DNM2	dynamin 2	Plasma Membrane	enzyme	2	2	1	3	2	1	0.16	0.37156
IPI00044583	Isoform 1 of Transcriptional-regulating factor 1	TRERF1	transcriptional regulating factor 1	Nucleus	transcription regulator	0	3	0	2	0	3	0.16	0.37156
IPI00171252	enhancer of zeste 2 isoform b	EZH2	enhancer of zeste homolog 2 (Drosophila)	Nucleus	transcription regulator	0	2	2	3	0	2	0.16	0.37156
IPI00254338	LOC162427 protein	FAM134C	family with sequence similarity 134, mem	unknown	other	0	0	3	0	0	4	0.16	0.37156
IPI00290032	Transient receptor potential cation channel subfamily M member	TRPM7	transient receptor potential cation channe	Plasma Membrane	kinase	0	0	3	0	0	4	0.16	0.37156
IPI00299524	Condensin complex subunit 1	NCAPD2	non-SMC condensin I complex, subunit D	Nucleus	other	0	3	0	2	2	2	0.16	0.37156
IPI00413659	Isoform 2 of Alkylated repair protein alkB homolog 5	ALKBH5	alkB, alkylation repair homolog 5 (E. coli)	unknown	other	2	2	0	4	0	0	0.16	0.37156
IPI00472044	Isoform 1 of GTPase-activating Rap/Ran-GAP domain-like 1	RALGAPA1	Ral GTPase activating protein, alpha subu	Cytoplasm	other	2	2	0	2	0	3	0.16	0.37156
IPI00001159	GCN1-like protein 1	GCN1L1	GCN1 general control of amino-acid synt	Cytoplasm	translation regulator	2	3	0	1	2	2	-0.16	0.38465
IPI00019451	MRG-binding protein	C20orf20	chromosome 20 open reading frame 20	Nucleus	other	2	2	2	0	0	3	-0.16	0.38465
IPI00106495	Condensin complex subunit 3	NCAPG	non-SMC condensin I complex, subunit G	Nucleus	other	0	3	2	2	2	1	-0.16	0.38465
IPI00215877	Isoform Short of Adenomatous polyposis coli protein	APC	adenomatous polyposis coli	Nucleus	enzyme	0	3	2	0	0	3	-0.16	0.38465
IPI00220302	Isoform 1 of Wilms' tumor 1-associated protein	WTAP	Wilms tumor 1 associated protein	Nucleus	other	3	2	0	0	2	2	-0.16	0.38465
IPI00221093	40S ribosomal protein S17					2	2	2	1	2	2	-0.16	0.38465
IPI00410485	Serine/threonine-protein kinase TAO3	TAOK3	TAO kinase 3	Cytoplasm	kinase	3	1	2	3	0	0	-0.16	0.38465
IPI00413492	calpastatin isoform b	CAST	calpastatin	Cytoplasm	peptidase	1	3	2	2	1	2	-0.16	0.38465
IPI00440932	Isoform 1 of ADAM 9 precursor	ADAM9	ADAM metallopeptidase domain 9	Plasma Membrane	peptidase	2	3	0	0	0	3	-0.16	0.38465
IPI00556594	Isoform 1 of Zinc finger CCHC domain-containing protein 8	ZCCHC8	zinc finger, CCHC domain containing 8	Nucleus	other	2	2	2	2	2	0	-0.16	0.38465
IPI00296432	Isoform 1 of IWS1-like protein	IWS1	IWS1 homolog (S. cerevisiae)	Nucleus	enzyme	51	45	55	58	45	50	0.15	0.38500
IPI00010544	Isoform 1 of Tight junction-associated protein 1	TJAP1	tight junction associated protein 1 (peripl	Plasma Membrane	other	4	0	0	5	0	0	0.15	0.38503
IPI00023856	Peregrin	BRPF1	bromodomain and PHD finger containing	Nucleus	transporter	2	0	3	3	2	2	0.15	0.38503
IPI00096972	Isoform 1 of Histone-lysine N-methyltransferase, H3 lysine-9 spe	EHMT2	euchromatic histone-lysine N-methyltrans	Nucleus	transcription regulator	2	2	2	0	3	3	0.15	0.38503
IPI00157836	IQ motif and WD repeats 1 isoform a	DCAF6	DDB1 and CUL4 associated factor 6	Nucleus	transcription regulator	2	2	2	3	0	3	0.15	0.38503
IPI00185371	CDNA FLJ40432 fis, clone TESTI2039227	CCNYL1	cyclin Y-like 1	unknown	other	4	0	0	0	5	0	0.15	0.38503
IPI00304493	serum response factor binding protein 1	SRFBP1	serum response factor binding protein 1	Nucleus	other	2	3	0	0	3	3	0.15	0.38503
IPI00410618	KIAA1143	KIAA1143	unknown	unknown	other	2	2	2	3	2	2	0.15	0.38503
IPI00425409	Isoform 4 of Kinesin family member 21A	KIF21A	kinesin family member 21A	Cytoplasm	other	2	3	0	2	3	2	0.15	0.38503
IPI00002255	Lipopolysaccharide-responsive and beige-like anchor protein	LRBA	LPS-responsive vesicle trafficking, beach	Cytoplasm	other	0	2	4	1	1	4	-0.15	0.39175
IPI00005605	Isoform 1 of Protein NDRG3	NDRG3	NDRG family member 3	Cytoplasm	other	3	2	2	2	2	2	-0.15	0.39175
IPI00099311	Isoform 1 of tRNA	TRMT6	tRNA methyltransferase 6 homolog (S. ce	unknown	other	2	3	2	3	2	1	-0.15	0.39175
IPI00256859	Microtubule-actin crosslinking factor 1	MACF1	microtubule-actin crosslinking factor 1	Cytoplasm	enzyme	2	2	3	2	2	2	-0.15	0.39175
IPI00290071	H326	DCAF8	DDB1 and CUL4 associated factor 8	unknown	other	0	3	3	4	0	0	-0.15	0.39175
IPI00293331	Ribonucleases P/MRP protein subunit POP1	POP1	(includi processing of precursor 1, ribonuclease P	Nucleus	enzyme	3	3	0	0	2	3	-0.15	0.39175
IPI00294653	Protein C21orf5	DOPEY2	dopey family member 2	Cytoplasm	other	0	3	3	3	2	1	-0.15	0.39175
IPI00334126	Ral GEF with PH domain and SH3 binding motif 2, isoform 2	RALGPS2	Ral GEF with PH domain and SH3 binding	unknown	other	0	4	2	0	2	3	-0.15	0.39175
IPI00002335	Huntingtin	HTT	huntingtin	Cytoplasm	transcription regulator	2	2	3	2	3	3	0.15	0.39198
IPI00013107	Isoform 1 of Splicing factor, arginine/serine-rich 16	CLASRP	CLK4-associated serine/arginine rich prot	Nucleus	other	0	3	3	0	5	2	0.15	0.39198
IPI00016932	inositol polyphosphate phosphatase-like 1	INPPL1	inositol polyphosphate phosphatase-like	Cytoplasm	phosphatase	3	2	2	2	4	2	0.15	0.39198

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00297593	Ubiquitin-specific proteinase 34	USP34	ubiquitin specific peptidase 34	unknown	peptidase	2	0	4	3	0	4	0.15	0.39198
IPI00021888	Zinc transporter SLC39A7	SLC39A7	solute carrier family 39 (zinc transporter),	Plasma Membrane	transporter	5	2	1	4	2	0	-0.15	0.40053
IPI00171176	Isoform 1 of Pantothenate kinase 2, mitochondrial precursor	PANK2	pantothenate kinase 2	Cytoplasm	kinase	3	3	2	0	3	3	-0.15	0.40053
IPI00376404	fetal Alzheimer antigen isoform 2	BPTF	bromodomain PHD finger transcription factor	Nucleus	transcription regulator	4	1	3	1	3	3	-0.15	0.40053
IPI00001738	Nuclear pore complex protein Nup88	NUP88	nucleoporin 88kDa	Nucleus	transporter	2	3	3	5	3	0	0.14	0.40084
IPI00016639	Protein kinase C iota type	PRKCI	protein kinase C, iota	Cytoplasm	kinase	3	4	0	5	0	3	0.14	0.40084
IPI00026337	Isoform 1 of Ran-binding protein 3	RANBP3	RAN binding protein 3	Nucleus	other	2	3	3	0	4	4	0.14	0.40084
IPI00251559	Ubiquitin-protein ligase BRE1A	RNF20	ring finger protein 20	Nucleus	enzyme	2	2	4	3	2	4	0.14	0.40084
IPI00640055	Novel protein	LARP4B	La ribonucleoprotein domain family, member 4	Cytoplasm	other	0	3	4	3	3	3	0.14	0.40084
IPI00738937	PREDICTED: hypothetical protein LOC57479 isoform 1	PRR12	proline rich 12	unknown	other	0	4	3	4	3	2	0.14	0.40084
IPI00015618	Hypothetical protein FLJ20291	CWC25	(includes CWC25 spliceosome-associated protein h)	unknown	other	3	2	4	0	3	4	-0.14	0.40828
IPI00055954	WD-repeat protein 43	WDR43	WD repeat domain 43	Nucleus	other	5	3	0	3	3	2	-0.14	0.40828
IPI00220594	Isoform 4 of Intersectin-1	ITSN1	intersectin 1 (SH3 domain protein)	Cytoplasm	other	3	3	3	3	2	3	-0.14	0.40828
IPI00410067	Isoform 1 of Zinc finger CCCH type antiviral protein 1	ZC3HAV1	zinc finger CCCH-type, antiviral 1	Plasma Membrane	other	3	3	3	1	3	4	-0.14	0.40828
IPI00023532	Hypothetical protein DKFZp564A2416	SPATS2L	spermatogenesis associated, serine-rich 2	unknown	other	3	4	2	2	5	3	0.14	0.40842
IPI00102059	Kinase-like protein	SCYL1	SCY1-like 1 (S. cerevisiae)	Cytoplasm	kinase	3	2	4	3	4	3	0.14	0.40842
IPI00218729	Isoform 2 of Disks large homolog 1	DLG1	discs, large homolog 1 (Drosophila)	Plasma Membrane	kinase	2	4	3	3	3	4	0.14	0.40842
IPI00006752	Isoform 1 of Mitogen-activated protein kinase kinase kinase kinase	MAP4K4	mitogen-activated protein kinase kinase kinase kinase	Cytoplasm	kinase	3	3	4	3	2	4	-0.14	0.41412
IPI00032826	Hsc70-interacting protein	STI3	suppression of tumorigenicity 13 (colon c)	Cytoplasm	other	4	2	4	1	4	4	-0.14	0.41412
IPI00064382	CDNA FLJ14681 fis, clone NT2RP2004270, weakly similar to PROTMEM87B	TMEM87B	transmembrane protein 87B	unknown	other	4	2	4	5	0	3	-0.14	0.41412
IPI00000015	Splicing factor, arginine/serine-rich 4	SRSF4	serine/arginine-rich splicing factor 4	Nucleus	other	4	5	0	0	5	5	0.13	0.41439
IPI00012885	Isoform 1 of Focal adhesion kinase 1	PTK2	(includes PTK2 protein tyrosine kinase 2)	Cytoplasm	kinase	4	3	3	4	4	3	0.13	0.41439
IPI00018914	Tyrosine-protein phosphatase non-receptor type 14	PTPN14	protein tyrosine phosphatase, non-receptor type 14	Cytoplasm	phosphatase	3	3	4	4	4	3	0.13	0.41439
IPI00019848	Isoform 1 of Host cell factor	HCFC1	host cell factor C1 (VP16-accessory protein)	Nucleus	transcription regulator	2	5	3	5	3	3	0.13	0.41439
IPI00409607	Novel protein	CAMSAP2	calmodulin regulated spectrin-associated protein 2	unknown	other	5	4	0	6	4	0	0.13	0.41439
IPI00477763	Serine/threonine-protein kinase MRCK beta	CDC42BPB	CDC42 binding protein kinase beta (DMP)	Cytoplasm	kinase	4	4	2	3	4	4	0.13	0.41439
IPI00001364	Isoform A of GC-rich sequence DNA-binding factor homolog	GCFC1	GC-rich sequence DNA-binding factor 1	Nucleus	other	3	4	4	5	4	0	-0.13	0.42094
IPI00031627	DNA-directed RNA polymerase II largest subunit	POLR2A	polymerase (RNA) II (DNA directed) polypeptide 2	Nucleus	enzyme	4	2	5	3	4	3	-0.13	0.42094
IPI00103483	Negative elongation factor B	COBRA1	cofactor of BRCA1	Nucleus	other	4	3	4	3	4	3	-0.13	0.42094
IPI00451483	PREDICTED: similar to ribosomal protein S27					3	5	3	5	3	2	-0.13	0.42094
IPI00019906	Isoform 2 of Basigin precursor	BSG	(includes basigin (Ok blood group))	Plasma Membrane	transporter	3	4	4	5	3	4	0.13	0.42116
IPI00023283	Isoform 2 of Titin	TTN	(includes titin)	Cytoplasm	kinase	2	4	5	4	5	3	0.13	0.42116
IPI00025310	Zinc finger protein 217	ZNF217	zinc finger protein 217	Nucleus	transcription regulator	5	3	3	7	0	4	0.13	0.42116
IPI00106955	Hypothetical protein LOC144097	C11orf84	chromosome 11 open reading frame 84	unknown	other	4	3	4	4	5	3	0.13	0.42116
IPI00152503	Protein dextex 3-like protein	DTX3L	deltex 3-like (Drosophila)	Cytoplasm	enzyme	5	3	3	5	3	4	0.13	0.42116
IPI00181617	RNA-binding protein 34	RBM34	RNA binding motif protein 34	Nucleus	other	5	4	2	3	5	4	0.13	0.42116
IPI00218240	Wolf-Hirschhorn syndrome candidate 1 protein isoform 1	WHSC1	Wolf-Hirschhorn syndrome candidate 1	Nucleus	enzyme	4	4	3	4	4	4	0.13	0.42116
IPI00017443	Absent in melanoma 1-like	AIM1L	absent in melanoma 1-like	unknown	other	5	6	0	4	3	4	-0.13	0.42656
IPI00306280	Density-regulated protein	DENR	density-regulated protein	unknown	other	4	3	5	4	4	3	-0.13	0.42656
IPI00737498	PREDICTED: similar to MAX-interacting protein isoform 5					6	3	3	4	4	3	-0.13	0.42656
IPI00006684	Isoform 4 of Apoptosis inhibitor 5					8	3	0	7	4	2	0.13	0.42661
IPI00074148	dystonin isoform 1	DST	dystonin	Plasma Membrane	other	4	4	4	4	5	4	0.13	0.42661
IPI00106928	protein tyrosine phosphatase, non-receptor type 2	PTPN2	protein tyrosine phosphatase, non-receptor type 2	Cytoplasm	phosphatase	4	4	4	5	6	2	0.13	0.42661
IPI00396370	Isoform 1 of Eukaryotic translation initiation factor 3 subunit 9	EIF3B	eukaryotic translation initiation factor 3, subunit 9	Cytoplasm	translation regulator	5	3	4	4	4	5	0.13	0.42661
IPI00005614	Isoform Long of Spectrin beta chain, brain 1	SPTBN1	spectrin, beta, non-erythrocytic 1	Plasma Membrane	other	5	4	4	4	4	4	-0.13	0.43080
IPI00009471	WD-repeat protein 3	WDR3	WD repeat domain 3	Cytoplasm	other	5	4	4	4	3	5	-0.13	0.43080
IPI00027035	XPA-binding protein 1	GPN1	GPN-loop GTPase 1	Nucleus	transcription regulator	4	4	5	5	3	4	-0.13	0.43080
IPI00003965	Ubiquitin carboxyl-terminal hydrolase 7	USP7	ubiquitin specific peptidase 7 (herpes virus)	Nucleus	peptidase	3	4	6	4	4	6	0.13	0.43105
IPI00012340	Splicing factor, arginine/serine-rich 9	SRSF9	serine/arginine-rich splicing factor 9	Nucleus	enzyme	5	5	3	5	4	5	0.13	0.43105
IPI00376229	Isoform 1 of Phosphofurin acidic cluster sorting protein 1	PACS1	phosphofurin acidic cluster sorting protein 1	Cytoplasm	other	4	6	3	3	6	5	0.13	0.43105
IPI00550746	Nuclear migration protein nudC	NUDC	nuclear distribution gene C homolog (A. nidulans)	Cytoplasm	other	5	5	3	3	6	5	0.13	0.43105
IPI00012773	Isoform Long of Metastasis-associated protein MTA1	MTA1	metastasis associated 1	Nucleus	transcription regulator	4	6	4	4	5	4	-0.13	0.43547
IPI00016861	Isoform 1 of General transcription factor IIIc polypeptide 2	GTF3C2	general transcription factor IIIc, polypeptide 2	Nucleus	transcription regulator	4	6	4	7	2	4	-0.13	0.43547
IPI00029048	Tubulin--tyrosine ligase-like protein 12	TLL12	tubulin tyrosine ligase-like family, member 12	unknown	other	6	4	4	5	3	5	-0.13	0.43547

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00008530	60S acidic ribosomal protein P0	RPLP0	ribosomal protein, large, P0	Cytoplasm	other	2	3	9	8	3	4	0.13	0.43572
IPI00168849	Cdc42-interaction protein 4 long isoform	TRIP10	thyroid hormone receptor interactor 10	Cytoplasm	other	4	4	6	6	5	4	0.13	0.43572
IPI00290094	Splicing factor, arginine/serine-rich 8	SFSWAP	splicing factor, suppressor of white-apricc	Nucleus	other	6	5	3	4	7	4	0.13	0.43572
IPI00396098	hypothetical protein LOC168850	ZNF800	zinc finger protein 800	unknown	other	4	5	5	5	5	5	0.13	0.43572
IPI00005036	RNA-binding protein 5	RBM5	RNA binding motif protein 5	Nucleus	other	5	6	4	6	5	5	0.12	0.43888
IPI00005809	Serum deprivation-response protein	SDPR	serum deprivation response	Plasma Membrane	other	4	5	6	6	5	5	0.12	0.43888
IPI00297723	RNA-binding protein 6	RBM6	RNA binding motif protein 6	Nucleus	other	6	5	4	7	5	4	0.12	0.43888
IPI00296291	HP1-BP74	HP1BP3	heterochromatin protein 1, binding prote	Nucleus	other	5	6	4	6	3	5	-0.13	0.43893
IPI00477535	DNA-repair protein complementing XP-G cells					5	6	4	3	6	5	-0.13	0.43893
IPI00071185	Isoform SV1 of PITSLRE serine/threonine-protein kinase CDC2L1	CDK11A/CDK	cyclin-dependent kinase 11B	Nucleus	kinase	6	3	7	7	5	5	0.12	0.44302
IPI00384202	Isoform 1 of Probable JmjC domain-containing histone demethylase 1	JMJD1C	jumonji domain containing 1C	Nucleus	other	4	6	6	7	5	5	0.12	0.44302
IPI00009659	Protein C20orf77	RPRD1B	regulation of nuclear pre-mRNA domain	unknown	other	6	5	5	6	5	4	-0.12	0.44305
IPI00011675	Isoform Sp100-HMG of Nuclear autoantigen Sp-100	SP100	SP100 nuclear antigen	Nucleus	transcription regulator	5	5	6	6	6	3	-0.12	0.44305
IPI00166680	Isoform 3 of Misshapen-like kinase 1	MINK1	misshapen-like kinase 1	Cytoplasm	kinase	4	7	5	3	5	7	-0.12	0.44305
IPI00004497	Breakpoint cluster region protein	BCR	breakpoint cluster region	Cytoplasm	kinase	5	6	6	5	5	6	-0.12	0.44776
IPI00432436	PHACTR4 protein	PHACTR4	phosphatase and actin regulator 4	unknown	other	5	5	7	5	5	6	-0.12	0.44776
IPI00031241	golgi reassembly stacking protein 2	GORASP2	golgi reassembly stacking protein 2, 55kD	Cytoplasm	other	6	6	6	4	8	7	0.12	0.45107
IPI00106567	WD-repeat protein 33	WDR33	WD repeat domain 33	Nucleus	other	6	6	6	2	6	9	-0.12	0.45128
IPI00386170	Sperm specific antigen 2	SSFA2	sperm specific antigen 2	Plasma Membrane	other	7	6	5	6	7	4	-0.12	0.45128
IPI00465028	Triosephosphate isomerase					6	5	7	6	6	5	-0.12	0.45128
IPI00014513	Transcriptional repressor protein YY1	YY1	YY1 transcription factor	Nucleus	transcription regulator	7	6	6	5	8	7	0.12	0.45363
IPI00718792	LOC387680 protein (Fragment)	FAM21B	family with sequence similarity 21, memb	Cytoplasm	other	6	6	7	5	6	7	-0.12	0.45394
IPI00333858	zinc finger RNA binding protein	ZFR	zinc finger RNA binding protein	Nucleus	other	8	6	7	8	8	6	0.12	0.45756
IPI00465050	Isoform C of Lethal(2) giant larvae protein homolog 2	LLGL2	lethal giant larvae homolog 2 (Drosophila)	Cytoplasm	other	7	7	7	8	7	7	0.12	0.45756
IPI00291946	Ubiquitin carboxyl-terminal hydrolase 10	USP10	ubiquitin specific peptidase 10	Cytoplasm	peptidase	7	8	6	6	7	7	-0.12	0.45797
IPI00304692	Heterogeneous nuclear ribonucleoprotein G	RBMX	RNA binding motif protein, X-linked	Nucleus	other	7	7	8	10	7	6	0.11	0.45918
IPI00457284	hypothetical protein LOC23131	GPATC8	G patch domain containing 8	unknown	other	8	8	7	10	6	8	0.11	0.46112
IPI00301263	CAD protein	CAD	carbamoyl-phosphate synthetase 2, aspar	Cytoplasm	enzyme	7	11	6	8	8	9	0.11	0.46311
IPI00409635	KIAA1228 protein	ESYT2	extended synaptotagmin-like protein 2	unknown	other	8	8	8	9	6	8	-0.11	0.46330
IPI00646885	Rho GTPase activating protein 5 isoform a	ARHGAP5	Rho GTPase activating protein 5	Cytoplasm	enzyme	8	8	8	7	10	6	-0.11	0.46330
IPI00144293	Isoform 1 of YTH domain-containing protein 1	YTHDC1	YTH domain containing 1	Cytoplasm	other	10	7	8	9	9	8	0.11	0.46439
IPI00217626	IMP dehydrogenase/GMP reductase family protein	RBM12B	RNA binding motif protein 12B	unknown	other	10	8	8	10	7	10	0.11	0.46601
IPI00396387	guanine nucleotide binding protein-like 1	GNL1	guanine nucleotide binding protein-like 1	unknown	other	10	9	7	8	8	11	0.11	0.46601
IPI00376317	autoantigen RCD8	EDC4	enhancer of mRNA decapping 4	Cytoplasm	other	9	10	7	9	8	8	-0.11	0.46611
IPI00654555	NOL1 protein	NOP2	NOP2 nucleolar protein homolog (yeast)	Nucleus	other	11	8	8	9	8	9	-0.11	0.46757
IPI00000733	U3 small nucleolar RNA-associated protein 18 homolog					11	10	7	8	11	10	0.11	0.46857
IPI00337315	Isoform 1 of Retinoblastoma-binding protein 6	RBBP6	retinoblastoma binding protein 6	Nucleus	enzyme	10	10	8	9	9	11	0.11	0.46857
IPI00436632	Isoform 1 of Nipped-B-like protein	NIPBL	Nipped-B homolog (Drosophila)	Nucleus	transcription regulator	9	8	11	9	10	8	-0.11	0.46873
IPI00026952	Plakophilin-3	PKP3	plakophilin 3	Plasma Membrane	other	9	9	12	11	9	11	0.11	0.47037
IPI00030408	M-phase phosphoprotein 8	MPHOSPH8	M-phase phosphoprotein 8	Nucleus	transcription regulator	12	10	8	11	11	9	0.11	0.47037
IPI00018098	Novel protein	PRPF38B	PRP38 pre-mRNA processing factor 38 (y	unknown	other	11	11	8	8	10	11	-0.11	0.47063
IPI00297322	Zinc finger protein 289, ID1 regulated	ARFGAP2	ADP-ribosylation factor GTPase activating	Nucleus	other	11	10	9	8	12	9	-0.11	0.47063
IPI00514311	CTTNBP2 N-terminal-like protein	CTTNBP2NL	CTTNBP2 N-terminal like	Cytoplasm	other	11	11	8	8	10	11	-0.11	0.47063
IPI00001735	nuclear receptor co-repressor 2	NCOR2	nuclear receptor corepressor 2	Nucleus	transcription regulator	9	10	12	9	11	10	-0.11	0.47187
IPI00002186	Brefeldin A-inhibited guanine nucleotide-exchange protein 2	ARFGEF2	ADP-ribosylation factor guanine nucleotid	Cytoplasm	other	10	11	10	11	9	10	-0.11	0.47187
IPI00100197	Isoform 1 of NSFL1 cofactor p47	NSFL1C	NSFL1 (p97) cofactor (p47)	Cytoplasm	other	11	11	10	10	10	11	-0.11	0.47320
IPI00011253	40S ribosomal protein S3	RPS3	ribosomal protein S3	Cytoplasm	enzyme	10	12	11	11	11	10	-0.11	0.47414
IPI00328929	Conserved nuclear protein NHN1	ZC3H18	zinc finger CCCH-type containing 18	Nucleus	other	17	10	6	13	11	8	-0.11	0.47414
IPI00215743	Isoform 3 of Ribosome-binding protein 1	RRBP1	ribosome binding protein 1 homolog 18C	Cytoplasm	transporter	11	12	11	12	11	12	0.10	0.47460
IPI00187011	Zinc finger CCCH-type domain-containing protein C19orf7	ZC3H4	zinc finger CCCH-type containing 4	unknown	other	10	13	11	12	10	11	-0.10	0.47493
IPI00465054	Hypothetical protein DKFZp86C1054	THUMP1	THUMP domain containing 1	unknown	other	13	11	11	12	11	11	-0.10	0.47563
IPI00218696	Isoform 4 of Caldesmon	CALD1	caldesmon 1	Cytoplasm	other	11	12	13	14	12	11	0.10	0.47572
IPI00336047	Isoform Long of Myosin-9B	MYO9B	myosin IXB	Cytoplasm	enzyme	15	13	11	16	13	9	-0.10	0.47779
IPI00291916	pleckstrin homology domain interacting protein	PHIP	pleckstrin homology domain interacting f	Nucleus	other	13	18	16	19	15	14	0.10	0.48065



**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00017297	Matrin-3	MATR3	matrin 3	Nucleus	other	17	17	18	19	18	16	0.09	0.48155
IPI00022790	Microfibrillar-associated protein 1	MFAP1	microfibrillar-associated protein 1	Extracellular Space	other	18	16	19	21	13	20	0.09	0.48188
IPI00418316	RACK7 isoform e	ZMYND8	zinc finger, MYND-type containing 8	Nucleus	transcription regulator	22	17	14	21	14	17	-0.09	0.48213
IPI00018370	Isoform 2 of Supervillin	SVIL	supervillin	Plasma Membrane	other	23	23	28	27	23	25	0.09	0.48412
IPI00183794	zinc finger protein 265 isoform 2	ZRANB2	zinc finger, RAN-binding domain containi	Nucleus	transcription regulator	28	22	25	22	29	25	0.09	0.48416
IPI00005625	136 kDa protein					24	27	26	23	29	26	0.09	0.48426
IPI00000105	Major vault protein	MVP	major vault protein	Nucleus	other	1	0	1	0	0	0	0.00	0.48663
IPI00000494	60S ribosomal protein L5	RPL5	ribosomal protein L5	Cytoplasm	other	0	1	0	0	0	0	0.00	0.48663
IPI00000513	E-cadherin	CDH1	cadherin 1, type 1, E-cadherin (epithelial)	Plasma Membrane	other	1	1	0	1	1	0	0.00	0.48663
IPI00000685	Cell division protein kinase 7	CDK7	cyclin-dependent kinase 7	Nucleus	kinase	1	0	0	0	0	0	0.00	0.48663
IPI00000728	Isoform 1 of Ubiquitin carboxyl-terminal hydrolase 15	USP15	ubiquitin specific peptidase 15	Cytoplasm	peptidase	0	0	0	0	1	1	0.00	0.48663
IPI00000816	14-3-3 protein epsilon	YWHAE	tyrosine 3-monooxygenase/tryptophan 5-	Cytoplasm	other	1	1	0	0	0	0	0.00	0.48663
IPI00000856	Isoform 1 of Pleckstrin homology domain-containing family C member 2	FERMT2	fermitin family member 2	Cytoplasm	other	2	0	4	3	1	3	0.00	0.48663
IPI00001134	CDNA FLJ11153 fis, clone PLACE1006917, weakly similar to HSH4	RBM7	RNA binding motif protein 7	unknown	other	0	0	0	1	0	0	0.00	0.48663
IPI00001466	Echinoderm microtubule-associated protein-like 4	EML4	echinoderm microtubule associated prote	Cytoplasm	other	5	5	5	5	5	5	0.00	0.48663
IPI00001757	Isoform 1 of RNA-binding protein 8A	RBM8A	RNA binding motif protein 8A	Nucleus	other	3	4	3	4	3	3	0.00	0.48663
IPI00002054	132 kDa protein	ZNF687	zinc finger protein 687	Nucleus	other	4	3	4	5	0	5	0.00	0.48663
IPI00002232	Isoform 1 of Serine/threonine-protein kinase TAO1	TAOK1	TAO kinase 1	Cytoplasm	kinase	0	0	2	0	2	0	0.00	0.48663
IPI00002406	Lutheran blood group glycoprotein precursor	BCAM	basal cell adhesion molecule (Lutheran bl	Plasma Membrane	transmembrane receptor	0	0	0	1	0	0	0.00	0.48663
IPI00002579	RB-binding protein	KDM5B	lysine (K)-specific demethylase 5B	Nucleus	transcription regulator	0	1	0	0	0	0	0.00	0.48663
IPI00002580	Phosphatidylinositol-4-phosphate 3-kinase C2 domain-containing	PIK3C2A	phosphoinositide-3-kinase, class 2, alpha	Cytoplasm	kinase	0	0	0	0	1	0	0.00	0.48663
IPI00002902	Nucleolar protein 9	NOL9	nucleolar protein 9	Nucleus	other	0	1	0	0	1	1	0.00	0.48663
IPI00002966	Heat shock 70 kDa protein 4	HSPA4	heat shock 70kDa protein 4	Cytoplasm	other	1	0	0	0	1	0	0.00	0.48663
IPI00003519	116 kDa U5 small nuclear ribonucleoprotein component	EFTUD2	elongation factor Tu GTP binding domain	Nucleus	enzyme	0	0	1	0	0	0	0.00	0.48663
IPI00003783	Dual specificity mitogen-activated protein kinase kinase 2	MAP2K2	mitogen-activated protein kinase kinase 2	Cytoplasm	kinase	2	3	4	4	2	3	0.00	0.48663
IPI00003799	Isoform 2 of Heme-binding protein 2	HEBP2	heme binding protein 2	Cytoplasm	other	0	0	0	0	0	1	0.00	0.48663
IPI00003865	Isoform 1 of Heat shock cognate 71 kDa protein	HSPA8	heat shock 70kDa protein 8	Cytoplasm	enzyme	1	0	0	0	0	0	0.00	0.48663
IPI00004962	golgi phosphoprotein 4	GOLIM4	golgi integral membrane protein 4	Cytoplasm	other	3	3	4	3	3	4	0.00	0.48663
IPI00005260	proteasome (prosome, macropain) activator subunit 4	PSME4	proteasome (prosome, macropain) activat	Cytoplasm	other	0	0	0	0	1	1	0.00	0.48663
IPI00005648	Scaffold attachment factor B2	SAFB2	scaffold attachment factor B2	Cytoplasm	other	0	0	0	0	1	0	0.00	0.48663
IPI00005826	HECT domain and RCC1-like domain-containing protein 2	HERC2	hect domain and RLD 2	Cytoplasm	enzyme	4	5	4	3	5	5	0.00	0.48663
IPI00005978	Splicing factor, arginine/serine-rich 2	SRSF2	serine/arginine-rich splicing factor 2	Nucleus	transcription regulator	1	4	1	2	2	2	0.00	0.48663
IPI00006122	Isoform MEA6 of Cutaneous T-cell lymphoma-associated antigen	CTAGE5	CTAGE family, member 5	Cytoplasm	enzyme	1	1	0	0	0	0	0.00	0.48663
IPI00006379	Nucleolar protein NOP5	NOP58	NOP58 ribonucleoprotein homolog (yeast)	Nucleus	enzyme	0	0	0	0	1	0	0.00	0.48663
IPI00006451	Vesicle-fusing ATPase	NSF	N-ethylmaleimide-sensitive factor	Cytoplasm	transporter	1	0	0	0	0	0	0.00	0.48663
IPI00006482	Isoform Long of Sodium/potassium-transporting ATPase alpha-1	ATP1A1	ATPase, Na+/K+ transporting, alpha 1 po	Plasma Membrane	transporter	1	0	0	0	0	0	0.00	0.48663
IPI00007423	Isoform 1 of Acidic leucine-rich nuclear phosphoprotein 32 family	ANP32B	acidic (leucine-rich) nuclear phosphoprote	Nucleus	other	1	1	0	0	1	0	0.00	0.48663
IPI00007702	Heat shock-related 70 kDa protein 2	HSPA2	heat shock 70kDa protein 2	Cytoplasm	other	0	0	0	0	1	0	0.00	0.48663
IPI00007729	Isoform 1 of Nucleolar protein 7	NOL7	nucleolar protein 7, 27kDa	Nucleus	other	1	1	0	0	0	0	0.00	0.48663
IPI00007765	Stress-70 protein, mitochondrial precursor	HSPA9	heat shock 70kDa protein 9 (mortalin)	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663
IPI00007926	c-Myc-responsive protein Rcl	C6orf108	chromosome 6 open reading frame 108	Nucleus	other	1	1	0	0	0	1	0.00	0.48663
IPI00008137	Zinc finger protein 295	ZNF295	zinc finger protein 295	Nucleus	other	0	2	3	0	0	4	0.00	0.48663
IPI00008144	Isoform 1 of Neurabin-1	PPP1R9A	protein phosphatase 1, regulatory subunit	unknown	other	0	1	0	0	0	0	0.00	0.48663
IPI00008179	Isoform 1 of Sulfotransferase family cytosolic 2B member 1	SULT2B1	sulfotransferase family, cytosolic, 2B, mem	Cytoplasm	enzyme	1	0	0	0	0	0	0.00	0.48663
IPI00008200	Isoform 1 of YEATS domain-containing protein 2	YEATS2	YEATS domain containing 2	Nucleus	transcription regulator	4	3	0	0	6	0	0.00	0.48663
IPI00008438	40S ribosomal protein S10	RPS10	ribosomal protein S10	Cytoplasm	other	1	1	0	1	1	1	0.00	0.48663
IPI00008575	Isoform 1 of KH domain-containing, RNA-binding, signal transdu	KHDRBS1	KH domain containing, RNA binding, sig	Nucleus	transcription regulator	1	2	2	1	2	2	0.00	0.48663
IPI00009315	Golgi resident protein GCP60	ACBD3	acyl-CoA binding domain containing 3	Cytoplasm	other	1	1	0	0	0	0	0.00	0.48663
IPI00009328	Probable ATP-dependent RNA helicase DDX48	EIF4A3	eukaryotic translation initiation factor 4A:	Nucleus	enzyme	0	1	0	1	1	1	0.00	0.48663
IPI00009790	6-phosphofructokinase type C	PFKP	phosphofructokinase, platelet	Cytoplasm	kinase	4	8	4	7	5	4	0.00	0.48663
IPI00009922	DC50	SLIRP	SRA stem-loop interacting RNA binding f	Cytoplasm	other	0	0	0	0	0	1	0.00	0.48663
IPI00010105	Eukaryotic translation initiation factor 6	EIF6	eukaryotic translation initiation factor 6	Cytoplasm	translation regulator	0	0	1	1	1	0	0.00	0.48663
IPI00010141	DNA polymerase epsilon subunit 3	POLE3	polymerase (DNA directed), epsilon 3 (p1	Nucleus	enzyme	0	0	1	1	1	1	0.00	0.48663
IPI00010200	YTH domain containing 2	YTHDC2	YTH domain containing 2	unknown	other	1	1	1	0	0	0	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00010320	Chromobox protein homolog 1	CBX1	chromobox homolog 1	Nucleus	transcription regulator	2	1	0	2	0	0	0.00	0.48663
IPI00010586	TATA element modulatory factor	TMF1	TATA element modulatory factor 1	Cytoplasm	transcription regulator	1	3	0	0	3	0	0.00	0.48663
IPI00010653	Isoform 1 of RNA exonuclease 4	REXO4	REX4, RNA exonuclease 4 homolog (S. ce	Nucleus	transcription regulator	2	2	2	0	3	2	0.00	0.48663
IPI00010896	Chloride intracellular channel protein 1	CLIC1	chloride intracellular channel 1	Nucleus	ion channel	0	0	1	0	1	0	0.00	0.48663
IPI00011689	Elongation factor 2 kinase	EEF2K	eukaryotic elongation factor-2 kinase	Cytoplasm	kinase	4	3	2	3	3	3	0.00	0.48663
IPI00011875	Protein Red	IK	IK cytokine, down-regulator of HLA II	Extracellular Space	cytokine	0	1	0	0	1	1	0.00	0.48663
IPI00012200	MGC2477 protein	C11orf48	chromosome 11 open reading frame 48	unknown	other	1	0	0	0	0	0	0.00	0.48663
IPI00012341	Isoform SRP40-1 of Splicing factor, arginine/serine-rich 5	SRSF5	serine/arginine-rich splicing factor 5	Nucleus	other	0	0	0	1	1	0	0.00	0.48663
IPI00012578	Importin alpha-4 subunit	KPNA4	karyopherin alpha 4 (importin alpha 3)	Nucleus	transporter	0	0	0	1	0	0	0.00	0.48663
IPI00012866	RAC-alpha serine/threonine-protein kinase	AKT1	v-akt murine thymoma viral oncogene hc	Cytoplasm	kinase	1	0	0	0	1	0	0.00	0.48663
IPI00013070	Isoform 1 of Heterogeneous nuclear ribonucleoprotein U-like pr	HNRNPUL1	heterogeneous nuclear ribonucleoprotein	Nucleus	other	0	0	0	0	1	0	0.00	0.48663
IPI00013122	Hsp90 co-chaperone Cdc37	CDC37	cell division cycle 37 homolog (S. cerevisi	Cytoplasm	other	0	0	1	1	0	1	0.00	0.48663
IPI00013415	40S ribosomal protein S7	RPS7	ribosomal protein S7	Cytoplasm	other	0	0	0	1	0	0	0.00	0.48663
IPI00013439	Transcription factor jun-B	JUNB	jun B proto-oncogene	Nucleus	transcription regulator	2	2	3	2	3	2	0.00	0.48663
IPI00013537	Hypothetical protein FUJ20004	KANK2	KN motif and ankyrin repeat domains 2	Nucleus	transcription regulator	0	0	0	0	0	1	0.00	0.48663
IPI00013877	Isoform 1 of Heterogeneous nuclear ribonucleoprotein H3	HNRNP3	heterogeneous nuclear ribonucleoprotein	Nucleus	other	1	1	0	0	0	0	0.00	0.48663
IPI00014149	Tetratricopeptide repeat protein KIAA0103	TTC35	tetratricopeptide repeat domain 35	Nucleus	other	0	1	1	0	1	0	0.00	0.48663
IPI00014235	Similar to RAB3 GTPase-activating protein	RAB3GAP1	RAB3 GTPase activating protein subunit 1	Cytoplasm	other	1	1	0	0	1	0	0.00	0.48663
IPI00014850	Astrocytic phosphoprotein PEA-15	PEA15	phosphoprotein enriched in astrocytes 15	Cytoplasm	transporter	1	2	1	1	1	2	0.00	0.48663
IPI00015286	Dedicator of cytokinesis protein 1	DOCK1	dedicator of cytokinesis 1	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663
IPI00015404	Isoform 1 of AT-rich interactive domain-containing protein 1B	ARID1B	AT rich interactive domain 1B (SWI1-like)	Nucleus	transcription regulator	1	0	1	0	0	0	0.00	0.48663
IPI00015526	Isoform 1 of Histone-lysine N-methyltransferase, H3 lysine-9 spe					0	0	0	1	0	0	0.00	0.48663
IPI00015580	formin binding protein 1-like isoform 2	FNBP1L	formin binding protein 1-like	unknown	other	6	8	5	7	7	5	0.00	0.48663
IPI00015799	Diacylglycerol O-acyltransferase 1	DGAT1	diacylglycerol O-acyltransferase 1	Cytoplasm	enzyme	1	1	1	1	1	1	0.00	0.48663
IPI00015905	Exosome complex exonuclease RRP4	EXOSC2	exosome component 2	Nucleus	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00015954	GTP-binding protein SAR1a	SAR1A	SAR1 homolog A (S. cerevisiae)	Cytoplasm	enzyme	1	1	0	0	1	1	0.00	0.48663
IPI00016725	General transcription factor 3C polypeptide 4	GTF3C4	general transcription factor IIIc, polypepti	Nucleus	transcription regulator	1	1	0	1	0	0	0.00	0.48663
IPI00017746	BRCA1-associated RING domain protein 1	BARD1	BRCA1 associated RING domain 1	Nucleus	transcription regulator	1	0	0	0	0	0	0.00	0.48663
IPI00018192	Isoform 1 of WD-repeat protein 74	WDR74	WD repeat domain 74	Nucleus	other	0	0	1	0	1	1	0.00	0.48663
IPI00019223	Isoform 1 of A-kinase anchor protein 9	AKAP9	A kinase (PRKA) anchor protein (yotiao) 9	Cytoplasm	other	0	0	0	0	1	1	0.00	0.48663
IPI00019447	hypothetical protein LOC55215	FANCI	Fanconi anemia, complementation group	Nucleus	other	2	1	2	2	1	2	0.00	0.48663
IPI00019472	Neutral amino acid transporter B(0)	SLC1A5	solute carrier family 1 (neutral amino acid	Plasma Membrane	transporter	0	0	0	1	0	0	0.00	0.48663
IPI00019540	Isoform 4 of SAPS domain family member 3	PPP6R3	protein phosphatase 6, regulatory subunit	unknown	other	5	4	4	5	4	4	0.00	0.48663
IPI00019912	Peroxisomal multifunctional enzyme type 2	HSD17B4	hydroxysteroid (17-beta) dehydrogenase	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00020042	Isoform 1 of 26S protease regulatory subunit 6B	PSMC4	proteasome (prosome, macropain) 26S su	Nucleus	peptidase	1	0	0	0	0	0	0.00	0.48663
IPI00020101	Histone H2B.a/g/h/k/l					0	0	0	1	1	0	0.00	0.48663
IPI00020124	Phosphatidylinositol 4-kinase type II	PI4K2A	phosphatidylinositol 4-kinase type 2 alph.	Cytoplasm	kinase	13	11	12	13	12	11	0.00	0.48663
IPI00020194	Isoform Short of TATA-binding protein-associated factor 2N	TAF15	TAF15 RNA polymerase II, TATA box binc	Nucleus	transcription regulator	0	0	0	0	0	1	0.00	0.48663
IPI00020827	PNAS-117	MKKS	McKusick-Kaufman syndrome	Cytoplasm	other	0	0	1	0	0	0	0.00	0.48663
IPI00021048	Isoform 1 of Myoferlin	MYOF	myoferlin	Nucleus	other	4	3	2	3	3	3	0.00	0.48663
IPI00021175	Cell division cycle 2-related protein kinase 7	CDK12	cyclin-dependent kinase 12	Nucleus	kinase	19	17	18	19	15	20	0.00	0.48663
IPI00021305	Cyclin-H	CCNH	cyclin H	Nucleus	transcription regulator	3	0	0	3	0	0	0.00	0.48663
IPI00021439	Actin, cytoplasmic 1	ACTB	actin, beta	Cytoplasm	other	1	0	0	0	1	0	0.00	0.48663
IPI00021840	40S ribosomal protein S6	RPS6	ribosomal protein S6	Cytoplasm	other	1	1	1	0	0	0	0.00	0.48663
IPI00021907	Isoform 1 of Myelin basic protein	MBP	myelin basic protein	Extracellular Space	other	1	1	0	1	0	1	0.00	0.48663
IPI00021985	Transmembrane 9 superfamily protein member 4	TM9SF4	transmembrane 9 superfamily protein me	Cytoplasm	transporter	0	0	1	0	0	0	0.00	0.48663
IPI00022020	Type II inositol-3,4-bisphosphate 4-phosphatase	INPP4B	inositol polyphosphate-4-phosphatase, ty	unknown	phosphatase	1	0	0	0	0	0	0.00	0.48663
IPI00022305	MSTP017	BZW2	basic leucine zipper and W2 domains 2	Cytoplasm	translation regulator	1	0	0	0	0	0	0.00	0.48663
IPI00022348	Isoform PML-1 of Probable transcription factor PML	PML	promyelocytic leukemia	Nucleus	transcription regulator	3	4	0	4	0	3	0.00	0.48663
IPI00022585	Isoform 1 of A kinase anchor protein 1, mitochondrial precursor	AKAP1	A kinase (PRKA) anchor protein 1	Cytoplasm	other	0	0	1	0	0	0	0.00	0.48663
IPI00022613	Isoform 1 of Probable nucleolar complex protein 14	NOP14	NOP14 nucleolar protein homolog (yeast)	Nucleus	other	1	0	2	0	2	1	0.00	0.48663
IPI00023095	Myeloid leukemia factor 2	MLF2	myeloid leukemia factor 2	Nucleus	other	0	1	0	0	0	0	0.00	0.48663
IPI00023234	Ubiquitin-like 1-activating enzyme E1B	UBA2	ubiquitin-like modifier activating enzyme	Cytoplasm	enzyme	0	0	1	1	0	0	0.00	0.48663
IPI00023322	Zinc-finger protein ubi-d4	DPF2	D4, zinc and double PHD fingers family 2	Nucleus	other	0	0	0	1	0	0	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00023339	CREB-binding protein	CREBBP	CREB binding protein	Nucleus	transcription regulator	0	0	0	1	1	1	0.00	0.48663
IPI00023340	Histone acetyltransferase MYST3	KAT6A	K(lysine) acetyltransferase 6A	Nucleus	enzyme	0	0	0	0	0	1	0.00	0.48663
IPI00023344	Isoform 1 of Symplekin	SYMPK	symplekin	Cytoplasm	other	5	3	4	7	0	4	0.00	0.48663
IPI00024067	clathrin heavy chain 1	CLTC	clathrin, heavy chain (Hc)	Plasma Membrane	other	0	0	0	0	1	0	0.00	0.48663
IPI00024145	Isoform 1 of Voltage-dependent anion-selective channel protein	VDAC2	voltage-dependent anion channel 2	Cytoplasm	ion channel	0	0	0	0	0	1	0.00	0.48663
IPI00024157	FK506-binding protein 3	FKBP3	FK506 binding protein 3, 25kDa	Nucleus	enzyme	1	1	1	0	1	1	0.00	0.48663
IPI00024254	Interferon-induced protein with tetratricopeptide repeats 3	IFIT3	interferon-induced protein with tetratricopeptide repeats 3	Cytoplasm	other	0	0	0	1	0	0	0.00	0.48663
IPI00024871	core-binding factor, beta subunit isoform 1	CBFB	core-binding factor, beta subunit	Nucleus	transcription regulator	0	0	4	2	2	2	0.00	0.48663
IPI00024933	60S ribosomal protein L12	RPL12	ribosomal protein L12	Cytoplasm	other	0	0	0	1	1	0	0.00	0.48663
IPI00024976	Mitochondrial import receptor subunit TOM22 homolog	TOMM22	translocase of outer mitochondrial membrane	Cytoplasm	transporter	0	0	0	0	1	1	0.00	0.48663
IPI00025058	Isoform 3 of Double-stranded RNA-specific adenosine deaminase	ADAR	adenosine deaminase, RNA-specific	Nucleus	enzyme	0	0	0	1	0	1	0.00	0.48663
IPI00025366	Citrate synthase, mitochondrial precursor	CS	citrate synthase	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00025721	COP9 signalosome complex subunit 3	COP3	COP9 constitutive photomorphogenic homolog 3	Cytoplasm	other	0	1	0	0	0	0	0.00	0.48663
IPI00026089	Splicing factor 3B subunit 1	SF3B1	splicing factor 3b, subunit 1, 155kDa	Nucleus	other	6	3	2	4	2	5	0.00	0.48663
IPI00026302	60S ribosomal protein L31	RPL31	ribosomal protein L31	Cytoplasm	other	0	0	0	1	1	1	0.00	0.48663
IPI00026665	Glutaminyl-tRNA synthetase	QARS	glutaminyl-tRNA synthetase	Cytoplasm	enzyme	1	0	0	1	1	1	0.00	0.48663
IPI00026781	Fatty acid synthase	FASN	fatty acid synthase	Cytoplasm	enzyme	2	1	0	2	0	0	0.00	0.48663
IPI00026813	Protein farnesyltransferase/geranylgeranyltransferase type I alpha	FNTA	farnesyltransferase, CAAX box, alpha	Cytoplasm	enzyme	0	1	0	0	0	0	0.00	0.48663
IPI00026970	chromatin-specific transcription elongation factor large subunit	SUPT16H	suppressor of Ty 16 homolog (S. cerevisiae)	Nucleus	transcription regulator	0	0	0	0	0	1	0.00	0.48663
IPI00027078	Carboxypeptidase D precursor	CPD	carboxypeptidase D	Extracellular Space	peptidase	3	4	3	4	0	5	0.00	0.48663
IPI00027252	Prohibitin-2	PHB2	prohibitin 2	Cytoplasm	transcription regulator	1	0	1	0	0	0	0.00	0.48663
IPI00027415	DEAH (Asp-Glu-Ala-His) box polypeptide 36	DHX36	DEAH (Asp-Glu-Ala-His) box polypeptide 36	unknown	enzyme	1	1	1	0	1	1	0.00	0.48663
IPI00027726	Isoform 1 of Krueppel-like factor 3	KLF3	Kruppel-like factor 3 (basic)	Nucleus	transcription regulator	3	0	0	0	0	3	0.00	0.48663
IPI00028005	Nuclear pore complex protein Nup107	NUP107	nucleoporin 107kDa	Nucleus	transporter	1	1	0	1	1	1	0.00	0.48663
IPI00028083	Translation initiation factor eIF-2B subunit beta	EIF2B2	eukaryotic translation initiation factor 2B, subunit beta	Cytoplasm	translation regulator	0	0	1	0	0	0	0.00	0.48663
IPI00028275	Cytoskeleton-associated protein 5	CKAP5	cytoskeleton associated protein 5	Nucleus	other	1	1	1	1	1	1	0.00	0.48663
IPI00028307	Hypothetical protein FLJ22346	UBE2O	ubiquitin-conjugating enzyme E2O	unknown	enzyme	0	0	1	0	0	0	0.00	0.48663
IPI00028359	Hypothetical protein DKFZp761F0123	SH3BP5L	SH3-binding domain protein 5-like	unknown	other	1	0	0	0	0	0	0.00	0.48663
IPI00028931	Desmoglein 2, preproprotein	DSG2	desmoglein 2	Plasma Membrane	other	0	0	0	0	1	0	0.00	0.48663
IPI00029012	Eukaryotic translation initiation factor 3 subunit 10	EIF3A	eukaryotic translation initiation factor 3, subunit 10	Cytoplasm	translation regulator	0	0	0	1	0	1	0.00	0.48663
IPI00029079	GMP synthase	GMPS	guanine monophosphate synthetase	Nucleus	enzyme	1	0	1	1	1	1	0.00	0.48663
IPI00029159	Isoform 1 of Double-strand break repair protein MRE11A	MRE11A	MRE11 meiotic recombination 11 homolog	Nucleus	enzyme	2	0	1	2	1	0	0.00	0.48663
IPI00029740	sorting nexin 3 isoform a	SNX3	sorting nexin 3	Cytoplasm	transporter	0	0	0	0	1	0	0.00	0.48663
IPI00029764	Splicing factor 3A subunit 3	SF3A3	splicing factor 3a, subunit 3, 60kDa	Nucleus	other	0	0	0	0	1	0	0.00	0.48663
IPI00030781	Isoform Alpha of Signal transducer and activator of transcription 1	STAT1	signal transducer and activator of transcription 1	Nucleus	transcription regulator	0	1	0	0	1	0	0.00	0.48663
IPI00031015	Histone RNA hairpin-binding protein	SLBP	stem-loop binding protein	Nucleus	other	1	0	0	0	0	0	0.00	0.48663
IPI00031517	DNA replication licensing factor MCM6	MCM6	minichromosome maintenance complex component 6	Nucleus	enzyme	1	0	1	0	1	0	0.00	0.48663
IPI00031618	DNA-damage inducible protein 2	DDI2	(includes DNA-damage inducible 1 homolog 2 (S. cerevisiae))	Plasma Membrane	transporter	0	0	1	0	0	0	0.00	0.48663
IPI00031681	Cell division protein kinase 2	CDK2	cyclin-dependent kinase 2	Nucleus	kinase	1	2	0	2	1	1	0.00	0.48663
IPI00032872	28S ribosomal protein S16, mitochondrial precursor	MRPS16	(includes mitochondrial ribosomal protein S16)	Cytoplasm	other	0	1	1	1	0	0	0.00	0.48663
IPI00032957	Ubiquitin-conjugating enzyme E2 I	UBE2I	ubiquitin-conjugating enzyme E2I	Nucleus	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00033025	Septin-7	SEPT7	septin 7	Cytoplasm	other	1	1	0	1	1	1	0.00	0.48663
IPI00033030	Adhesion-regulating molecule 1 precursor	ADRM1	adhesion regulating molecule 1	Plasma Membrane	other	1	1	1	0	1	1	0.00	0.48663
IPI00033561	Isoform 1 of RNA-binding protein with serine-rich domain 1	RNPS1	RNA binding protein S1, serine-rich domain 1	Nucleus	other	0	0	0	1	0	0	0.00	0.48663
IPI00033892	Isoform 1 of Zinc finger protein 336	GZF1	GDNF-inducible zinc finger protein 1	Nucleus	other	1	0	0	1	0	0	0.00	0.48663
IPI00033907	Anaphase-promoting complex subunit 1	ANAPC1	anaphase promoting complex subunit 1	Nucleus	other	4	3	3	3	4	3	0.00	0.48663
IPI00034049	Isoform 1 of Regulator of nonsense transcripts 1	UPF1	UPF1 regulator of nonsense transcripts homolog 1	Nucleus	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00056504	Ubiquitin-conjugating enzyme E2 E3	UBE2E3	ubiquitin-conjugating enzyme E2E 3	Nucleus	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00061087	Protein C9orf42	FAM122A	family with sequence similarity 122A	unknown	other	2	2	0	0	3	0	0.00	0.48663
IPI00062120	Protein S100-A16	S100A16	S100 calcium binding protein A16	Nucleus	other	0	0	0	1	0	0	0.00	0.48663
IPI00063242	Bcl-XL-binding protein v68	PGAM5	phosphoglycerate mutase family member 5	Cytoplasm	enzyme	0	0	1	1	0	0	0.00	0.48663
IPI00065276	CDNA FLJ32841 fis, clone TESTI2003325	ASPSCR1	alveolar soft part sarcoma chromosome region 1	Cytoplasm	other	0	1	0	0	1	0	0.00	0.48663
IPI00066641	Ubiquitin-like PHD and RING finger domain-containing protein 1	UHRF1	ubiquitin-like with PHD and ring finger domain-containing protein 1	Nucleus	transcription regulator	2	2	0	0	2	2	0.00	0.48663
IPI00069309	Hypothetical protein DKFZp434K1815	LRWD1	leucine-rich repeats and WD repeat domain-containing protein 1	Nucleus	other	11	11	11	12	9	12	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00069693	23 kDa protein	RPL14	ribosomal protein L14	Cytoplasm	other	1	3	2	3	2	0	0.00	0.48663
IPI00075248	Calmodulin					0	0	0	0	0	1	0.00	0.48663
IPI00100673	Charged multivesicular body protein 3	CHMP3	charged multivesicular body protein 3	Cytoplasm	other	0	1	0	0	0	0	0.00	0.48663
IPI00100930	Hypothetical protein C12orf43	C12orf43	chromosome 12 open reading frame 43	unknown	other	1	0	1	0	0	0	0.00	0.48663
IPI00102107	Isoform 1 of Histone-lysine N-methyltransferase, H3 lysine-36 an	NSD1	nuclear receptor binding SET domain pro	Nucleus	transcription regulator	2	0	0	2	0	0	0.00	0.48663
IPI00102918	Isoform 2 of ATR-interacting protein	ATRIP	ATR interacting protein	Nucleus	kinase	4	0	0	4	0	0	0.00	0.48663
IPI00103525	Paraspeckle protein 1 alpha isoform	PSPC1	paraspeckle component 1	Nucleus	other	0	0	0	1	1	0	0.00	0.48663
IPI00106559	Isoform 2 of Tax1-binding protein 1	TAX1BP1	Tax1 (human T-cell leukemia virus type I)	Cytoplasm	other	0	0	0	1	0	0	0.00	0.48663
IPI00107113	Isoform 1 of U3 small nucleolar RNA-associated protein 14 hom	UTP14A	UTP14, U3 small nucleolar ribonucleoprot	Nucleus	other	4	4	3	3	3	5	0.00	0.48663
IPI00141318	P63 protein	CKAP4	cytoskeleton-associated protein 4	Cytoplasm	other	1	1	0	0	1	0	0.00	0.48663
IPI00142716	Dnal1 homology subfamily A member 5 isoform 2	DNAJC21	Dnal1 (Hsp40) homolog, subfamily C, mem	unknown	other	0	0	1	0	0	0	0.00	0.48663
IPI00143753	PREDICTED: U2-associated SR140 protein	U2SURP	U2 snRNP-associated SURP domain cont	Nucleus	other	0	0	0	1	0	0	0.00	0.48663
IPI00150057	Isoform 2 of SWI/SNF-related matrix-associated actin-dependent	SMARCC2	SWI/SNF related, matrix associated, actin	Nucleus	transcription regulator	5	9	8	9	6	7	0.00	0.48663
IPI00152542	Protein Dmx-like 2	DMXL2	Dmx-like 2	Cytoplasm	other	0	1	0	0	0	0	0.00	0.48663
IPI00152671	hypothetical protein LOC157769	FAM91A1	family with sequence similarity 91, memb	unknown	other	1	1	1	0	0	0	0.00	0.48663
IPI00152701	Hypothetical protein FLJ23660	PLCD3	phospholipase C, delta 3	unknown	enzyme	0	2	0	0	0	2	0.00	0.48663
IPI00154975	Dnal1 homology subfamily C member 9	DNAJC9	Dnal1 (Hsp40) homolog, subfamily C, mem	unknown	other	0	0	0	0	1	1	0.00	0.48663
IPI00156689	Synaptic vesicle membrane protein VAT-1 homolog	VAT1	vesicle amine transport protein 1 homolo	Plasma Membrane	transporter	0	0	1	0	0	0	0.00	0.48663
IPI00157757	Isoform 1 of NEDD9-interacting protein with calponin homology	MICAL1	microtubule associated monooxygenase, c	Cytoplasm	enzyme	1	0	1	0	0	0	0.00	0.48663
IPI00158020	Isoform 1 of Putative splicing factor, arginine/serine-rich 14	SUGP2	SURP and G patch domain containing 2	Nucleus	other	0	0	0	0	0	1	0.00	0.48663
IPI00159899	Ankyrin repeat and FYVE domain-containing protein 1	ANKFY1	ankyrin repeat and FYVE domain containi	Nucleus	transcription regulator	1	0	1	0	1	0	0.00	0.48663
IPI00160265	Isoform 2 of Trinucleotide repeat-containing gene 6A protein	TNRC6A	trinucleotide repeat containing 6A	Nucleus	other	0	0	0	1	0	0	0.00	0.48663
IPI00163644	Oxysterol-binding protein	OSBPL8	oxysterol binding protein-like 8	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663
IPI00164481	Isoform 2 of Double-stranded RNA-binding protein Staufen hom	STAU2	staufen, RNA binding protein, homolog 2	Cytoplasm	other	1	1	0	0	0	0	0.00	0.48663
IPI00164951	P40					0	2	2	3	0	0	0.00	0.48663
IPI00165547	Isoform 2 of Phosphatidylinositol 4-kinase beta	PI4KB	phosphatidylinositol 4-kinase, catalytic, b	Cytoplasm	kinase	3	2	3	2	3	3	0.00	0.48663
IPI00165946	Isoform 2 of Membrane-associated guanylate kinase, WW and PI	MAG11	(includ membrane associated guanylate kinase, V	Plasma Membrane	kinase	1	0	0	0	0	0	0.00	0.48663
IPI00168336	CDNA FLJ90478 fis, clone NT2RP3002790	LEM2	LEM domain containing 2	Nucleus	other	0	2	2	2	2	1	0.00	0.48663
IPI00168388	Isoform 1 of Signal recognition particle 68 kDa protein	SRP68	(includ signal recognition particle 68kDa	Nucleus	other	0	0	0	0	1	0	0.00	0.48663
IPI00169345	Protein NEDD1	NEDD1	neural precursor cell expressed, developn	Cytoplasm	other	2	0	0	2	0	0	0.00	0.48663
IPI00169383	Phosphoglycerate kinase 1	PGK1	phosphoglycerate kinase 1	Cytoplasm	kinase	0	0	0	0	0	1	0.00	0.48663
IPI00170786	WW domain-binding protein 11	WBP11	WW domain binding protein 11	Nucleus	phosphatase	1	3	2	3	2	1	0.00	0.48663
IPI00171390	CDNA FLJ34719 fis, clone MESAN2005689, weakly similar to SPL	PRPF38A	PRP38 pre-mRNA processing factor 38 (y	Nucleus	other	1	1	1	1	1	1	0.00	0.48663
IPI00171411	Golgi phosphoprotein 2	GOLM1	golgi membrane protein 1	Cytoplasm	other	1	0	1	0	0	0	0.00	0.48663
IPI00171798	Metastasis-associated protein MTA2	MTA2	metastasis associated 1 family, member 2	Nucleus	transcription regulator	3	1	2	2	1	3	0.00	0.48663
IPI00174025	Isoform 1 of Dynammin-binding protein	DNMBP	dynammin binding protein	Cytoplasm	other	1	1	0	0	0	0	0.00	0.48663
IPI00174390	2'-phosphodiesterase	PDE12	phosphodiesterase 12	Cytoplasm	other	0	0	0	1	0	1	0.00	0.48663
IPI00174976	Isoform 1 of MAGUK p55 subfamily member 5	MPP5	membrane protein, palmitoylated 5 (MAC	Plasma Membrane	kinase	0	0	0	0	1	1	0.00	0.48663
IPI00175136	RNA binding motif protein 15B	RBM15B	RNA binding motif protein 15B	Nucleus	other	8	4	6	6	7	5	0.00	0.48663
IPI00175169	Isoform 1 of ADP-ribosylation factor GTPase-activating protein 1	ARFGAP1	ADP-ribosylation factor GTPase activating	Cytoplasm	transporter	0	6	5	0	7	4	0.00	0.48663
IPI00179057	Isoform 1 of Cullin-4B	CUL4B	cullin 4B	unknown	other	1	0	0	0	1	1	0.00	0.48663
IPI00180707	Isoform 1 of FRAS1-related extracellular matrix protein 2 precurs	FREM2	FRAS1 related extracellular matrix protein	Extracellular Space	other	1	0	0	0	0	0	0.00	0.48663
IPI00181586	PQ loop repeat containing 1	PQLC1	PQ loop repeat containing 1	unknown	other	0	0	0	0	1	0	0.00	0.48663
IPI00181702	Isoform 1 of Splicing factor, arginine/serine-rich 15	SCAF4	SR-related CTD-associated factor 4	Nucleus	other	9	7	8	10	7	7	0.00	0.48663
IPI00181728	Brix domain-containing protein 2	BRIX1	BRX1, biogenesis of ribosomes, homolog	Nucleus	other	1	0	0	0	0	0	0.00	0.48663
IPI00181893	Isoform 4 of Phosphorylase b kinase beta regulatory chain	PHKB	phosphorylase kinase, beta	Cytoplasm	kinase	0	0	0	0	0	0	0.00	0.48663
IPI00182289	40S ribosomal protein S29	RPS29	ribosomal protein S29	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663
IPI00183530	CDNA FLJ46302 fis, clone TEST14036048, highly similar to Sorting	SNX1	sorting nexin 1	Cytoplasm	transporter	0	0	0	0	1	0	0.00	0.48663
IPI00185374	26S proteasome non-ATPase regulatory subunit 12	PSMD12	proteasome (prosome, macropain) 26S su	Cytoplasm	other	0	0	0	0	1	0	0.00	0.48663
IPI00186139	hypothetical protein LOC65095 isoform 1	KRI1	KRI1 homolog (S. cerevisiae)	unknown	other	10	10	10	10	11	9	0.00	0.48663
IPI00215719	60S ribosomal protein L18	RPL18	ribosomal protein L18	Cytoplasm	other	0	0	0	0	1	0	0.00	0.48663
IPI00215888	Signal recognition particle 72 kDa protein	SRP72	(includ signal recognition particle 72kDa	Nucleus	kinase	0	0	1	0	0	0	0.00	0.48663
IPI00216135	Isoform 3 of Tropomyosin 1 alpha chain	TPM1	(includ tropomyosin 1 (alpha)	Cytoplasm	other	0	0	0	0	1	1	0.00	0.48663
IPI00216682	Calponin-3	CNN3	calponin 3, acidic	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00217104	Melanoma-associated antigen G1	NDNL2	necdin-like 2	Nucleus	other	1	1	1	0	1	1	0.00	0.48663
IPI00217240	WD-repeat protein 75	WDR75	WD repeat domain 75	Nucleus	other	0	4	6	4	4	3	0.00	0.48663
IPI00217466	Histone H1.3	HIST1H1D	histone cluster 1, H1d	Nucleus	other	0	0	1	0	0	0	0.00	0.48663
IPI00217841	EPB41L5 protein	EPB41L5	erythrocyte membrane protein band 4.1	Plasma Membrane	other	0	0	0	1	0	0	0.00	0.48663
IPI00217943	Isoform 2 of Ras-related protein Rab-6A	RAB6A	RAB6A, member RAS oncogene family	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00218490	Isoform 2 of Kinesin-like protein KIF13A	KIF13A	kinesin family member 13A	Cytoplasm	transporter	0	0	0	1	0	0	0.00	0.48663
IPI00219012	Proto-oncogene tyrosine-protein kinase Fyn	FYN	FYN oncogene related to SRC, FGR, YES	Plasma Membrane	kinase	0	0	0	1	0	0	0.00	0.48663
IPI00219114	Isoform p135 of Dynactin-1	DCTN1	dynactin 1	Cytoplasm	other	0	0	0	1	0	0	0.00	0.48663
IPI00219147	Isoform 2 of DNA-binding protein A	CSDA	cold shock domain protein A	Nucleus	transcription regulator	1	0	1	0	0	1	0.00	0.48663
IPI00219340	Isoform 2 of Dual specificity protein kinase CLK3	CLK3	CDC-like kinase 3	Nucleus	kinase	0	0	3	0	3	0	0.00	0.48663
IPI00219420	Structural maintenance of chromosomes 3	SMC3	structural maintenance of chromosomes 3	Nucleus	other	9	7	8	9	8	7	0.00	0.48663
IPI00219446	Phosphatidylethanolamine-binding protein 1	PEBP1	phosphatidylethanolamine binding protein 1	Cytoplasm	other	0	0	1	1	1	1	0.00	0.48663
IPI00219604	Dual specificity mitogen-activated protein kinase kinase 1	MAP2K1	mitogen-activated protein kinase kinase 1	Cytoplasm	kinase	0	0	0	1	0	0	0.00	0.48663
IPI00219675	Isoform B of Ras-related C3 botulinum toxin substrate 1 precursor	RAC1	ras-related C3 botulinum toxin substrate 1	Plasma Membrane	enzyme	1	1	1	1	1	1	0.00	0.48663
IPI00220038	Isoform B of Arsenite-resistance protein 2	SRRT	serrate RNA effector molecule homolog	Nucleus	other	3	4	3	4	2	4	0.00	0.48663
IPI00220317	DNA polymerase alpha catalytic subunit	POLA1	polymerase (DNA directed), alpha 1, catalytic	Nucleus	enzyme	2	2	0	3	1	0	0.00	0.48663
IPI00220349	eukaryotic translation initiation factor 2C, 2	EIF2C2	eukaryotic translation initiation factor 2C, 2	Cytoplasm	translation regulator	0	0	0	0	1	0	0.00	0.48663
IPI00220834	ATP-dependent DNA helicase 2 subunit 2	XRC5	X-ray repair complementing defective replication 5	Nucleus	enzyme	0	1	0	0	0	0	0.00	0.48663
IPI00220993	Isoform CNPI of 2',3'-cyclic-nucleotide 3'-phosphodiesterase	CNP	2',3'-cyclic nucleotide 3' phosphodiesterase	Cytoplasm	enzyme	0	0	0	1	1	1	0.00	0.48663
IPI00221232	Guanine nucleotide-binding protein G(i)/G(s)/G(o) gamma-12 subunit 2	GNG12	guanine nucleotide binding protein (G protein)	Plasma Membrane	enzyme	1	1	1	1	1	1	0.00	0.48663
IPI00242962	KIAA1618 protein (Fragment)	RNF213	ring finger protein 213	Plasma Membrane	other	2	0	2	1	3	0	0.00	0.48663
IPI00246058	PDCD6IP protein	PDCD6IP	programmed cell death 6 interacting protein 1	Cytoplasm	other	0	0	0	0	1	0	0.00	0.48663
IPI00253323	hypothetical protein LOC65124	ANKRD57	ankyrin repeat domain 57	Nucleus	transcription regulator	0	0	1	0	0	0	0.00	0.48663
IPI00256684	Isoform B of AP-2 complex subunit alpha-1	AP2A1	adaptor-related protein complex 2, alpha 1	Cytoplasm	transporter	1	0	0	0	1	1	0.00	0.48663
IPI00289086	Isoform 1 of Protein C20orf112	C20orf112	chromosome 20 open reading frame 112	unknown	other	1	1	0	1	1	1	0.00	0.48663
IPI00289907	forty-two-three domain containing 1 isoform 1	FYTTD1	forty-two-three domain containing 1	Nucleus	other	4	3	2	4	0	4	0.00	0.48663
IPI00290204	Isoform 1 of U1 small nuclear ribonucleoprotein 70 kDa	SNRNP70	small nuclear ribonucleoprotein 70kDa	Nucleus	other	3	4	0	4	2	2	0.00	0.48663
IPI00290305	TP53-regulating kinase	TP53RK	TP53 regulating kinase	Nucleus	kinase	1	0	0	0	0	0	0.00	0.48663
IPI00290461	Eukaryotic translation initiation factor 3 subunit 1	EIF3J	eukaryotic translation initiation factor 3, subunit 3	Cytoplasm	translation regulator	1	0	0	0	0	1	0.00	0.48663
IPI00290566	T-complex protein 1 subunit alpha	TCP1	t-complex 1	Cytoplasm	other	0	0	0	0	0	1	0.00	0.48663
IPI00291005	Malate dehydrogenase, cytoplasmic	MDH1	malate dehydrogenase 1, NAD (soluble)	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00291016	NADH-ubiquinone oxidoreductase flavoprotein 3 isoform precursor	NDUFB3	NADH dehydrogenase (ubiquinone) flavoprotein 3	Cytoplasm	enzyme	0	1	0	1	0	0	0.00	0.48663
IPI00291510	Inosine 5'-monophosphate dehydrogenase 2	IMPDH2	IMP (inosine 5'-monophosphate) dehydrogenase 2	Cytoplasm	enzyme	1	0	0	1	0	0	0.00	0.48663
IPI00291646	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1	MTHFD1L	methylenetetrahydrofolate dehydrogenase 1-like	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00291930	Isoform 1 of Epsin-4	CLINT1	clathrin interactor 1	Cytoplasm	other	2	4	2	3	4	0	0.00	0.48663
IPI00293338	SMC5 structural maintenance of chromosomes 5-like 1	SMC5	structural maintenance of chromosomes 5-like 1	Nucleus	other	0	0	0	1	0	0	0.00	0.48663
IPI00293655	ATP-dependent RNA helicase DDX1	DDX1	DEAD (Asp-Glu-Ala-Asp) box polypeptide 1	Nucleus	enzyme	1	0	0	1	1	0	0.00	0.48663
IPI00294603	Zinc finger protein 198	ZMYM2	zinc finger, MYM-type 2	Nucleus	other	0	0	0	0	0	1	0.00	0.48663
IPI00296078	zinc finger transcription factor TRPS1	TRPS1	trichorhinophalangeal syndrome 1	Nucleus	transcription regulator	1	1	1	0	0	0	0.00	0.48663
IPI00296362	Isoform 1 of Abnormal spindle-like microcephaly-associated protein	ASPM	asp (abnormal spindle) homolog, microcephaly-associated	Nucleus	other	0	0	0	0	0	1	0.00	0.48663
IPI00296907	Isoform 1 of Acyl-coenzyme A oxidase 1, peroxisomal	ACO1	acyl-CoA oxidase 1, palmitoyl	Cytoplasm	enzyme	1	1	1	0	1	1	0.00	0.48663
IPI00297452	TRK-fused gene/anaplastic large cell lymphoma kinase extra long	TFG	TRK-fused gene	Cytoplasm	other	0	0	0	1	0	0	0.00	0.48663
IPI00297477	U2 small nuclear ribonucleoprotein A'	SNRPA1	small nuclear ribonucleoprotein polypeptide A1	Nucleus	other	0	0	1	0	1	1	0.00	0.48663
IPI00297851	chromodomain helicase DNA binding protein 1	CHD1	chromodomain helicase DNA binding protein 1	Nucleus	enzyme	2	3	0	2	2	2	0.00	0.48663
IPI00297931	Isoform 1 of AP1 gamma subunit-binding protein 1	SYNRG	synergin, gamma	Cytoplasm	other	3	3	0	3	3	0	0.00	0.48663
IPI00298057	Periplakin	PPL	periplakin	Cytoplasm	other	2	2	2	2	2	2	0.00	0.48663
IPI00298058	Isoform 1 of Transcription elongation factor SPT5	SUPT5H	suppressor of Ty 5 homolog (S. cerevisiae)	Nucleus	transcription regulator	0	1	0	0	1	0	0.00	0.48663
IPI00298618	CDNA FLJ36810 fis. clone ASTRO2001249	EIF1AD	eukaryotic translation initiation factor 1A	unknown	other	0	0	0	1	0	0	0.00	0.48663
IPI00298731	Serine/threonine-protein phosphatase 1 regulatory subunit 10	PPP1R10	protein phosphatase 1, regulatory subunit 10	Nucleus	other	2	4	4	3	4	3	0.00	0.48663
IPI00298870	Transmembrane protein 1	TRAPP3	trafficking protein particle complex 10	Cytoplasm	transporter	1	0	0	0	0	0	0.00	0.48663
IPI00299024	Brain acid soluble protein 1	BASP1	brain abundant, membrane attached signaling protein 1	Nucleus	transcription regulator	0	0	0	1	1	0	0.00	0.48663
IPI00299417	Protein C22orf19	THOC5	THO complex 5	Cytoplasm	other	4	2	2	3	3	2	0.00	0.48663
IPI00299547	Neutrophil gelatinase-associated lipocalin precursor	LCN2	lipocalin 2	Extracellular Space	transporter	0	0	1	0	0	0	0.00	0.48663
IPI00299608	Isoform 1 of 26S proteasome non-ATPase regulatory subunit 1	PSMD1	proteasome (prosome, macropain) 26S subunit 1	Cytoplasm	other	4	1	3	2	3	3	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00299904	Isoform 1 of DNA replication licensing factor MCM7	MCM7	minichromosome maintenance complex c	Nucleus	enzyme	1	1	1	1	0	0	0.00	0.48663
IPI00300127	N-acetyltransferase-like protein	NAT10	N-acetyltransferase 10 (GCN5-related)	Nucleus	enzyme	0	0	0	0	0	1	0.00	0.48663
IPI00300562	Ras-related protein Rab-3B	RAB3B	RAB3B, member RAS oncogene family	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00300956	Isoform 1 of Ribonuclease III	DROSHA	droscha, ribonuclease type III	Nucleus	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00301109	Isoform 1 of Inorganic pyrophosphatase 2, mitochondrial precurs	PPA2 (includ	pyrophosphatase (inorganic) 2	Cytoplasm	enzyme	1	0	1	0	0	0	0.00	0.48663
IPI00301936	ELAV-like protein 1	ELAVL1	ELAV (embryonic lethal, abnormal vision,	Cytoplasm	other	1	1	0	1	1	1	0.00	0.48663
IPI00302149	Isoform 1 of Polyhomeotic-like protein 3	PHC3	polyhomeotic homolog 3 (Drosophila)	Nucleus	other	6	0	5	6	0	5	0.00	0.48663
IPI00302151	Hypothetical protein CCDC87	CCDC87	coiled-coil domain containing 87	unknown	other	0	1	0	0	0	0	0.00	0.48663
IPI00302990	WD-repeat protein 55	WDR55	WD repeat domain 55	Nucleus	other	0	1	0	0	0	0	0.00	0.48663
IPI00303722	Hypothetical protein FLJ14668	FAM136A	family with sequence similarity 136, mem	Cytoplasm	other	0	0	0	0	0	1	0.00	0.48663
IPI00304596	Non-POU domain-containing octamer-binding protein	NONO	non-POU domain containing, octamer-bir	Nucleus	other	1	1	1	1	1	0	0.00	0.48663
IPI00305068	U5 snRNP-associated 102 kDa protein	PRPF6	PRP6 pre-mRNA processing factor 6 hom	Nucleus	transcription regulator	0	0	0	0	1	0	0.00	0.48663
IPI00305374	THO complex subunit 1	THOC1	THO complex 1	Nucleus	transcription regulator	4	1	1	2	2	2	0.00	0.48663
IPI00305589	Isoform 1 of 6-phosphofructo-2-kinase/fructose-2,6-biphosphata	PFKFB2	6-phosphofructo-2-kinase/fructose-2,6-bij	Cytoplasm	kinase	0	4	5	4	5	0	0.00	0.48663
IPI00306043	Isoform 1 of YTH domain protein 2	YTHDF2	YTH domain family, member 2	unknown	other	0	0	0	1	0	0	0.00	0.48663
IPI00306195	CDNA FLJ30949 fis, clone HCASM1000021, weakly similar to Plas	AKT1S1	AKT1 substrate 1 (proline-rich)	Cytoplasm	other	5	6	6	5	6	6	0.00	0.48663
IPI00306332	60S ribosomal protein L24	RPL24	ribosomal protein L24	Cytoplasm	other	0	0	1	0	0	0	0.00	0.48663
IPI00306382	Isoform 1 of Secretory carrier-associated membrane protein 3	SCAMP3	secretory carrier membrane protein 3	Cytoplasm	transporter	0	0	0	0	0	1	0.00	0.48663
IPI00306749	Kanadaplin	SLC4A1AP	solute carrier family 4 (anion exchanger),	Cytoplasm	transporter	8	8	7	6	8	9	0.00	0.48663
IPI00306840	Sphingosine-1-phosphate phosphatase 1	SGPP1	sphingosine-1-phosphate phosphatase 1	Cytoplasm	phosphatase	6	5	7	4	6	8	0.00	0.48663
IPI00307733	huntingtin interacting protein B	SETD2	SET domain containing 2	Cytoplasm	enzyme	5	4	5	5	6	3	0.00	0.48663
IPI00328306	Zinc finger CCCH-type domain-containing protein 11A					3	0	3	3	0	3	0.00	0.48663
IPI00328307	Long chain polyunsaturated fatty acid elongation enzyme	ELOVL5	ELOVL fatty acid elongase 5	Cytoplasm	enzyme	0	0	0	0	0	1	0.00	0.48663
IPI00328688	Isoform 1 of Sex comb on midleg-like protein 2	SCML2	sex comb on midleg-like 2 (Drosophila)	Nucleus	transcription regulator	0	0	0	0	1	0	0.00	0.48663
IPI00328905	185 kDa protein	IQGAP3	IQ motif containing GTPase activating prc	Plasma Membrane	other	4	5	5	5	5	4	0.00	0.48663
IPI00333010	SR-related CTD associated factor 6	CHERP	calcium homeostasis endoplasmic reticul	Cytoplasm	other	1	0	0	0	1	0	0.00	0.48663
IPI00333913	neuroblastoma-amplified protein	NBAS	neuroblastoma amplified sequence	unknown	other	0	0	0	0	1	0	0.00	0.48663
IPI00334190	Stomatin-like protein 2	STOML2	stomatin (EPB72)-like 2	Plasma Membrane	other	1	1	1	1	1	1	0.00	0.48663
IPI00336000	Isoform 6 of Zinc finger CCHC domain-containing protein 6	ZCCHC6	zinc finger, CCHC domain containing 6	unknown	enzyme	1	0	0	0	0	0	0.00	0.48663
IPI00337741	Acylamino-acid-releasing enzyme	APEH	N-acylaminoacyl-peptide hydrolase	Cytoplasm	peptidase	0	0	0	1	0	0	0.00	0.48663
IPI00339381	Isoform 1 of SWI/SNF-related matrix-associated actin-dependent	HLTF	helicase-like transcription factor	Nucleus	transcription regulator	0	0	0	0	1	0	0.00	0.48663
IPI00374065	PREDICTED: similar to melanoma inhibitory activity 3 isoform 1					1	1	2	0	2	1	0.00	0.48663
IPI00377222	WD repeat domain 20 isoform 4	WDR20	WD repeat domain 20	unknown	other	0	3	2	3	2	0	0.00	0.48663
IPI00377261	Isoform 1 of Far upstream element-binding protein 3	FUBP3	far upstream element (FUSE) binding prot	Nucleus	transcription regulator	0	0	0	1	0	1	0.00	0.48663
IPI00383085	FLJ00144 protein (Fragment)					1	0	0	0	0	0	0.00	0.48663
IPI00384028	poly(A) polymerase alpha	PAPOLA	poly(A) polymerase alpha	Nucleus	enzyme	3	3	1	0	3	3	0.00	0.48663
IPI00384176	Isoform 1 of Protein polybromo-1	PBRM1	polybromo 1	Nucleus	other	2	4	4	3	3	4	0.00	0.48663
IPI00384556	Ribosomal RNA upstream binding transcription factor (Fragment)	UBTF	upstream binding transcription factor, RN	Nucleus	transcription regulator	1	2	0	2	0	0	0.00	0.48663
IPI00384861	Isoform 1 of ARF GTPase-activating protein GIT1	GIT1 (includ	G protein-coupled receptor kinase intera	Nucleus	other	4	0	2	3	2	2	0.00	0.48663
IPI00384867	Isoform 2 of Adenosine 3'-phospho 5'-phosphosulfate transporte	SLC35B2	solute carrier family 35, member B2	Cytoplasm	transporter	2	0	3	0	3	2	0.00	0.48663
IPI00384909	CDNA FLJ12811 fis, clone NT2RP2002475	KIDINS220	kinase D-interacting substrate, 220kDa	Nucleus	transcription regulator	0	0	0	0	0	1	0.00	0.48663
IPI00386189	Isoform 1 of NMDA receptor-regulated protein 1	NAA15	N(alpha)-acetyltransferase 15, NatA auxili	Nucleus	transcription regulator	0	0	0	1	1	0	0.00	0.48663
IPI00386718	Isoform Short of Probable global transcription activator SNF2L2	SMARCA2	SWI/SNF related, matrix associated, actin	Nucleus	transcription regulator	3	2	3	2	3	3	0.00	0.48663
IPI00396010	RAB GTPase activating protein 1-like isoform A	RABGAP1L	RAB GTPase activating protein 1-like	Cytoplasm	other	2	0	0	2	0	0	0.00	0.48663
IPI00396063	Pseudogene candidate	DENND4A	DENN/MADD domain containing 4A	Nucleus	other	0	0	0	0	0	1	0.00	0.48663
IPI00396421	Protein KIAA0776	UFL1	UFM1-specific ligase 1	Cytoplasm	other	1	0	0	1	0	0	0.00	0.48663
IPI00396627	Isoform 1 of Zinc phosphodiesterase ELAC protein 2	ELAC2	elaC homolog 2 (E. coli)	Nucleus	enzyme	2	0	0	1	2	0	0.00	0.48663
IPI00397380	Isoform 2 of Epsin-2	EPN2	epsin 2	Cytoplasm	other	4	6	4	6	4	4	0.00	0.48663
IPI00397526	Myosin-10	MYH10	myosin, heavy chain 10, non-muscle	Cytoplasm	other	2	2	2	2	2	2	0.00	0.48663
IPI00398002	plectin 1 isoform 1	PLEC	plectin	Cytoplasm	other	0	0	1	0	0	0	0.00	0.48663
IPI00398625	Hornerin	HRNR	hornerin	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663
IPI00398786	Isoform 2 of Protein C14orf133	C14orf133	chromosome 14 open reading frame 133	Plasma Membrane	other	0	0	1	0	0	0	0.00	0.48663
IPI00398922	Similar to Protein phosphatase 1 regulatory subunit 14B	PPP1R14B	protein phosphatase 1, regulatory (inhibit	Cytoplasm	phosphatase	1	1	1	1	0	0	0.00	0.48663
IPI00411636	Isoform 1 of Beta-catenin-like protein 1	CTNBL1	catenin, beta like 1	Nucleus	other	1	0	0	1	1	1	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	p-value
IPI00411765	SFN protein	SFN	stratifin	Cytoplasm	other	0	0	0	0	1	0	0.00	0.48663
IPI00412415	Isoform 1 of Bromodomain adjacent to zinc finger domain prote	BAZ1A	bromodomain adjacent to zinc finger dor	Nucleus	other	16	14	12	12	17	13	0.00	0.48663
IPI00413895	Golgi autoantigen, golgin subfamily A member 2	GOLGA2	golgin A2	Cytoplasm	other	0	0	1	0	0	0	0.00	0.48663
IPI00414554	Actin related protein 2/3 complex, subunit 5-like	ARPC5L	actin related protein 2/3 complex, subuni	unknown	other	0	0	0	0	1	1	0.00	0.48663
IPI00414779	DNA excision repair protein ERCC-6	ERCC6	excision repair cross-complementing ro	Nucleus	transcription regulator	0	0	1	0	0	1	0.00	0.48663
IPI00414836	Osteoclast-stimulating factor 1	OSTF1	osteoclast stimulating factor 1	Nucleus	transcription regulator	1	0	1	0	0	0	0.00	0.48663
IPI00415054	Protein KIAA0329/KIAA0297	TECP2	tectonin beta-propeller repeat containi	unknown	other	1	0	1	0	0	0	0.00	0.48663
IPI00418234	Methyl-CpG-binding protein 2	MECP2	methyl CpG binding protein 2 (Rett syndr	Nucleus	transcription regulator	3	5	4	3	5	4	0.00	0.48663
IPI00418340	hypothetical protein LOC6936	GCFC2	GC-rich sequence DNA-binding factor 2	Nucleus	transcription regulator	2	0	0	2	0	0	0.00	0.48663
IPI00419273	Isoform 1 of Cullin-4A	CUL4A	cullin 4A	Nucleus	other	0	0	0	0	0	1	0.00	0.48663
IPI00419531	Cleavage and polyadenylation specificity factor, 100 kDa subunit	CPSF2	cleavage and polyadenylation specific fac	Nucleus	other	0	1	0	0	0	0	0.00	0.48663
IPI00419880	40S ribosomal protein S3a	RPS3A	ribosomal protein S3A	Cytoplasm	other	2	1	1	1	1	2	0.00	0.48663
IPI00440727	Isoform 1 of Bromodomain-containing protein 4	BRD4	bromodomain containing 4	Nucleus	kinase	3	1	2	2	0	3	0.00	0.48663
IPI00442073	Cysteine and glycine-rich protein 1	CSRP1	cysteine and glycine-rich protein 1	Nucleus	other	1	1	0	0	0	0	0.00	0.48663
IPI00442167	CDNA FLJ16400 fis, clone TUTER2000057, moderately similar to t	AEBP2	AE binding protein 2	Nucleus	transcription regulator	0	0	2	2	0	0	0.00	0.48663
IPI00446377	CDNA FLJ41744 fis, clone HSYRA2005496, highly similar to ENDC					0	0	0	1	0	0	0.00	0.48663
IPI00449049	Poly [ADP-ribose] polymerase 1	PARP1	poly (ADP-ribose) polymerase 1	Nucleus	enzyme	0	0	0	0	0	1	0.00	0.48663
IPI00449924	Isoform 2 of Retinoic acid-induced protein 1	RAI1	retinoic acid induced 1	Cytoplasm	other	4	7	6	7	6	4	0.00	0.48663
IPI00454910	Serine/threonine-protein kinase MRCK gamma	CDC42BPG	CDC42 binding protein kinase gamma (D	Cytoplasm	kinase	0	0	2	0	2	0	0.00	0.48663
IPI00456969	Dynein heavy chain, cytosolic	DYNC1H1	dynein, cytoplasmic 1, heavy chain 1	Cytoplasm	peptidase	0	0	0	1	1	1	0.00	0.48663
IPI00465275	Isoform 1 of Ran-binding protein 9	RANBP9	RAN binding protein 9	Nucleus	other	0	0	0	0	0	1	0.00	0.48663
IPI00465345	Huntingtin interacting protein C, isoform 1	PRPF40B	PRP40 pre-mRNA processing factor 40 hc	Nucleus	other	0	3	3	0	3	3	0.00	0.48663
IPI00470582	Isoform 1 of Protein C10orf118	C10orf118	chromosome 10 open reading frame 118 unknown		other	1	0	0	0	0	1	0.00	0.48663
IPI00470594	Putative MAPK activating protein	C1orf144	chromosome 1 open reading frame 144 unknown		other	2	0	0	0	2	0	0.00	0.48663
IPI00472102	Heat shock protein 60	HSPD1	heat shock 60kDa protein 1 (chaperonin)	Cytoplasm	enzyme	1	1	1	1	1	1	0.00	0.48663
IPI00472160	Rho/Rac guanine nucleotide exchange factor 2	ARHGEF2	Rho/Rac guanine nucleotide exchange fa	Cytoplasm	other	0	0	2	0	0	2	0.00	0.48663
IPI00472779	Ankyrin-3	ANK3	ankyrin 3, node of Ranvier (ankyrin G)	Plasma Membrane	other	3	0	0	3	0	0	0.00	0.48663
IPI00472794	FCH domain only 2	FCHO2	FCH domain only 2	unknown	other	2	2	1	0	2	2	0.00	0.48663
IPI00477526	Conserved hypothetical protein					0	0	3	3	0	0	0.00	0.48663
IPI00477701	golgi SNAP receptor complex member 1 isoform 2	GOSR1	golgi SNAP receptor complex member 1	Cytoplasm	transporter	2	0	1	2	1	0	0.00	0.48663
IPI00477959	TAF3 RNA polymerase II, TATA box binding protein					0	3	0	0	3	0	0.00	0.48663
IPI00478410	Isoform Liver of ATP synthase gamma chain, mitochondrial precu	ATP5C1	ATP synthase, H+ transporting, mitochondi	Cytoplasm	transporter	0	0	0	0	1	0	0.00	0.48663
IPI00479186	pyruvate kinase 3 isoform 1	PKM2	pyruvate kinase, muscle	Cytoplasm	kinase	1	1	0	1	0	0	0.00	0.48663
IPI00479262	Isoform B of Eukaryotic translation initiation factor 4 gamma 1	EIF4G1	eukaryotic translation initiation factor 4 g	Cytoplasm	translation regulator	5	5	6	6	4	6	0.00	0.48663
IPI00479359	villin 2	EZR	ezzrin	Plasma Membrane	other	0	0	0	0	1	0	0.00	0.48663
IPI00479760	AP2 associated kinase 1	AAK1	AP2 associated kinase 1	Cytoplasm	kinase	0	0	0	1	0	0	0.00	0.48663
IPI00479786	KH-type splicing regulatory protein	KHSRP	KH-type splicing regulatory protein	Nucleus	enzyme	1	1	1	1	1	1	0.00	0.48663
IPI00514669	SH3 domain binding glutamic acid-rich protein like 3	SH3BGRL3	SH3 domain binding glutamic acid-rich p	Nucleus	other	0	0	0	1	0	0	0.00	0.48663
IPI00514832	Tripartite motif protein 56	TRIM56	tripartite motif containing 56	Cytoplasm	enzyme	3	2	2	4	0	2	0.00	0.48663
IPI00550212	cytoplasmic FMR1 interacting protein 1 isoform b	CYFIP1	cytoplasmic FMR1 interacting protein 1	Cytoplasm	other	0	0	0	1	0	0	0.00	0.48663
IPI00550363	Transgelin-2	TAGLN2	transgelin 2	Cytoplasm	other	0	1	1	0	0	0	0.00	0.48663
IPI00550523	hypothetical protein LOC25923	ATL3	atlastin GTPase 3	Cytoplasm	other	0	0	0	1	1	0	0.00	0.48663
IPI00550917	Twinfilin-2	TWF2	twinfilin, actin-binding protein, homolog	Cytoplasm	kinase	1	0	0	0	0	0	0.00	0.48663
IPI00553164	40S ribosomal protein SA					0	0	1	0	0	0	0.00	0.48663
IPI00554469	Isoform 2 of Mitochondrial inner membrane protein	IMMT	inner membrane protein, mitochondrial	Cytoplasm	other	1	0	0	0	0	0	0.00	0.48663
IPI00554590	Isoform 1 of Rab3 GTPase-activating protein non-catalytic subun	RAB3GAP2	RAB3 GTPase activating protein subunit 2	Cytoplasm	enzyme	0	0	0	1	0	0	0.00	0.48663
IPI00555902	OCIA domain containing 2 isoform 1	OCIAD2	OCIA domain containing 2	Cytoplasm	other	0	0	0	0	0	1	0.00	0.48663
IPI00643920	Transketolase	TKT	transketolase	Cytoplasm	enzyme	1	0	0	0	0	0	0.00	0.48663
IPI00644209	13 kDa protein					0	0	0	0	0	1	0.00	0.48663
IPI00644521	36 kDa protein					1	0	0	0	0	0	0.00	0.48663
IPI00644591	hypothetical protein LOC64423 isoform 2	INF2	inverted formin, FH2 and WH2 domain cc	Cytoplasm	other	14	17	12	18	10	15	0.00	0.48663
IPI00645078	Ubiquitin-activating enzyme E1	UBA1	ubiquitin-like modifier activating enzyme	Cytoplasm	enzyme	0	0	1	0	0	1	0.00	0.48663
IPI00645403	hypothetical protein LOC56243	KIAA1217		Cytoplasm	other	0	1	0	0	0	1	0.00	0.48663
IPI00647650	Eukaryotic translation initiation factor 3 subunit 3	EIF3H	eukaryotic translation initiation factor 3, s	Cytoplasm	translation regulator	0	0	0	1	0	0	0.00	0.48663

**Supplemental Table 1. A list of all phosphorylated proteins identified in SNU216 and SNU216-LR.**

Accession	Identified Proteins	Symbol	Entrez Gene Name	Location	Type(s)	SNU216-1	SNU216-2	SNU216-3	SNU216-LR1	SNU216-LR2	SNU216-LR3	STN	<i>p</i> -value
IPI00657692	Goodpasture antigen-binding protein	COL4A3BP	collagen, type IV, alpha 3 (Goodpasture a	Cytoplasm	kinase	0	0	1	1	0	0	0.00	0.48663
IPI00658000	insulin-like growth factor 2 mRNA binding protein 3	IGF2BP3	insulin-like growth factor 2 mRNA bindin	Cytoplasm	translation regulator	1	1	0	0	0	0	0.00	0.48663
IPI00735331	PREDICTED: AF-1 specific protein phosphatase isoform 5					0	0	0	1	1	0	0.00	0.48663
IPI00738223	PREDICTED: similar to rho guanine nucleotide exchange factor 5	ARRHGEF35	Rho guanine nucleotide exchange factor	unknown	other	0	0	0	0	1	1	0.00	0.48663
IPI00738806	PREDICTED: myosin VIIIB	MYO7B	myosin VIIIB	unknown	peptidase	0	0	0	0	0	1	0.00	0.48663
IPI00742905	146 kDa protein					1	1	3	1	2	2	0.00	0.48663
IPI00743314	General vesicular transport factor p115	USO1	USO1 vesicle docking protein homolog (γ	Cytoplasm	transporter	9	6	9	10	6	8	0.00	0.48663
IPI00744288	Isoform 5 of C-jun-amino-terminal kinase-interacting protein 4	SPAG9	sperm associated antigen 9	Plasma Membrane	other	18	17	19	15	22	17	0.00	0.48663
IPI00744692	Transaldolase	TALDO1	transaldolase 1	Cytoplasm	enzyme	1	1	0	0	0	0	0.00	0.48663
IPI00746221	Conserved hypothetical protein	FAM195B	family with sequence similarity 195, mem	unknown	other	0	0	0	0	1	1	0.00	0.48663
IPI00747113	Adenovirus E1B19k-binding protein B5	BNIP3L	BCL2/adenovirus E1B 19kDa interacting p	Cytoplasm	other	3	3	0	1	3	3	0.00	0.48663
IPI00006079	Isoform 1 of Bcl-2-associated transcription factor 1	BCLAF1	BCL2-associated transcription factor 1	Nucleus	transcription regulator	88	87	81	82	90	83	-0.07	0.48696

Protein IPI accession name, symbol, Entez gene name, and predicted sub-cellular localization are shown based on its description in the uniprot database. Additional column describes signal-to-noise ratio (STN) and *p*-value.