

**Table S9:** Dimethylated (naturally unmodified) N-termini identified in both replicates of the TAILS experiment comparing wild-type and *Ctsb*<sup>-/-</sup> skin.

Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
M	VQAWYMEDESTADPR	0.30	0.37	MTND_MOUSE	1,2-dihydroxy-3-keto-5-methylthiopentene dioxygenase;
M	VLESTMVCVDNSEYMR	0.08	1.80	PSMD4_MOUSE	26S proteasome non-ATPase regulatory subunit 4;
SVILQHLRMS	MHTEAAEVLLER	0.18	-0.76	HIBCH_MOUSE	3-hydroxyisobutyryl-CoA hydrolase, mitochondrial;
AYLARHVGLR	VGVPETGALTNR	-0.14	0.74	THIM_MOUSE	3-ketoacyl-CoA thiolase, mitochondrial;
MQN	DAGEFVDLYVPR	1.35	1.41	RS21_MOUSE	40S ribosomal protein S21;
SASNRIIAAK	DHASIQMNVAEVDR	-0.79	0.14	RS21_MOUSE	40S ribosomal protein S21;
FVPNDGCLNF	IEENDEVLVAGFGR	0.21	1.75	RS23_MOUSE	40S ribosomal protein S23;
IIRNVKGPVQ	EGDVLTLLESER	0.44	0.99	RS28_MOUSE	40S ribosomal protein S28;
RSIIRNVKGP	VREGDVLTLLESER	-0.84	-0.32	RS28_MOUSE	40S ribosomal protein S28;
TLTAVHDAIL	EDLVFPSEIVGKR	0.58	2.38	RS7_MOUSE	40S ribosomal protein S7;
RTLTAVHDAI	LEDLVFPSEIVGKR	0.39	3.17	RS7_MOUSE	40S ribosomal protein S7;
IHRAAAVAAM	STGTFFVVSQPLNYR	0.41	0.04	AL9A1_MOUSE	4-trimethylaminobutyraldehyde dehydrogenase;
RQMRHRSLAR	ELSGTIKEILGTAQSVGCNVDGR	-0.20	1.42	RL12_MOUSE	60S ribosomal protein L12;
SLARELSGTI	KEILGTAQSVGCNVDGR	0.73	1.43	RL12_MOUSE	60S ribosomal protein L12;
MPCKI	EEIKDFLLTAR	0.31	0.14	RL38_MOUSE	60S ribosomal protein L38;
QEVRCLETSY	ASKPTLNEVVIVSAIR	0.58	-0.15	THIL_MOUSE	Acetyl-CoA acetyltransferase, mitochondrial;
QGVMVGMGQK	DSYVGDEAQSKR	-1.15	0.30	ACTC_MOUSE	Actin, alpha cardiac muscle 1;
EETALVCDN	GSGLVKAGFAGDDAPR	0.67	-0.86	ACTC_MOUSE	Actin, alpha cardiac muscle 1;
ETTALVCDNG	SGLVKAGFAGDDAPR	0.87	0.39	ACTC_MOUSE	Actin, alpha cardiac muscle 1;
CDIDIRKDLY	ANNVMSGGTTMYPGIADR	-2.84	-3.84	ACTS_MOUSE	Actin, alpha skeletal muscle;
VCDNGSGLCK	AGFAGDDAPR	-0.69	-0.64	ACTA_MOUSE	Actin, aortic smooth muscle;
HHSFYNELRV	APEEHPTLLTEAPLNPKANR	3.03	1.06	ACTA_MOUSE	Actin, aortic smooth muscle;
TAASSSLEK	SYELPDGQVITIGNER	0.12	0.00	ACTB_MOUSE	Actin, cytoplasmic 1;
VDIRKDLYAN	TVLSGGTTMYPGIADR	0.23	0.07	ACTB_MOUSE	Actin, cytoplasmic 1;
GTVTHLCRQY	SDAPPLTLDGIKDR	0.04	0.94	ACPM_MOUSE	Acyl carrier protein, mitochondrial;
TGGRTTWARD	NATLSVEPEGR	0.76	-0.32	ACOT2_MOUSE	Acyl-coenzyme A thioesterase 2, mitochondrial;
M	APNVLASEPEIPKGIR	-0.23	0.73	KAD2_MOUSE	Adenylate kinase 2, mitochondrial;
N	VLASEPEIPKGIR	4.69	0.88	KAD2_MOUSE	Adenylate kinase 2, mitochondrial;
TQCEKIVQKY	GYTHLSTGDLLR	-1.84	-1.15	KAD1_MOUSE	Adenylate kinase isoenzyme 1;
TIKKRLETTY	NATEPVISFYDKR	-1.74	0.68	KAD1_MOUSE	Adenylate kinase isoenzyme 1;
GTQCEKIVQK	YGYTHLSTGDLLR	-1.32	-0.30	KAD1_MOUSE	Adenylate kinase isoenzyme 1;
KKRLETTYNA	TVPVISFYDKR	-0.23	0.68	KAD1_MOUSE	Adenylate kinase isoenzyme 1;
NEETIKRLE	TYYNATEPVISFYDKR	0.20	-1.22	KAD1_MOUSE	Adenylate kinase isoenzyme 1;
QKIGQPTELL	YVDAGAETMTQR	0.64	0.79	KAD1_MOUSE	Adenylate kinase isoenzyme 1;
RTFGTTGERR	AGEEAADSPPELPR	-0.20	0.32	ADXL_MOUSE	Adrenodoxin-like protein, mitochondrial;

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Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
QERQTQAVLQ	AVADKVKEDSQVPATQTLQR	-0.01	-0.58	AKA12_MOUSE	A-kinase anchor protein 12;
LDKVKSATLS	STESTASGMQDEVR	-0.18	-0.56	AKA12_MOUSE	A-kinase anchor protein 12;
LESKSNKIVQ	SVIQTAVDQFAR	-0.20	-0.84	AKA12_MOUSE	A-kinase anchor protein 12;
DQFSRSVNVS	LTQEELDSGLDELSVR	0.50	0.67	AKAP2_MOUSE	A-kinase anchor protein 2;
DVQETDTSQK	DQSPASHEIATNLGDFAIPLYR	0.00	0.28	A1AT1_MOUSE	Alpha-1-antitrypsin 1-1;
PASHEIATNL	GDFAIPLYR	0.87	1.12	A1AT1_MOUSE	Alpha-1-antitrypsin 1-1;
DQSPASHEIA	TNLGDFAIPLYR	1.25	0.68	A1AT1_MOUSE	Alpha-1-antitrypsin 1-1;
EDVQETDTSQ	KDQSPASHEIATNLGDFAIPLYR	-5.64	-1.79	A1AT2_MOUSE	Alpha-1-antitrypsin 1-2;
GTEAAAATVF	EAVPMSMPPILR	-0.30	-0.04	A1AT2_MOUSE	Alpha-1-antitrypsin 1-2;
QETDTSQKQDQ	SPASHEIATNLGDFALR	-1.56	0.03	A1AT4_MOUSE	Alpha-1-antitrypsin 1-4;
DVQETDTSQK	DQSPASHEIATNLGDFALR	0.03	-0.94	A1AT4_MOUSE	Alpha-1-antitrypsin 1-4;
VPTANAALPA	DPPASVVVGPVVVPR	1.77	0.74	FETUA_MOUSE	Alpha-2-HS-glycoprotein;
DLRHAFSPVA	SVESASGETLHSPKVGQPGAAGPVSPMCPGR	1.74	-1.40	FETUA_MOUSE	Alpha-2-HS-glycoprotein;
ASGETLHSPK	VGQPGAAGPVSPMCPGR	0.19	-0.45	FETUA_MOUSE	Alpha-2-HS-glycoprotein;
RKDAQMVHSN	ALNEDTQDELGDPR	0.43	0.94	AMRP_MOUSE	Alpha-2-macroglobulin receptor-associated protein;
LTSESSRPTR	DLSSSDLSTASKIVK	0.28	1.31	A2M_MOUSE	Alpha-2-macroglobulin;
FRAMGVPMMG	LDYSDEINQVVEVR	0.00	-0.49	A2M_MOUSE	Alpha-2-macroglobulin;
RSTCHNQNSM	SICEEFSQQADDKGCFR	1.42	-4.32	A2M_MOUSE	Alpha-2-macroglobulin;
LFRAAVPSGA	STGIYEALRLR	-0.11	1.00	ENOA_MOUSE	Alpha-enolase;
FRAAVPSGAS	TGIYEALRLR	0.36	0.04	ENOA_MOUSE	Alpha-enolase;
IIRKVVRQVD	SSGAIDTQQHEEVELR	-1.84	-1.32	ANK1_MOUSE	Ankyrin-1;
GDHSTPPSAY	GSVKPYTNFDAER	1.40	-0.34	ANXA2_MOUSE	Annexin A2;
STVHEILCKL	SLEGDHSTPPSAYGSVKPYTNFDAER	0.18	0.07	ANXA2_MOUSE	Annexin A2;
INRVYKEMYK	TDLEKDIISDTSGDFR	-0.40	-0.79	ANXA2_MOUSE	Annexin A2;
YVSDAFHKAF	LEVNEEGSEAAASTSVVITGR	0.31	0.15	ANT3_MOUSE	Antithrombin-III;
GALGCAICHG	NPVDDICIAKPR	0.78	0.96	ANT3_MOUSE	Antithrombin-III;
ESEGIGDSNF	GAPSASVAAAPAPAR	0.59	-0.42	AP1B1_MOUSE	AP-1 complex subunit beta-1;
PSPGEALHHL	LDLPCTPPPPAPIPSVR	0.01	0.76	AP1G2_MOUSE	AP-1 complex subunit gamma-like 2;
SGGGLLVDFV	SDSASAVAPLAPGSEDNFAR	0.08	-0.62	AP2A2_MOUSE	AP-2 complex subunit alpha-2;
SSSLGQQLNL	NLLENWDTLGTSTVSQLQER	-0.36	0.29	APOA1_MOUSE	Apolipoprotein A-I;
SLLGGSVQGY	MEQASKTVQDALSSVQESDIAVVAR	-1.00	-2.84	APOC3_MOUSE	Apolipoprotein C-III;
ELLSQEFLLL	TLEQKNIAVENEVR	0.84	-0.69	ASHWN_MOUSE	Ashwin;
SMSSGLEFVS	HNPPEAAAPPVAR	0.31	0.72	ATX2_MOUSE	Ataxin-2;
NLHASNTRLQ	KTGTAEMSSILEER	0.74	0.39	ATPA_MOUSE	ATP synthase subunit alpha, mitochondrial;
RNLHASNTRL	QKTGTAEMSSILEER	0.18	-1.94	ATPA_MOUSE	ATP synthase subunit alpha, mitochondrial;
LHASNTRLQK	TGTAEMSSILEER	0.85	1.53	ATPA_MOUSE	ATP synthase subunit alpha, mitochondrial;
LIIGDRQTGK	TSIAIDTIINQKR	0.30	0.65	ATPA_MOUSE	ATP synthase subunit alpha, mitochondrial;

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TKFENAFSLH	VISQHQSLGNIR	0.35	0.43	ATPA_MOUSE	ATP synthase subunit alpha, mitochondrial;
TSVVRPFAKL	VRPPVQVYIEGR	0.45	-0.62	ATPO_MOUSE	ATP synthase subunit O, mitochondrial;
QTRGFVSDSS	DSMDTGAGSIR	1.06	0.94	ATIF1_MOUSE	ATPase inhibitor, mitochondrial;
KVLQTRGFVS	DSSDSMDTGAGSIR	1.14	2.11	ATIF1_MOUSE	ATPase inhibitor, mitochondrial;
LQTRGFVSDS	SDSMDTGAGSIR	0.82	0.54	ATIF1_MOUSE	ATPase inhibitor, mitochondrial;
MKVLQTRGFV	SDSSDSMDTGAGSIR	0.56	1.14	ATIF1_MOUSE	ATPase inhibitor, mitochondrial;
VLQTRGFVSD	SSDSMDTGAGSIR	0.84	0.84	ATIF1_MOUSE	ATPase inhibitor, mitochondrial;
GMKVLQTRGF	VSDSSDSMDTGAGSIR	0.65	1.17	ATIF1_MOUSE	ATPase inhibitor, mitochondrial;
ENALGLDQQF	AGLDLNSSDNQSGGSTASKGR	0.00	-4.32	DDX3X_MOUSE	ATP-dependent RNA helicase DDX3X;
ASSREGSPAR	SGTPVHCPSPIR	-0.58	0.26	BAG3_MOUSE	BAG family molecular chaperone regulator 3;
EVREAKPALK	SSVETQPAEEVR	0.07	0.20	E41L2_MOUSE	Band 4.1-like protein 2;
KDWSFYLAH	TEFTPTETDTYACR	0.51	2.61	B2MG_MOUSE	Beta-2-microglobulin;
MATRSCVSRG	SAGSAAAGPVEAAIR	-0.25	-0.15	BOLA1_MOUSE	Bola-like protein 1; Brain-specific angiogenesis inhibitor 1-associated protein 2;
LSASKSNLVI	SDPIPGAKPLPVPELAPFVGR	0.60	0.76	BAIP2_MOUSE	
RGKTKATKSC	SPPPPPEPTSEGR	0.65	0.42	BCAS1_MOUSE	Breast carcinoma-amplified sequence 1 homolog;
TIDCDVITLM	GTPSGTAEPYDGTKAR	0.44	0.55	BSDC1_MOUSE	BSD domain-containing protein 1;
TGTGTLILLV	LDVNDNAPIPEPR	0.95	1.11	CADH1_MOUSE	Cadherin-1;
LLSQVLLVTS	ADDLECTPGFQR	0.04	-0.36	CAD13_MOUSE	Cadherin-13;
RTSPVPRQKR	SIVVSPILIPENQR	0.36	-0.14	CAD13_MOUSE	Cadherin-13;
NSGSLVVEEF	MSLPELQQNPLVQR	-0.74	0.41	CANB1_MOUSE	Calcineurin subunit B type 1;
AMRILGGVIS	AISEAAAQYNPEPPPPR	0.00	0.25	CPNS1_MOUSE	Calpain small subunit 1;
RSAPPKLASL	KGVVPEDAVETLAGSLGTR	0.08	-1.12	ICAL_MOUSE	Calpastatin;
VVLDPMYSTY	LEALGIKEGTIPPEYR	1.06	0.64	ICAL_MOUSE	Calpastatin;
VPRASMCSIR	SAPPKLASLKGVVPEDAVETLAGSLGTR	-0.25	0.83	ICAL_MOUSE	Calpastatin;
SIRSAPPKLA	SLKGVVPEDAVETLAGSLGTR	-0.23	-0.79	ICAL_MOUSE	Calpastatin;
TISLQMGTNK	CASQVGMTAPGTR	-0.38	-0.17	CNN2_MOUSE	Calponin-2;
TISLQMGTNK	GASQAGMLAPGTR	-0.47	-0.11	CNN3_MOUSE	Calponin-3;
FDQTTISLQM	GTNKGASQAGMLAPGTR	0.88	1.40	CNN3_MOUSE	Calponin-3;
LAAADPAIYF	KEQFLDGDWNTNR	-1.56	0.28	CALR_MOUSE	Calreticulin;
LLGLLGLAAA	DPAIYFKEQFLDGDWNTNR	-0.43	-1.47	CALR_MOUSE	Calreticulin;
LGLAAADPAI	YFKEQFLDGDWNTNR	1.64	1.28	CALR_MOUSE	Calreticulin;
LGTPLRGVQG	EDGLDFPEYDGVDR	-0.92	-1.18	CASQ1_MOUSE	Calsequestrin-1;
PSSSGAATTV	SEKPGKAAEVGDDFLGDFVVGGER	-2.74	-2.06	CLIP2_MOUSE	CAP-Gly domain-containing linker protein 2;
QMAKLRSLSF	SAENEPVPLVGNWRPPQPVKGR	0.04	-0.38	CAH3_MOUSE	Carbonic anhydrase 3;
DQMAKLRSLSF	SSAENEPVPLVGNWRPPQPVKGR	-0.84	1.26	CAH3_MOUSE	Carbonic anhydrase 3;
IKTKGKEAPF	THFDPSCFLPACR	0.20	-0.22	CAH3_MOUSE	Carbonic anhydrase 3;

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M	KLNFSGLR	0.42	-0.49	CBR2_MOUSE	Carbonyl reductase [NADPH] 2;
NPGHLSFRAL	GLDEGEPAGSWDLTVEGR	-1.25	-0.04	CPN2_MOUSE	Carboxypeptidase N subunit 2;
MAWNETADLG	LDIGAQGEALGYR	0.71	-0.20	CTNB1_MOUSE	Catenin beta-1;
PKLPGRVAFG	EDIDLPEFDAR	-5.64	-5.64	CATB_MOUSE	Cathepsin B;
KTVTFRSYSN	RTLPTVDWR	0.26	-0.54	CATS_MOUSE	Cathepsin S;
SCLVLAARHA	SASSTNLKDVLSNLPKEQAR	-2.56	-1.40	CISY_MOUSE	Citrate synthase, mitochondrial;
LIWDNGMVLG	EQEVSDNELQELSTQGSR	-0.18	1.16	CLUS_MOUSE	Clusterin;
DNGMVLGEQE	VSDNELQELSTQGSR	0.52	0.86	CLUS_MOUSE	Clusterin;
APPWKDSKKF	KDAPDGPVVLTVDGR	-6.64	-6.64	FA12_MOUSE	Coagulation factor XII;
LLILSGELYA	EKQCDFPTVENGR	-0.12	0.21	F13B_MOUSE	Coagulation factor XIII B chain;
RRAPAAQPPA	AAAPSAVGSPAAAPR	0.23	-0.45	CHCH2_MOUSE	Coiled-coil-helix-coiled-coil-helix domain-containing protein 2, mitochondrial;
MRAAPR	RAPAAQPPAAAAPSAVGSPAAAPR	-0.27	10.41	CHCH2_MOUSE	Coiled-coil-helix-coiled-coil-helix domain-containing protein 2, mitochondrial;
NFASQMSYGY	DEKSAGVSVPGPMGPGSPR	-0.38	-2.40	CO1A1_MOUSE	Collagen alpha-1(I) chain;
GATALLTHGQ	EDIPEVSCIHNGLR	-0.92	0.76	CO1A1_MOUSE	Collagen alpha-1(I) chain;
GPAGKNGDRG	ETGPAGPAGPIGPAGAR	2.64	1.47	CO1A1_MOUSE	Collagen alpha-1(I) chain;
PGPVGPAGKN	GDRGETGPAGPAGPIGPAGAR	2.32	1.54	CO1A1_MOUSE	Collagen alpha-1(I) chain;
EYVSPNSEDV	GVEGPKGDPGPQGPR	0.77	1.10	CO1A1_MOUSE	Collagen alpha-1(I) chain;
PGLGGNFASQ	MSYGYDEKSAGVSVPGPMGPGSPR	0.88	-0.34	CO1A1_MOUSE	Collagen alpha-1(I) chain;
LGATALLTHG	QEDIPEVSCIHNGLR	0.25	-2.84	CO1A1_MOUSE	Collagen alpha-1(I) chain;
SQMSYGYDEK	SAGVSVPGPMGPGSPR	0.35	0.04	CO1A1_MOUSE	Collagen alpha-1(I) chain;
PAGKNGDRGE	TGPAGPAGPIGPAGAR	1.97	1.35	CO1A1_MOUSE	Collagen alpha-1(I) chain;
LGGNFASQMS	YGYDEKSAGVSVPGPMGPGSPR	1.24	-5.64	CO1A1_MOUSE	Collagen alpha-1(I) chain;
LLHPTLILAQ	QSNVDELGCShLGQSYESR	0.82	0.03	CO3A1_MOUSE	Collagen alpha-1(III) chain;
GLPGSMGPPG	TPSVDHGFLVTR	1.23	2.04	CO4A1_MOUSE	Collagen alpha-1(IV) chain;
GPRGERGTPG	ESGAAGPSGPIGSR	1.18	1.44	CO1A2_MOUSE	Collagen alpha-2(I) chain;
GNFAAQYSDK	GVSSGPGPMGLMGPR	0.38	0.11	CO1A2_MOUSE	Collagen alpha-2(I) chain;
GLTGNFAAQY	SDKGVSSGPGPMGLMGPR	0.00	-0.06	CO1A2_MOUSE	Collagen alpha-2(I) chain;
AAQYSDKGVS	SGPGPMGLMGPR	1.82	-1.18	CO1A2_MOUSE	Collagen alpha-2(I) chain;
PSGPVGDGR	SGQPGVPAGVR	0.36	0.14	CO1A2_MOUSE	Collagen alpha-2(I) chain;
PGLTGNFAAQ	YSDKGVSSGPGPMGLMGPR	1.98	-2.00	CO1A2_MOUSE	Collagen alpha-2(I) chain;
EKLGQGGVQK	VDVPAADLSDQVPDTSR	0.49	-0.30	CO3_MOUSE	Complement C3;
DPLNNLGRRL	EIPGSSDPNIVPDGDFSSLVR	0.59	0.38	CO4B_MOUSE	Complement C4-B;
AAVCAQPRGR	ILGGQEAAAAR	0.04	0.16	CFAD_MOUSE	Complement factor D;
KPRESEKVKI	TKVDFAGEEVR	2.21	0.77	CFDP1_MOUSE	Craniofacial development protein 1;
AGDEESYDVF	KDLFDPIIEER	-0.12	0.21	KCRB_MOUSE	Creatine kinase B-type;

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QQLIDHFLF	DKPVSPLLLASGMAR	0.35	0.83	KCRM_MOUSE	Creatine kinase M-type;
GIWHNDNKSF	LVVWNEEDHLR	-1.06	-0.76	KCRM_MOUSE	Creatine kinase M-type;
KKAGHPFMWN	EHLGYVLTCPNLTGLR	0.01	-2.84	KCRM_MOUSE	Creatine kinase M-type;
QQQLIDHFL	FDKPVSPLLLASGMAR	0.67	-1.25	KCRM_MOUSE	Creatine kinase M-type;
ILTRLRLQKR	GTGGVDTAAVGAVFDISNADR	1.86	2.01	KCRM_MOUSE	Creatine kinase M-type;
RLRLQKRG	GVDTAAVGAVFDISNADR	0.21	0.16	KCRM_MOUSE	Creatine kinase M-type;
AGDEESYTVF	KDLFDPIIQDR	-0.45	-0.94	KCRM_MOUSE	Creatine kinase M-type;
KHKTDLNHEN	LKGGDDLPNYVLSSR	0.20	-0.89	KCRM_MOUSE	Creatine kinase M-type;
LQKRGTTGGVD	TAAVGAVFDISNADR	0.20	-0.12	KCRM_MOUSE	Creatine kinase M-type;
LTRLRLQKRG	TGGVDTAAVGAVFDISNADR	0.79	0.62	KCRM_MOUSE	Creatine kinase M-type;
GCVAGDEESY	TVFKDLFDPIIQDR	-0.12	-0.17	KCRM_MOUSE	Creatine kinase M-type;
LRLQKRGTTGG	VDTAAVGAVFDISNADR	0.37	0.31	KCRM_MOUSE	Creatine kinase M-type;
PFMWNEHLGY	VLTCPNLTGLR	0.16	0.40	KCRM_MOUSE	Creatine kinase M-type;
LSKHNNHMAK	VLTPDLYNKLK	-0.32	0.33	KCRM_MOUSE	Creatine kinase M-type;
IWHNDNKSFL	VVWNEEDHLR	-0.22	-1.18	KCRM_MOUSE	Creatine kinase M-type;
AGDEESYEVF	ADLFDPIIKLR	-0.43	0.37	KCRS_MOUSE	Creatine kinase S-type, mitochondrial;
ATPKQGPRML	GAPEEADANEEGVR	0.60	0.47	CYTC_MOUSE	Cystatin-C;
WAATPKQGPR	MLGAPEEADANEEGVR	-0.12	0.49	CYTC_MOUSE	Cystatin-C;
KVCYAKNFGP	TGIGFGGLTQQVEKK	-2.18	-0.22	CSRP3_MOUSE	Cysteine and glycine-rich protein 3;
VCYGRRYGP	GIGFGQGAGCLSTDTGEHLGLQFQQSPKPAR	0.07	-0.01	CSRP3_MOUSE	Cysteine and glycine-rich protein 3;
GSYIEKPQT	EAPQVTGPIEVPVVR	1.25	-0.74	CRIP2_MOUSE	Cysteine-rich protein 2;
NIGGAGSYI	EKPQTEAPQVTGPIEVPVVR	0.70	3.43	CRIP2_MOUSE	Cysteine-rich protein 2;
VNIGGAGSYI	YEKQTEAPQVTGPIEVPVVR	0.89	4.92	CRIP2_MOUSE	Cysteine-rich protein 2;
EDERKMLTGS	GDPKEEEEEELVDPLTTVR	-0.14	-0.04	QCR6_MOUSE	Cytochrome b-c1 complex subunit 6, mitochondrial;
ISTSVCLRAH	GSVVKSEDYAFPTYADR	0.64	-1.64	COX41_MOUSE	Cytochrome c oxidase subunit 4 isoform 1, mitochondrial;
EEFDARWVTY	FNKPDIDAWELR	-1.79	-0.30	COX5A_MOUSE	Cytochrome c oxidase subunit 5A, mitochondrial;
ARGAAVTRSM	ASGGGVPTDEEQATGLER	-0.11	-0.60	COX5B_MOUSE	Cytochrome c oxidase subunit 5B, mitochondrial;
TARGAAVTRS	MASGGGVPTDEEQATGLER	-0.45	-1.18	COX5B_MOUSE	Cytochrome c oxidase subunit 5B, mitochondrial;
RGAAVTRSM	SGGGVPTDEEQATGLER	0.01	-0.79	COX5B_MOUSE	Cytochrome c oxidase subunit 5B, mitochondrial;
DFHRCEKAMT	AKGGDVSVCWEYR	-1.29	-2.25	CX6B1_MOUSE	Cytochrome c oxidase subunit 6B1;
HTVEKGGKHK	TGPNLHGLFGR	0.53	0.25	CYC_MOUSE	Cytochrome c, somatic;
VYSPLAHRAY	SVVAGGPEVTLTPER	0.79	0.52	D2HDH_MOUSE	D-2-hydroxyglutarate dehydrogenase, mitochondrial;
FEHRLGEAAR	SLGNAGNEIGR	-4.06	-1.06	DMKN_MOUSE	Dermokine;
GMLPEKDCRY	ALYDASFETKESR	-1.25	-0.92	DEST_MOUSE	Dextrin;
LLGSPRRSY	SLPPHQKVLPLSLPTMQAGTIAR	-0.25	-0.58	ODP2_MOUSE	Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex, mitochondrial;

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Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
RFFQTTAVCK	NDVITVQTPAFAESVTEGDVR	0.35	0.30	ODO2_MOUSE	Dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex, mitochondrial;
RNLHQSGFSL	SGAQIDDNIPR	-0.81	1.12	DPYL2_MOUSE	Dihydropyrimidinase-related protein 2;
QAPPVRNLHQ	SGFSLGAQIDDNIPR	2.87	2.47	DPYL2_MOUSE	Dihydropyrimidinase-related protein 2;
LPLLARLSAG	DCPCSEAALCQPIR	0.52	1.43	DIAC_MOUSE	Di-N-acetylchitobiase;
APMTDEIQQQ	ILNLPESWDWR	0.52	1.77	CATC_MOUSE	Dipeptidyl peptidase 1;
SLPSTAVTSE	TLPGSLSPPEKYR	0.37	2.33	DLG1_MOUSE	Disks large homolog 1;
M	GKDYYQTLGLAR	0.43	2.15	DNJB1_MOUSE	DnaJ homolog subfamily B member 1;
KAPEGEETEF	YVSPEDLEAQLQSDER	0.77	1.22	DNJC5_MOUSE	DnaJ homolog subfamily C member 5;
FVPMEENSIY	SSWQEVTEFPVIVQR	-0.52	-0.07	DOK3_MOUSE	Docking protein 3;
PREIFKQKER	AMSTTSVTSSQPGKLR	-1.18	-2.12	DBNL_MOUSE	Drebrin-like protein;
M	GVQPPNFSWVLPGR	0.10	0.65	DUS23_MOUSE	Dual specificity protein phosphatase 23;
LQAQRAFTTR	RQISEDVDGPDNR	0.12	0.19	NEDD4_MOUSE	E3 ubiquitin-protein ligase NEDD4;
GPEPTTDCFV	AVMHGETEGTVPGNALVVDPEKPF	0.03	0.41	EHD2_MOUSE	EH domain-containing protein 2;
VGPEPTTDCF	VAVMHGETEGTVPGNALVVDPEKPF	0.00	1.40	EHD2_MOUSE	EH domain-containing protein 2;
LKSGENFKLL	YDLADQLHAAVGASR	-0.60	0.47	ETFA_MOUSE	Electron transfer flavoprotein subunit alpha, mitochondrial;
QADCAVLIVA	AGVGFEFAGISKNGQTR	0.33	0.32	EF1A1_MOUSE	Elongation factor 1-alpha 1;
TDKPLRLPLQ	DVYKIGGIGTVPVGR	-0.14	-0.11	EF1A1_MOUSE	Elongation factor 1-alpha 1;
DGSASGTTLL	EALDCILPPTPTDKPLR	1.49	1.58	EF1A1_MOUSE	Elongation factor 1-alpha 1;
PLRLPLQDVY	KIGGIGTVPVGR	0.73	1.31	EF1A1_MOUSE	Elongation factor 1-alpha 1;
KDGSASGTTL	LEALDCILPPTPTDKPLR	0.73	0.95	EF1A1_MOUSE	Elongation factor 1-alpha 1;
PTDKPLRLPL	QDVYKIGGIGTVPVGR	-0.22	-0.15	EF1A1_MOUSE	Elongation factor 1-alpha 1;
LGRFAVRDMR	QTVAVGVKAVDK	0.18	1.73	EF1A1_MOUSE	Elongation factor 1-alpha 1;
SLWKFETSKY	YVTIIDAPGHR	0.41	1.14	EF1A1_MOUSE	Elongation factor 1-alpha 1;
KEGNASGVSL	LEALDTILPPTPTDKPLR	0.95	0.00	EF1A2_MOUSE	Elongation factor 1-alpha 2;
AHVDHGKSTL	TDSLVCAGIIASAR	0.11	1.10	EF2_MOUSE	Elongation factor 2;
LGVKSQKLL	DAVDYIPVPTR	0.19	1.63	EFTU_MOUSE	Elongation factor Tu, mitochondrial;
VLLTFGFVRA	DDEVDVDGTVEEDLGKSR	0.14	0.62	ENPL_MOUSE	Endoplasmic reticulum protein 1;
HPTSPRPPG	GSIIIVYPKEIR	0.54	0.39	MA2B2_MOUSE	Epididymis-specific alpha-mannosidase;
RQYFYRYITD	QEYIYSIHTR	0.50	0.37	MA2B2_MOUSE	Epididymis-specific alpha-mannosidase;
RYLSPKYIKM	FVLDEADEMLSR	0.58	0.71	IF4A1_MOUSE	Eukaryotic initiation factor 4A-I;
IQNLHSFDPF	ADASKGDDLLPAGTEDYIHIR	0.90	0.86	EIF1_MOUSE	Eukaryotic translation initiation factor 1;
IQNLQSFDPF	ADATKGGDDLLPAGTEDYIHIR	1.99	1.47	EIF1B_MOUSE	Eukaryotic translation initiation factor 1b;
M	AGGEAGVTLGQPILSR	5.53	2.75	IF2H_MOUSE	Eukaryotic translation initiation factor 2 subunit 3, Y-linked;

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Non Prime Site	Prime Site	Fold change (log <sub>2</sub> )	Fold change (log <sub>2</sub> ) of	Uniprot ID	Protein Name
		of ASAPRatio (replicate 1)	ASAPRatio (replicate 2)		
VTVVRNLETY	GLDPCSVAAILQQR	0.63	-0.14	EIF2D_MOUSE	Eukaryotic translation initiation factor 2D;
ASTSQSSRAA	SIFGGAKPVDTAAR	-0.30	2.47	IF4B_MOUSE	Eukaryotic translation initiation factor 4B;
QRRLQLKPR	TVATPLNQVANPNSAIFGGAR	-1.09	0.74	IF4H_MOUSE	Eukaryotic translation initiation factor 4H;
NIKRNDFQLI	GIQDGYLSLLQDSGEVR	-2.12	1.01	IF5A1_MOUSE	Eukaryotic translation initiation factor 5A-1;
KQDFDENDIL	RELEELSLEAQGIR	4.04	5.09	IF2P_MOUSE	Eukaryotic translation initiation factor 5B;
SRMAKPEEVL	VVENDQGEVVR	1.14	0.99	XPO1_MOUSE	Exportin-1;
ACGSVTMSNP	GESSFDLADR	-0.01	-0.56	SODE_MOUSE	Extracellular superoxide dismutase [Cu-Zn];
LLAACGSVTM	SNPGESSFDLADRLDPVEKIDR	-0.25	0.16	SODE_MOUSE	Extracellular superoxide dismutase [Cu-Zn];
GPPPPAGGGG	GAAGAGGGPPPGPPGAGDR	-0.52	-0.03	FUBP2_MOUSE	Far upstream element-binding protein 2;
TWKLVSSENF	DDYMKEVGVGFATR	-1.18	-0.03	FABP4_MOUSE	Fatty acid-binding protein, adipocyte;
TESTVKTTFV	SCNLGKFEDETTADGR	-1.60	2.01	FABP5_MOUSE	Fatty acid-binding protein, epidermal;
VAGPQPAQTG	APQGSGLGEYLFER	0.64	1.68	FRIL1_MOUSE	Ferritin light chain 1;
RVAGPQPAQT	GAPQGSGLGEYLFER	-0.36	0.82	FRIL1_MOUSE	Ferritin light chain 1;
HNLPLGRCE	CEIGYELDR	1.14	0.12	FBN1_MOUSE	Fibrillin-1;
AGSSSGSVQ	GASAGGLAADASR	2.12	0.32	FILA_MOUSE	Filaggrin;
GQSSANRRA	GSSSGSVQGASAGGLAADASR	1.52	2.27	FILA_MOUSE	Filaggrin;
QSSANRRAG	SSSGSVQGASAGGLAADASR	2.38	2.43	FILA_MOUSE	Filaggrin;
RSPRRSPVHP	ESSEGEHSHVVPQR	0.93	-5.64	FILA2_MOUSE	Filaggrin-2;
SPRRSPVHPE	SSEGEHSHVVPQR	0.77	0.06	FILA2_MOUSE	Filaggrin-2;
SVCVHRLRN	GTLDNPSLDETAYER	0.26	0.60	FRDA_MOUSE	Frataxin, mitochondrial;
QSCVHRLRN	LGTLDNPSLDETAYER	0.70	1.02	FRDA_MOUSE	Frataxin, mitochondrial;
GHACTQKFSN	EEIAMATVTALR	0.20	-0.45	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
KGVVPLAGTN	GETTTQGLDGLSER	0.28	-0.34	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
ARYASICQQN	GIVPIVEILPDGDHDLKR	0.07	-0.81	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
TPGHACTQKF	SNEEIAMATVTALR	-1.74	-0.20	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
RYASICQQNG	IVPIVEILPDGDHDLKR	1.01	0.60	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
VDKGVVPLAG	TNGETTTQGLDGLSER	0.60	0.03	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
WRCVLKIGEH	TPSALAIMENANVLAR	0.77	0.43	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
PNMVTGPHAC	TQKFSNEEIAMATVTALR	0.76	0.33	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
VVPLAGTNGE	TTTQGLDGLSER	0.52	0.20	ALDOA_MOUSE	Fructose-bisphosphate aldolase A;
M	ACGLVASNLNLKPGECKVVR	0.21	0.07	LEG1_MOUSE	Galectin-1;
QAGRFHVNL	CGEEQGADAALHFNPR	1.44	1.46	LEG7_MOUSE	Galectin-7;
AGRFHVNL	GEEQGADAALHFNPR	1.31	1.43	LEG7_MOUSE	Galectin-7;
M	SATHHKTSLPQGVVR	-6.64	-3.32	LEG7_MOUSE	Galectin-7;
DQAGRFHVNL	LCGEEQGADAALHFNPR	1.00	-4.64	LEG7_MOUSE	Galectin-7;
PDQAGRFHVNL	LLCGEEQGADAALHFNPR	-0.32	0.67	LEG7_MOUSE	Galectin-7;
EDPNQFVPLN	TNPTEVLEKR	-0.54	-0.40	ADDG_MOUSE	Gamma-adducin;

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Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
M	GLLSQGSPLSWEETQR	0.77	0.52	GSH1_MOUSE	Glutamate--cysteine ligase catalytic subunit;
LLWAAACAQS	EQDFYDFKAVNIR	-0.32	-1.03	GPX7_MOUSE	Glutathione peroxidase 7;
AGNKVTYVDF	LVYDVLQHR	-0.36	-0.94	GSTM2_MOUSE	Glutathione S-transferase Mu 2;
NGKLTGMAFR	VPTPNVSVVDLTCR	-1.29	1.45	G3PT_MOUSE	Glyceraldehyde-3-phosphate dehydrogenase, testis-specific;
IIPASTGAAK	AVGKVIPELNGKLTGMAFR	-1.56	0.01	G3P_MOUSE	Glyceraldehyde-3-phosphate dehydrogenase;
IALNDNFVKL	ISWYDNEYGYSNR	-1.56	1.28	G3P_MOUSE	Glyceraldehyde-3-phosphate dehydrogenase;
LNGKLTGMAF	RVPTPNVSVVDLTCR	-0.43	0.31	G3P_MOUSE	Glyceraldehyde-3-phosphate dehydrogenase;
ALNDNFVKLI	SWYDNEYGYSNR	-0.27	0.75	G3P_MOUSE	Glyceraldehyde-3-phosphate dehydrogenase;
LAHFDPRVTM	WVFEEDIGGR	3.12	2.66	GPDA_MOUSE	Glycerol-3-phosphate dehydrogenase [NAD+], cytoplasmic;
	MKVFTGPLPAEGR	0.52	-0.67	GRHPR_MOUSE	Glyoxylate reductase/hydroxypyruvate reductase;
TSQLTAFPLG	APPPWPIQDSSGPELGSR	0.08	0.54	GORS1_MOUSE	Golgi reassembly-stacking protein 1;
MPGVGLPELG	SPGLPPLSLPPR	-0.38	-0.06	GORS2_MOUSE	Golgi reassembly-stacking protein 2;
LTIQLIQNHF	VDEYDPTIEDSYR	0.18	0.60	RASH_MOUSE	GTPase HRas;
PKHPVDQVQR	IIGGSMDAKGSFPWQAK	-0.86	0.12	HPT_MOUSE	Haptoglobin;
TKQTQFTTY	SDNQPGVLIQVYEGER	-1.52	0.39	HS71A_MOUSE	Heat shock 70 kDa protein 1A;
VVLLFETALL	SSGFSLEDPQTHSNR	0.56	1.66	HS90B_MOUSE	Heat shock protein HSP 90-beta;
VLRPPGGGSN	FSLGFDEPAEQPVR	0.84	0.79	HN1_MOUSE	Hematological and neurological expressed 1 protein;
RPPGGGSNFS	LGDFEPAEQPVR	1.32	2.00	HN1_MOUSE	Hematological and neurological expressed 1 protein;
SNIKAAWGKI	GGHGAEYGAELER	-0.62	-0.36	HBA_MOUSE	Hemoglobin subunit alpha;
AEKAAVSCLW	GKVNSDEVGGEALGR	0.00	-0.01	HBB1_MOUSE	Hemoglobin subunit beta-1;
DAEKAAVSCL	WGKVNSDEVGGEALGR	-0.27	-3.84	HBB1_MOUSE	Hemoglobin subunit beta-1;
AEKSAVSCLW	AKVNPDEVGGEALGR	-0.94	0.89	HBB2_MOUSE	Hemoglobin subunit beta-2;
MVHL	TDAEKSAVSCLWAKVNPDEVGGEALGR	-6.64	-5.06	HBB2_MOUSE	Hemoglobin subunit beta-2;
NSTHPMHSRC	SPDPGLTALLSDHR	0.18	0.79	HEMO_MOUSE	Hemopexin;
KDLTEYLSRF	GEVVDCTIKTDPVTGR	1.14	-0.89	HNRDL_MOUSE	Heterogeneous nuclear ribonucleoprotein D-like;
IPTLEEQHY	KGSDFDCELR	-0.92	-0.94	HNRPK_MOUSE	Heterogeneous nuclear ribonucleoprotein K;
TWSPSEWQMA	YEPQGGSGYDYSYAGGR	-0.49	-0.06	HNRPK_MOUSE	Heterogeneous nuclear ribonucleoprotein K;
GGRPAMEPGN	GSLDLGGDAAGR	1.63	1.98	HNRPU_MOUSE	Heterogeneous nuclear ribonucleoprotein U;
TEEHHLRDYF	EEYGKIDTIEIITDR	2.10	-0.04	ROA2_MOUSE	Heterogeneous nuclear ribonucleoproteins A2/B1;
GGNFGGDSR	GGGGNFGPGPGSNFR	-0.25	1.01	ROA2_MOUSE	Heterogeneous nuclear ribonucleoproteins A2/B1;
MADEIAKAQ	VAQPGGDITFGKIIR	-0.25	-0.38	HINT1_MOUSE	Histidine triad nucleotide-binding protein 1;
					Histidine triad nucleotide-binding protein 2,
GARGAQVRGN	AGVSDGSEVAKAQKAAPGGASPTIFSR	-0.07	-0.23	HINT2_MOUSE	mitochondrial;
SKKSTDHPKY	SDMIVAAIQAEKNR	-0.07	0.44	H10_MOUSE	Histone H1.0;
VGLTSLRAVS	TSSMGTLPKQVKIVEGPR	-0.43	-0.15	HMGCL_MOUSE	Hydroxymethylglutaryl-CoA lyase, mitochondrial;



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KIKGLVRAPQ	VYILPPPAEQLSR	-0.74	-0.69	IGG2B_MOUSE	Ig gamma-2B chain C region;
LMAVVGINS	EVQLQQSGAELVR	0.60	0.31	HVM02_MOUSE	Ig heavy chain V region 93G7;
LVLILKGVQC	DVQLVESGGGLVQPGGSR	3.69	0.03	HVM16_MOUSE	Ig heavy chain V region MOPC 21;
E	VKLVESGGGLVQPGGSLR	-0.11	0.50	HVM17_MOUSE	Ig heavy chain V region MOPC 47A;
LSGTAGVQSQ	VQLQQSGAELVK	0.89	1.37	HVM00_MOUSE	Ig heavy chain V region;
	NIVLTQSPASLAVSLGQR	3.49	1.21	KV3A9_MOUSE	Ig kappa chain V-III region MOPC 63;
LLWVPGSTGD	IVLTQSPASLAVSLGQR	0.50	-0.30	KV3A1_MOUSE	Ig kappa chain V-III region PC 2880/PC 1229;
D	IQMTQTPSSLSASLGDR	-3.84	-1.29	KV5AF_MOUSE	Ig kappa chain V-V region HP 91A3;
LLFWIPASRG	DILLTQSPAILSVSPGER	-0.45	-0.62	KV5A9_MOUSE	Ig kappa chain V-V region L7;
D	IQMTQTSSLSASLGDR	1.23	-0.25	KV5AA_MOUSE	Ig kappa chain V-V region MOPC 173;
ILLWLYGADG	NIVMTQSPKMSMSVGER	-1.06	-1.56	KV5A2_MOUSE	Ig kappa chain V-V region MOPC 21;
LLLWFPGARC	DIQMTQSPSSLSASLGER	0.45	-1.03	KV5A7_MOUSE	Ig kappa chain V-V region MOPC 41;
IFVKAVLVTG	DDEATILADNCKMCTR	-0.84	-2.94	IGJ_MOUSE	Immunoglobulin J chain;
RRSGRLLTRW	ETTSSIPEAGEGQIR	0.39	0.75	ISCA2_MOUSE	Iron-sulfur cluster assembly 2 homolog, mitochondrial; Isocitrate dehydrogenase [NAD] subunit gamma 1, mitochondrial;
FRHACVPVDF	EEVHVSSNADEEDIR	1.01	1.09	IDHG1_MOUSE	Isocitrate dehydrogenase [NAD] subunit gamma 1, mitochondrial;
AAHVAPRRSI	SSQQTIPPSAKYGGGR	0.12	0.06	IDHG1_MOUSE	Isocitrate dehydrogenase [NAD] subunit gamma 1, mitochondrial;
LIKEKLILPY	VELDLHSYDLGIENR	-1.52	0.30	IDHC_MOUSE	Isocitrate dehydrogenase [NADP] cytoplasmic;
SSSSSNFHI	SVEESVDGKVVSSR	1.16	2.18	K1C15_MOUSE	Keratin, type I cytoskeletal 15;
GFSSRSLYSL	GGSKSIFGNLVGR	-0.30	-0.06	K2C1B_MOUSE	Keratin, type II cytoskeletal 1b;
SRTTSTTSTM	CGYYGNYYGGR	-1.43	1.26	KR168_MOUSE	Keratin-associated protein 16-8;
ESVRSPGSSR	TEVLVTPAGVASKR	2.09	1.73	LAD1_MOUSE	Ladinin-1;
NRPLAAGAN	SKGPPDFSSDEEREPTVLSGASVGR	1.18	-0.56	LAP2A_MOUSE	Lamina-associated polypeptide 2, isoforms alpha/zeta;
M	TSDQDAKVVAEPQAQR	0.04	-0.25	LAR4B_MOUSE	La-related protein 4B;
QNADCPKNSG	TVGAVALDCR	1.26	-2.06	ASGL1_MOUSE	L-asparaginase;
LLLPPNAYA	ADTPGEATPPPR	0.67	-0.14	MESD_MOUSE	LDLR chaperone MESD;
CGLSDPNLTL	SSGKDGQCPLVVEQVR	0.86	1.29	LRC47_MOUSE	Leucine-rich repeat-containing protein 47;
PQQQQMTSSY	GGYKEPAAPVSIQR	0.11	0.62	LASP1_MOUSE	LIM and SH3 domain protein 1;
QQQQMTSSYG	GYKEPAAPVSIQR	-0.03	-0.92	LASP1_MOUSE	LIM and SH3 domain protein 1;
QQMTSSYGGY	KEPAAPVSIQR	0.42	1.01	LASP1_MOUSE	LIM and SH3 domain protein 1;
CNAHYPKQSF	TMVADTPENLR	-0.22	0.14	LASP1_MOUSE	LIM and SH3 domain protein 1;
ILAQMTGTEY	MQDPDEEALRR	1.27	1.13	LDB3_MOUSE	LIM domain-binding protein 3;
QSRFRILAQ	MTGTEYMQDPDEEALRR	0.11	-6.64	LDB3_MOUSE	LIM domain-binding protein 3;
QSRFRILAQ	MTGTEYMQDPDEEALR	-0.01	1.42	LDB3_MOUSE	LIM domain-binding protein 3;
SFRILAQMTG	TEYMQDPDEEALR	-0.36	-0.52	LDB3_MOUSE	LIM domain-binding protein 3;

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HSLRTAAVLQ	GQVVQFKLSDIGEGIR	0.35	0.07	ODB2_MOUSE	Lipoamide acyltransferase component of branched-chain alpha-keto acid dehydrogenase complex, mitochondrial;
IWTRRHPVQG	ADLVQDLSISTCR	0.04	-0.40	LYVE1_MOUSE	Lymphatic vessel endothelial hyaluronic acid receptor 1;
ALLCAGRAQG	LQCYECYGVPIETSCPAVTCR	0.50	-1.43	LY6C1_MOUSE	Lymphocyte antigen 6C1;
QSKGQWLTLE	APLDTINVHLR	0.63	-0.12	LYAG_MOUSE	Lysosomal alpha-glucosidase;
PTSYPEPSKL	DPTSVTLKPMER	0.76	0.68	MA2B1_MOUSE	Lysosomal alpha-mannosidase;
GPTSYPEPSK	LDPTSVTLKPMER	0.36	0.39	MA2B1_MOUSE	Lysosomal alpha-mannosidase;
SWASRNEAAP	DQDEIDCLPLGAKQPSFR	-0.11	0.19	PPGB_MOUSE	Lysosomal protective protein;
LLATVWHGQG	APVIEPSGPELVVEPGETVTLR	-0.11	0.03	CSF1R_MOUSE	Macrophage colony-stimulating factor 1 receptor;
MYTPIPQ	SGSPFPASVQDPGLHIWR	-2.64	-1.52	CAPG_MOUSE	Macrophage-capping protein;
LWVSLVATLLG	SKWPEPVFGR	0.07	0.03	MASP2_MOUSE	Mannan-binding lectin serine protease 2;
ALSVLPDSRA	LRPGDCEVCISYLGR	1.20	1.54	MANF_MOUSE	Mesencephalic astrocyte-derived neurotrophic factor;
ISRRLVSDSG	SLAEVPKEAPKVGILGSGDFAR	-0.15	1.47	STEA3_MOUSE	Metalloreductase STEAP3;
EKAKREVCSW	TVEGDVNTDPWAGYR	0.01	0.29	AMPM1_MOUSE	Methionine aminopeptidase 1;
QTSVAIGRSF	STPQSQFQESSPVWKLGR	0.35	0.10	MCEE_MOUSE	Methylmalonyl-CoA epimerase, mitochondrial;
HRDDGLADLL	FVSSGPTNASAFTR	0.08	0.07	MAP4_MOUSE	Microtubule-associated protein 4;
DDGLADLLFV	SSGPTNASAFTR	1.05	1.92	MAP4_MOUSE	Microtubule-associated protein 4;
KGYMRPTKSR	GLTPDLPKASQER	-0.32	-0.56	F7CK47_MOUSE	Microtubule-associated protein;
GGSKGPVDTF	SAVLTTQGKASDVLVQGEGR	0.39	-0.30	MAST4_MOUSE	Microtubule-associated serine/threonine-protein kinase 4;
KKLNKLSFLY	LDHNDLESVPPNLPESLR	-0.15	-2.00	MIME_MOUSE	Mimecan;
AQAYKALKDY	KSSLSDISLLQIEPR	0.77	0.18	TOM34_MOUSE	Mitochondrial import receptor subunit TOM34;
QAYKALKDYK	SSLSDISLLQIEPR	-0.67	0.32	TOM34_MOUSE	Mitochondrial import receptor subunit TOM34;
DIKSKTYQVM	RDYEQAGSAAPSVFSR	1.04	1.04	MSTN1_MOUSE	Musculoskeletal embryonic nuclear protein 1;
SLPAVVVETF	SATVNGAVEGSAGTGR	-0.22	0.06	BIN1_MOUSE	Myc box-dependent-interacting protein 1;
LPMMQAISSN	KDQGGYEDFVEGLR	0.56	0.06	MYL1_MOUSE	Myosin light chain 1/3, skeletal muscle isoform;
EGSSNVFSMF	DQTQIQEFKEAFTVIDQNR	0.16	-2.74	MLRS_MOUSE	Myosin regulatory light chain 2, skeletal muscle isoform;
MFDQTQIQEF	KEAFTVIDQNR	0.23	1.32	MLRS_MOUSE	Myosin regulatory light chain 2, skeletal muscle isoform;
LDPEGKGTIK	KQFLEELLTTCQDR	-0.92	0.28	MLRS_MOUSE	Myosin regulatory light chain 2, skeletal muscle isoform;
VFSMFDQTQI	QEFKEAFTVIDQNR	-0.14	0.72	MLRS_MOUSE	Myosin regulatory light chain 2, skeletal muscle isoform;
RNLHKTAVHN	GAGGALFVHR	0.37	-0.34	NDUV2_MOUSE	NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial;
PFAGGGYRLG	AAPEEESAYVAGER	-0.20	-2.47	NSF1C_MOUSE	NSFL1 cofactor p47;
KPTDGASSSN	CVTDISHLVR	0.78	2.29	NASP_MOUSE	Nuclear autoantigenic sperm protein;
SKSLSPGLLG	YQQPSLLAAPLGLADAHR	-1.22	1.21	NFAC2_MOUSE	Nuclear factor of activated T-cells, cytoplasmic 2;
SVTREDGQY	AAYSNAVGAAYSSAR	-6.64	-4.64	OBSCN_MOUSE	Obscurin;
GRRGQFGARG	VSEGSAAAMAAGESMAQR	0.03	0.07	ORN_MOUSE	Oligoribonuclease, mitochondrial;

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Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
LQGGGLGPLS	LLPPDLPDLEPECR	0.67	0.63	OSTM1_MOUSE	Osteopetrosis-associated transmembrane protein 1;
LEITESQSAD	AEP PPPPKPDL SR	-0.14	0.66	ZDHC5_MOUSE	Palmitoyltransferase ZDHC5;
KVFHILDKDK	SGFIEDELGSILKGFSSDAR	-0.76	-0.45	PRVA_MOUSE	Parvalbumin alpha;
EPPKQSTSFL	VLQEILESDGKGDPNKPSGFR	0.56	0.20	PDLI1_MOUSE	PDZ and LIM domain protein 1;
LNLKQKGYFF	VEGELYCETHAR	0.51	0.45	PDLI3_MOUSE	PDZ and LIM domain protein 3;
PRQPTVTSVC	SESAQELAEGQR	0.12	0.65	PDLI5_MOUSE	PDZ and LIM domain protein 5;
MVNPTVF	FDITADDEPLGR	-0.86	1.70	PPIA_MOUSE	Peptidyl-prolyl cis-trans isomerase A;
M	VNPTVFFDITADDEPLGR	0.53	0.99	PPIA_MOUSE	Peptidyl-prolyl cis-trans isomerase A;
KGPKVTVKVY	FDLQIGDES VGR	-0.04	-0.67	PPIB_MOUSE	Peptidyl-prolyl cis-trans isomerase B;
M	GVQVETISPGDGR	1.27	1.53	FKB1A_MOUSE	Peptidyl-prolyl cis-trans isomerase FKBP1A;
M	GVEIETISPGDGR	-0.27	0.35	FKB1B_MOUSE	Peptidyl-prolyl cis-trans isomerase FKBP1B;
GQAAPVLGLA	VSSELQIQSFVPDECP R	-0.32	-0.58	FKBP9_MOUSE	Peptidyl-prolyl cis-trans isomerase FKBP9;
MSMN	KGPTLLDGDLP EQENVLQR	0.04	0.97	PLIN1_MOUSE	Perilipin-1;
LSLMEPESEF	RDIDNPSAE AER	2.62	2.41	PLIN1_MOUSE	Perilipin-1;
WDGLDPGKLY	TLVLTDPDAPSR	-1.06	0.99	PEBP1_MOUSE	Phosphatidylethanolamine-binding protein 1;
STAASRATTL	SNAVSSLASTGLSLTKVDER	-0.79	1.15	PICA_MOUSE	Phosphatidylinositol-binding clathrin assembly protein;
MVKIVTVK	TQAYPDQKPGTSGLR	-0.52	-1.89	PGM1_MOUSE	Phosphoglucomutase-1;
GGVGGPGAK	SAAQAAAQ TNSNAAGKQLR	1.25	0.07	PAIRB_MOUSE	Plasminogen activator inhibitor 1 RNA-binding protein;
LREDPAYLHY	YDPAGGEDPLGAVHLR	0.50	0.60	PLEK_MOUSE	Pleckstrin;
EVKGYWASLD	ASTQTTHELTIPNNLIGCIGR	-0.67	-0.17	PCBP1_MOUSE	Poly(rC)-binding protein 1;
LDAYSIQGQH	TISPLDLAKLNQVAR	0.11	0.14	PCBP1_MOUSE	Poly(rC)-binding protein 1;
IREGEVEVLK	ATEMVEVGPEDDEVGAER	-0.23	-0.84	PTRF_MOUSE	Polymerase I and transcript release factor;
KIREGEVEVL	KATEMVEVGPEDDEVGAER	-0.84	-1.64	PTRF_MOUSE	Polymerase I and transcript release factor;
EVEVLKATEM	VEVGPEDDEVGAER	-0.40	0.86	PTRF_MOUSE	Polymerase I and transcript release factor;
SVQSGNLALA	ASAAAVDAGMAMAGQSPVLR	0.26	1.25	PTBP1_MOUSE	Polypyrimidine tract-binding protein 1;
AAAAAASRI	AIPGLAGAGNSVLLVSNL NPER	-1.89	-0.60	PTBP1_MOUSE	Polypyrimidine tract-binding protein 1;
TNLRDDIMRL	DDTVHVVIATPGR	2.00	2.21	DDX6_MOUSE	Probable ATP-dependent RNA helicase DDX6;
DVEPD TYCRY	DSVSVFNGAVSDDSKR	-0.23	-0.07	PCOC1_MOUSE	Procollagen C-endopeptidase enhancer 1;
PSNQVIMLTF	GKFDVEPD TYCR	-1.47	-6.64	PCOC1_MOUSE	Procollagen C-endopeptidase enhancer 1;
IAPSNQVIML	TFGKFDVEPD TYCR	-0.94	-0.62	PCOC1_MOUSE	Procollagen C-endopeptidase enhancer 1;
SEGNELLVQF	VSDL SVTADGFSASYR	0.82	0.12	PCOC1_MOUSE	Procollagen C-endopeptidase enhancer 1;
VWAAVPGKTF	VSITPAEVGVLVGKDR	-1.43	0.37	PROF1_MOUSE	Profilin-1;
GKLPSLAFLY	MEKNQLEEVPSALPR	-0.97	0.01	PRELP_MOUSE	Prolargin;
LGKLPSLAFL	YMEKNQLEEVPSALPR	0.28	-0.43	PRELP_MOUSE	Prolargin;
LLVILPATGS	DPVLCFTQYEESGR	0.49	0.57	PROP_MOUSE	Properdin;
PRKIISLSQL	LQEDSLNVADLSSLR	0.35	0.49	PSME2_MOUSE	Proteasome activator complex subunit 2;
FKLPKARKTG	TTIAGVVYKDGIVLGADTR	0.21	0.64	PSB7_MOUSE	Proteasome subunit beta type-7;

Table S9, Tholen et al.

Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
LLTACLASRA	DPASTLPDIQVQENFSESR	0.39	-0.30	AMBP_MOUSE	Protein AMBP;
A	SDVLELTDENFESR	-0.04	0.77	PDIA3_MOUSE	Protein disulfide-isomerase A3;
SCTFFLAVSG	LYSSDDVIELTPSNFNR	0.16	0.10	PDIA6_MOUSE	Protein disulfide-isomerase A6;
CTFFLAVSGL	YSSDDVIELTPSNFNR	0.60	0.40	PDIA6_MOUSE	Protein disulfide-isomerase A6;
SLVSQGMQIL	ALSEASQTDPSGPPPR	-0.25	-0.92	F134C_MOUSE	Protein FAM134C;
VARGKLVLL	FKEETEIPAR	0.01	1.23	PRDBP_MOUSE	Protein kinase C delta-binding protein;
VREKEAQPPE	AEAPGVDLILPEGR	-0.36	0.57	NIBAN_MOUSE	Protein Niban;
SRRSTQGVTL	TDLQEAETIGR	-0.03	1.05	MYPT1_MOUSE	Protein phosphatase 1 regulatory subunit 12A;
ARQSRRSTQG	VTLTDLQEAETIGR	-0.11	-0.69	MYPT1_MOUSE	Protein phosphatase 1 regulatory subunit 12A;
LSKDITANTW	AVTVDPSTNAKR	-6.64	-2.74	PPR3A_MOUSE	Protein phosphatase 1 regulatory subunit 3A;
AQAVTAYIIK	TTLESTPESASAR	-0.76	-0.12	PPR3A_MOUSE	Protein phosphatase 1 regulatory subunit 3A;
ATSASGALLS	APPSGPPISGFSVGTTYDITR	-0.12	-0.25	PRRC1_MOUSE	Protein PRRC1;
KGSVAGGAVY	LVYDQELLGSPDKSEAALR	0.16	-0.45	QIL1_MOUSE	Protein QIL1;
QLSKTEFLSF	MNTELAFTKNQKDPGVLDLR	-0.11	0.60	S10AB_MOUSE	Protein S100-A11;
YNKFMSVLDL	NKDCEVDFGEYVR	0.99	1.74	S10A3_MOUSE	Protein S100-A3;
QQIITPIKA	YSVLQATPTAKDEGR	0.12	-1.15	SMAG2_MOUSE	Protein Smaug homolog 2;
RSPGASRAAM	SSDAQWLTAEEER	-0.01	-0.60	PHS2_MOUSE	Pterin-4-alpha-carbinolamine dehydratase 2;
EQALEDFHSS	FGPISEVVVKDR	1.73	1.95	RBM3_MOUSE	Putative RNA-binding protein 3;
TDEQALEDFH	SSFGPISEVVVKDR	-0.58	-2.25	RBM3_MOUSE	Putative RNA-binding protein 3;
VLDGADCIML	SGETAKGDYPLEAVR	0.37	-0.89	KPYM_MOUSE	Pyruvate kinase isozymes M1/M2;
KNVREATESF	ASDPILYRPVAVALDTKGPEIR	-1.18	-1.09	KPYM_MOUSE	Pyruvate kinase isozymes M1/M2;
IENHEGVRRF	DEILEASDGIMVAR	-1.18	-1.03	KPYM_MOUSE	Pyruvate kinase isozymes M1/M2;
QVEEYIADLY	SEEPGEEPAWVQTER	-0.79	0.01	RCN3_MOUSE	Reticulocalbin-3;
LTKYKKTLLG	DVPVVADPTVPNVTVTR	-0.52	-1.22	GDIR2_MOUSE	Rho GDP-dissociation inhibitor 2;
SLTKYKKTLL	GDVPVVADPTVPNVTVTR	0.43	-0.97	GDIR2_MOUSE	Rho GDP-dissociation inhibitor 2;
QTPGMRRCSS	SLPPIQAPSHPPQPPTQPR	1.06	1.20	RHG17_MOUSE	Rho GTPase-activating protein 17;
QDHPSSMGVY	GQESGGFSGPGENR	0.54	0.53	EWS_MOUSE	RNA-binding protein EWS;
M	APVEHVADAGAFRL	-0.54	-1.32	NOB1_MOUSE	RNA-binding protein NOB1;
ERGNPVIAQW	EEVEDASEEAPLRDR	0.00	-2.18	SRCA_MOUSE	Sarcalumenin;
ERGNPVIAQW	EEVEDASEEAPLR	2.17	-1.52	SRCA_MOUSE	Sarcalumenin;
LASLLSGQA	EVEDASEEAPLR	-0.76	-1.64	SRCA_MOUSE	Sarcalumenin;
MEPYS	CDTFVALPPATVGNR	0.52	-0.45	SCRN3_MOUSE	Secernin-3;
VIQHRPSQQY	ATLDVYNPFENR	-0.15	-1.18	SCAM3_MOUSE	Secretory carrier-associated membrane protein 3;
VLELKYTGNA	SALLILPDQGR	3.47	5.48	SPA3K_MOUSE	Serine protease inhibitor A3K;
PFPATHYSTL	SKPAPLTGTLEVR	-0.49	1.73	PKN1_MOUSE	Serine/threonine-protein kinase N1;
MSDN	GELEDKPPAPPVR	1.31	2.66	PAK2_MOUSE	Serine/threonine-protein kinase PAK 2;

Table S9, Tholen et al.

Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
HRMTTLFCIN	VLSEVCGQDITTKHMLPTVLR	0.93	0.72	2AAA_MOUSE	Serine/threonine-protein phosphatase 2A 65 kDa regulatory subunit A alpha isoform;
PTKETGWASF	SEFTSSLSTKESLR	-0.86	-3.18	PP6R3_MOUSE	Serine/threonine-protein phosphatase 6 regulatory subunit 3;
GGDVAFVKHT	TIFEVLPEKADR	0.44	0.66	TRFE_MOUSE	Serotransferrin;
GGGDVAFVKH	TTIFEVLPEKADR	0.20	1.07	TRFE_MOUSE	Serotransferrin;
KAVLSAEKLR	DEEVHTGLGELLR	1.05	1.51	SERPH_MOUSE	Serpin H1;
VLSAEKLRDE	EVHTGLGELLR	0.68	0.70	SERPH_MOUSE	Serpin H1;
DKRSALQSIN	EWASQTTDQKLEVTKDVER	0.51	0.89	SERPH_MOUSE	Serpin H1;
RDKRSALQSI	NEWASQTTDQKLEVTKDVER	0.16	-2.64	SERPH_MOUSE	Serpin H1;
HSKINFRDKR	SALQSINEWASQTTDQKLEVTKDVER	-2.40	-3.18	SERPH_MOUSE	Serpin H1;
NAILVRYTQK	APQVSTPTLVEAAR	-0.45	0.28	ALBU_MOUSE	Serum albumin;
ARNLGRVGTK	CCTLPEDQR	-0.18	0.29	ALBU_MOUSE	Serum albumin;
TCKAADKDT	CFSTEGPNLVTR	-0.04	-0.34	ALBU_MOUSE	Serum albumin;
NLVKTNCDLY	EKLGEYGFQNAIVR	-0.58	-0.49	ALBU_MOUSE	Serum albumin;
DKLCAIPNLR	ENYGELADCCTKQEPER	2.83	-2.64	ALBU_MOUSE	Serum albumin;
AANCDKSLHT	LFGDKLCAIPNLR	0.03	0.47	ALBU_MOUSE	Serum albumin;
KCCTLPEDQR	LPCVEDYLSAILNR	3.27	2.41	ALBU_MOUSE	Serum albumin;
AIPNLRENYG	ELADCCTKQEPER	-3.84	-2.74	ALBU_MOUSE	Serum albumin;
DTCKAADKD	TCFSTEGPNLVTR	0.35	1.15	ALBU_MOUSE	Serum albumin;
SAANCDKSLH	TLFGDKLCAIPNLR	-0.45	0.54	ALBU_MOUSE	Serum albumin;
GFQNAIVRY	TQKAPQVSTPTLVEAAR	0.50	0.29	ALBU_MOUSE	Serum albumin;
GHPLYRKYML	SVPHGIANEDIVSR	0.63	0.73	SH319_MOUSE	SH3 domain-containing protein 19;
PPPCGRELF	DDPSYVNIQNLDKAR	0.25	1.87	SHC1_MOUSE	SHC-transforming protein 1;
LNDGDISLTY	GDSTVNTESATASAPR	0.77	-0.42	BOQZV3_MOUSE	Sodium/hydrogen exchanger;
GKALKRQLPF	RGDEGIFEEFIEER	-0.32	-0.12	SNX12_MOUSE	Sorting nexin-12;
DAYGPPSNFL	EIDVSNPQTVGVGR	0.36	0.88	SNX3_MOUSE	Sorting nexin-3;
NDAYGPPSNF	LEIDVSNPQTVGVGR	-0.92	-0.67	SNX3_MOUSE	Sorting nexin-3;
GKAFLRQLPF	RGDDGIFDDNFIEER	-0.18	0.35	SNX3_MOUSE	Sorting nexin-3;
MYIFPVHWQF	GQLDQHPIIDGYLSHTEAPLR	-0.12	-0.01	SPRC_MOUSE	SPARC;
ERHTLITEMV	ALNPDFKPPADYKPPATR	0.60	1.41	SF01_MOUSE	Splicing factor 1;
HGPPMDQYL	GSTPVGSGVYR	0.61	0.72	SF01_MOUSE	Splicing factor 1;
KLEERHTLI	TEMVVALNPDKPPADYKPPATR	0.78	0.40	SF01_MOUSE	Splicing factor 1;
ALSVRNLSPY	VSNELLEAFSQFGPIER	0.94	0.29	SFPQ_MOUSE	Splicing factor, proline- and glutamine-rich;
LWSAVGASNM	AVVTCGSVVLLNTR	-0.32	0.53	SDF2_MOUSE	Stromal cell-derived factor 2;
FQHVGTSVFL	SVTGEQYGNPIR	-0.69	-0.25	SDF2L_MOUSE	Stromal cell-derived factor 2-like protein 1;
EPAGTPRRSY	ASGPGGLHADLLR	0.63	-0.15	SSDH_MOUSE	Succinate-semialdehyde dehydrogenase, mitochondrial;

Table S9, Tholen et al.

Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
AMKANTMSNY	SLLPASLLDHR	-1.22	-1.64	ST2B1_MOUSE	Sulfotransferase family cytosolic 2B member 1;
AAMKANTMSN	YLLPASLLDHR	0.66	2.03	ST2B1_MOUSE	Sulfotransferase family cytosolic 2B member 1;
ERRRQLAEKY	GLTLDPEADSEYLSR	0.42	0.62	SVIL_MOUSE	Supervillin;
LGTLPARAAH	EDPVEKVIIEGFSR	0.51	0.43	SBSN_MOUSE	Suprabasin;
FSRGLSNAER	EVGKALEGINNGITQAGR	-0.43	-1.32	SBSN_MOUSE	Suprabasin;
WQEGDKVIRP	GVSQAGEEMEQFGQGV	0.01	0.45	SBSN_MOUSE	Suprabasin;
KLTLELIDF	YGIDNLLHYNR	-0.34	-0.81	SFR1_MOUSE	Swi5-dependent recombination DNA repair protein 1 homolog;
SLSKERHQCT	SGPIVTLQGNKSTSPDPDWSSQLER	-0.30	-0.15	SYNP2_MOUSE	Synaptopodin-2;
AKRQSRMEKY	VVDSDTVQAHTVR	0.60	0.15	SYNP2_MOUSE	Synaptopodin-2;
VSKQPSRITN	GQPQQTTGAASGGYIKR	0.61	0.61	SNP23_MOUSE	Synaptosomal-associated protein 23;
LDHGRTLREQ	GVEEHETLLLR	1.08	0.18	TLN1_MOUSE	Talin-1;
ASGPENFQVG	SMPPAQQQITSGQMHR	-0.84	-4.32	TLN1_MOUSE	Talin-1;
STSQLVACTK	VVAPTISPVQCQLVEAGR	1.14	0.31	TLN1_MOUSE	Talin-1;
SPCLLPRVHL	ASAFGSSTESLVAR	1.04	0.01	THEM5_MOUSE	Thioesterase superfamily member 5;
LWVLGLPAHG	LEVAEDSGHPWR	-0.15	0.01	TXD15_MOUSE	Thioredoxin domain-containing protein 15;
RTVHTTRVCL	TTFNVQDGPDFQDR	0.33	0.99	THIOM_MOUSE	Thioredoxin, mitochondrial;
M	VGVKPVGSDPDFQPELSGAGSR	0.42	-1.60	TXNL1_MOUSE	Thioredoxin-like protein 1;
M	TVHNLVLFDR	0.31	-0.84	TPPC1_MOUSE	Trafficking protein particle complex subunit 1;
LEAWYRHGRT	TSSYSALSSEPSR	-0.03	-0.25	MECR_MOUSE	Trans-2-enoyl-CoA reductase, mitochondrial;
AEKNAPAIIF	IDELDAIAPKR	-0.79	0.63	TERA_MOUSE	Transitional endoplasmic reticulum ATPase;
EIFDKARVLF	FDELDSIAKAR	-1.25	0.99	TERA_MOUSE	Transitional endoplasmic reticulum ATPase;
LLGPSSVLG	ISFHLPVNSR	0.10	-1.03	TMEDA_MOUSE	Transmembrane emp24 domain-containing protein 10;
LAGLVFVSEA	GPAGAGESKCLPMVKVLDVAVR	-0.11	0.77	TTHY_MOUSE	Transthyretin;
GSWEPFASGK	TAESGELHGLTTDEKFEVGVYR	0.10	-0.32	TTHY_MOUSE	Transthyretin;
TLGISPFHEF	ADVFTANDSGHR	-1.79	1.09	TTHY_MOUSE	Transthyretin;
KSPEERTIEY	LEEAVNFAKGLADR	-0.49	0.00	ECHA_MOUSE	Trifunctional enzyme subunit alpha, mitochondrial;
KDVVDYIIFG	TVIQEVKTSNVAR	0.41	0.56	ECHB_MOUSE	Trifunctional enzyme subunit beta, mitochondrial;
SPGMIKDLGA	TWVVLGHSER	-0.34	-0.69	TPIS_MOUSE	Triosephosphate isomerase;
LINEHRILNG	RPPLGFLNPR	-0.11	-0.56	TPP1_MOUSE	Tripeptidyl-peptidase 1;
RPEPQQVGTV	SLHLGVTPSVLR	0.71	-0.38	TPP1_MOUSE	Tripeptidyl-peptidase 1;
VVKGEKILPV	FDEPPNPTNVEESLKR	-1.18	0.06	TMOD3_MOUSE	Tropomodulin-3;
AEFKAADFDMF	DADGGGDISVKELGTVMR	1.54	0.01	TNNC2_MOUSE	Troponin C, skeletal muscle;
ARRQHLKSVM	LQIAATELEKEESR	0.33	1.35	TNNI2_MOUSE	Troponin I, fast skeletal muscle;
AITARRQHLK	SVMLQIAATELEKEESR	-1.32	-1.40	TNNI2_MOUSE	Troponin I, fast skeletal muscle;
QKKRQNKDLM	ELQALIDSHFEAR	-0.49	0.25	TNNT3_MOUSE	Troponin T, fast skeletal muscle;
TLEHSDCAF	MVDNEAIYDICR	-0.81	-0.52	TBA1A_MOUSE	Tubulin alpha-1A chain;

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AGKHVPRAVF	VDLEPTVIDEVR	-0.03	1.55	TBA1A_MOUSE	Tubulin alpha-1A chain;
MYAKRAVHW	YVGEEMEEGEFSEAR	0.10	2.97	TBA1A_MOUSE	Tubulin alpha-1A chain;
AGNNWAKGHY	TEGAELVDSVLDVVR	-0.58	0.20	TBB2A_MOUSE	Tubulin beta-2A chain;
GAGNNWAKGH	YTEGAELVDSVLDVVR	-0.27	0.00	TBB2A_MOUSE	Tubulin beta-2A chain;
RLSESEGAN	EGATAAPELSALEEAFR	0.25	0.71	TPPP_MOUSE	Tubulin polymerization-promoting protein;
SPNKGVLSDF	MTDVPVDPGVVHR	-0.94	-0.23	TPD54_MOUSE	Tumor protein D54;
AVQGGAAAPV	VGAVQVPVPGMPPMPQAPR	0.51	1.36	SNRPA_MOUSE	U1 small nuclear ribonucleoprotein A;
EDEKAAAEIY	EEFLAAFEGSDGNKVKTFVR	0.29	0.70	SR140_MOUSE	U2 snRNP-associated SURP motif-containing protein;
LDRHANTIRL	FVLLPEQSPGYSKR	-0.92	-0.94	UBP47_MOUSE	Ubiquitin carboxyl-terminal hydrolase 47;
LQTRFPLDYY	SIPFPTPTTLTGR	2.06	2.49	UBP2L_MOUSE	Ubiquitin-associated protein 2-like;
TKIFTASNVS	SVPLPAENVITITAGQR	-0.74	0.01	UBP2L_MOUSE	Ubiquitin-associated protein 2-like;
KTDQVIQFFI	ALVNDPQPEHPLR	-0.09	1.50	UB2L3_MOUSE	Ubiquitin-conjugating enzyme E2 L3;
DQVIQFFIAL	VNDPQPEHPLR	0.57	1.47	UB2L3_MOUSE	Ubiquitin-conjugating enzyme E2 L3;
SPVSSGVNLF	ANDGSFLELFKR	0.01	-0.30	CS043_MOUSE	Uncharacterized protein C19orf43 homolog;
LLLLSGDAHS	SEVPGAAAEGPGSGVGLGDR	0.43	-0.45	CO024_MOUSE	UPF0480 protein C15orf24 homolog;
APVAPCENKF	AEDSAEAAVSPESR	0.99	0.62	CA174_MOUSE	UPF0688 protein C1orf174 homolog;
IGEEAPQMNY	IQVTPQEKEAIER	0.30	0.50	RD23A_MOUSE	UV excision repair protein RAD23 homolog A;
AATTTATTTT	TSGGHPLFLR	0.00	0.01	RD23B_MOUSE	UV excision repair protein RAD23 homolog B;
LRAMRGIVNG	AAPELVPVPTGGPMAGAR	0.19	-0.89	VATB2_MOUSE	V-type proton ATPase subunit B, brain isoform;
M	ASQTQGIQQLQAEKR	5.36	4.26	VATG2_MOUSE	V-type proton ATPase subunit G 2;
TYGTAAAKAY	TDDLGAVGGACLEDEASALR	-0.45	-0.97	WIPI2_MOUSE	WD repeat domain phosphoinositide-interacting protein 2;
WTGYFGKVLIM	ASTSYLPSQVTEMFNQGR	-2.94	-3.84	WIPI2_MOUSE	WD repeat domain phosphoinositide-interacting protein 2;
VGASDGYLYM	YNLDPQEGGECALMR	0.85	1.48	WIPI2_MOUSE	WD repeat domain phosphoinositide-interacting protein 2;
MSFSADQI	ADFKEAFLLFDR	0.41	0.01	E9PWG4_MOUSE	
ALPSRMERWS	ADPLAPGAFCTQIVR	0.29	0.39	Q3URZ6_MOUSE	
SLQLVSWTLA	AEPVDVLEAWGVHR	0.25	0.54	Q9JLI2_MOUSE	
ARSKPSPQLS	AETPVAALPEFPR	-0.23	-0.11	E9Q0S6_MOUSE	
PKHLSRRTL	AFPQVMPPQAR	0.90	1.83	Q3U422_MOUSE	
RGQSSANRR	AGSSSGSGVQASAGGLAADASR	2.40	0.90	E9Q019_MOUSE	
LALAFGLAHA	AMEGPWKTVAIAADR	0.79	0.15	A2AEN9_MOUSE	
NLQSRFRIL	AQMTGTTEYMQDPDEEALR	-0.40	-2.25	E9PYJ9_MOUSE	
VLTGFGMTLC	AVPIAQKSEPQSLNEALMR	0.08	0.12	Q542V8_MOUSE	
LSLEVQELQA	AVRPLQLLGTCAELCR	-0.27	-0.94	Q8BTE6_MOUSE	
WLLDHCQESY	CEPTCQPTCYQR	1.09	3.83	E9Q2E9_MOUSE	

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Non Prime Site	Prime Site	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 1)	Fold change (log <sub>2</sub> ) of ASAPRatio (replicate 2)	Uniprot ID	Protein Name
CQQVGGISTV	CQPVGGISTVCQPTCGVSR	0.26	2.29	E9Q2E9_MOUSE	
HHDYNTYTFI	DLNLDLSKFR	1.39	-0.86	Q3U422_MOUSE	
RKTRVSGEHM	DLTTCPLAAGGQKEKLR	0.58	2.33	Q9D1B1_MOUSE	
PRQPSPSQSS	DSQVHSGVQVEGR	0.88	2.94	F6TL02_MOUSE	
LVFAPVGVQS	DWLSISLPHR	-0.49	-0.84	Q9EQY5_MOUSE	
PHLHSYKEAF	EEMEGTSPSSPPHSVAR	0.31	-0.25	E9Q0S6_MOUSE	
LLAVLPTTTA	EKNNGIDIYSLTVDSR	1.29	1.08	Q9DBK8_MOUSE	
KLPSLAFLYM	EKNQLEEVPSALPR	0.38	-0.52	PRELP_MOUSE	
LQLVSWTLAA	EPVDVLEAWGVHR	0.28	0.96	Q9JLI2_MOUSE	
KSIIMYLTSI	FEVLPQQVTIDAIR	0.14	-0.18	Q3TR59_MOUSE	
LLRGPPVARA	GAGAVGAGPVVR	-0.12	0.06	Q6PE62_MOUSE	
TMRQTYPLQR	GDEAATLLENLASER	0.31	0.54	E9Q492_MOUSE	
VLGVSEPVLA	GDVSSCDNPSGTEPSGTNR	0.39	0.21	Q9D140_MOUSE	
DLHLKGNPK	GEYDVTVPR	-0.69	0.01	F7BRM2_MOUSE	
SMPDVLHLK	GPNVKGEYDVTVPR	-0.15	-0.23	E9Q616_MOUSE	
IPRHEVTEIS	NTDVETQPGKTIVR	-0.15	0.53	E9Q616_MOUSE	
HGYAAGQTW	QEGDKVIRPGVSOAGEEMEQQFGQVGR	0.44	0.60	E9QPB2_MOUSE	
RSSNRDRPR	QPSPSQSSDSQVHSGVQVEGR	1.06	-1.32	F7BVV1_MOUSE	
VETQPGKTVI	RLPSGSGPASPTTGSVAVDIR	-0.12	0.11	E9Q616_MOUSE	
KSMWEKGSVF	SAPSASGTPNKETAGLKVGVSSR	2.63	1.52	Q8VCQ8_MOUSE	
ESQASDSEGH	SDFSEQAQVGAHR	0.57	1.90	E9Q019_MOUSE	
RPRQPSPSQS	SDSQVHSGVQVEAQR	0.67	-1.64	F6TL02_MOUSE	
RPRQPSPSQS	SDSQVHSGVQVEGR	1.98	-0.76	E9Q019_MOUSE	
RPANPNWGVF	SEFGDSSSPATR	1.26	1.55	Q99K47_MOUSE	
WTHEVFSSRS	SEVVLSGDDEDYQR	-0.81	-1.52	E9Q616_MOUSE	
VSVERALADE	SGLDTYLSGGGGVPVLVR	0.60	0.49	A2BFA6_MOUSE	
GKTIVRLPSG	SGPASPTTGSVAVDIR	1.77	0.12	E9Q616_MOUSE	
EQFLPMMQAI	SNNKDQGGYEDFVEGLR	-0.04	0.70	E9PWG4_MOUSE	
KIPRHEVTEI	SNTDVETQPGKTIVR	0.12	0.10	E9Q616_MOUSE	
DRPRQPSPSQ	SSDSQVHSGVQVEGR	0.77	-4.64	E9Q019_MOUSE	
LWSWLPSIGF	SSVEEMAAESR	-0.30	0.26	Q3URZ6_MOUSE	
PRHEVTEISN	TDVETQPGKTIVR	0.33	0.42	E9Q616_MOUSE	
FKEAFLLFDR	TGECKITLSQVGDVLR	0.12	0.55	E9PWG4_MOUSE	
DEESKPASSN	TQVEGDDEEAALLER	0.37	1.71	Q8VCQ8_MOUSE	
TVCQPTCYQR	TSCISTPAQVTCNR	-0.81	6.07	E9Q2E9_MOUSE	
PLPVIHQKV	VANSPANADYQER	-0.52	-0.20	E9PYJ9_MOUSE	
DVDLHLKGNP	VKGEYDVTVPR	0.04	-0.45	F7BRM2_MOUSE	



Table S9, Tholen et al.

<b>Non Prime Site</b>	<b>Prime Site</b>	<b>Fold change (log<sub>2</sub>) of ASAPRatio (replicate 1)</b>	<b>Fold change (log<sub>2</sub>) of ASAPRatio (replicate 2)</b>	<b>Uniprot ID</b>	<b>Protein Name</b>
IESTECRKTR	VSGEHMDLTTCPLAAGGQKEKLR	0.37	0.93	Q9D1B1_MOUSE	
YGGGGGGGYG	GGSGGYGGGGGGYGGGEGYSISPNSYR	-5.64	-6.64	E9QNN1_MOUSE	
SPLPVIHQK	VVANSPANADYQER	-0.81	-0.38	E9PYJ9_MOUSE	
NIDIRSAFKR	SGEGQEDAGELDFSGLLKR	-6.64	-2.32	D3YU50_MOUSE	
SGLLLLTQG	EEAQEIDCNDEAVFQAVDASLKKLNAR	-1.84	-3.18	Q6S9I3_MOUSE	