

**Identification of Protein Targets of 4-Hydroxynonenal Using Click
Chemistry for Ex Vivo Biotinylation of Azido and Alkynyl Derivatives**

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Supporting Information

to

“HNE Protein Targets”

Andrew Vila et al.

Supporting Tables 1-3

Supporting Figure 1-3

Table S1. Proteins identified with Az-HNE treatment of RKO cells (150 μ g of lysate protein). Displayed are the % sequence coverages for 5, 10, and 50 μ M Az-HNE treated cells.

PROTEIN	ACCESSION	Az-HNE		
		50 μ M	10 μ M	5 μ M
14-3-3 protein epsilon	IPI00000816.1	22	18	-
14-3-3 protein theta	IPI00018146.1	16	18	-
14-3-3 protein zeta/delta	IPI00021263.3	23	-	-
16 kDa protein	IPI00005589.1	-	27	-
29 kDa protein	IPI00015139.3	17	-	-
39 kDa protein	IPI00334627.2	28	-	-
40S ribosomal protein S2	IPI00013485.3	12	-	-
40S ribosomal protein S3	IPI00011253.2	41	33	-
40S ribosomal protein S8	IPI00216587.8	-	19	-
40S ribosomal protein S4, X isoform	IPI00217030.9	17	-	-
40S ribosomal protein S7	IPI00013415.1	23	-	-
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	22	10	8
60S acidic ribosomal protein P0	IPI00008530.1	23	-	-
60S ribosomal protein L18a	IPI00026202.1	-	21	21
60S ribosomal protein L21	IPI00247583.4	-	28	-
60S ribosomal protein L27	IPI00219155.4	-	32	-
60S ribosomal protein L30	IPI00219156.6	-	35	-
60S ribosomal protein L6	IPI00329389.5	-	10	-
60S ribosomal protein L4	IPI00003918.4	10	-	-
60S ribosomal protein L9	IPI00031691.1	22	-	-
78 kDa glucose-regulated protein precursor	IPI00003362.1	17	23	7
ADP-ribosylation factor 1	IPI00215914.4	-	20	-
ADP/ATP translocase 2	IPI00007188.4	15	-	-
ALB protein	IPI00022434.2	26	-	-
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	9	6	-
Actin, aortic smooth muscle	IPI00008603.1	16	8	-
Alpha-actinin-1	IPI00013508.4	10	-	-
Alpha-enolase	IPI00465248.4	12	16	-
Alpha-enolase, lung specific	IPI00013769.1	12	12	10
Annexin A5	IPI00329801.11	18	9	-
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	8	10	-
Chloride intracellular channel protein 1	IPI00010896.2	32	-	-
EEF1A1 protein	IPI00025447.6	11	-	-
ELAV-like protein 1	IPI00301936.3	14	-	-
Elongation factor 1-delta	IPI00023048.3	16	-	-
Elongation factor 1-gamma	IPI00000875.5	8	-	-

Elongation factor 2	IPI00186290.5	16	7	-
Elongation factor Tu, mitochondrial precursor	IPI00027107.4	10	-	-
Endoplasmic precursor	IPI00027230.3	5	6	-
Eukaryotic initiation factor 4A-I	IPI00025491.1	9	8	-
Extracellular glycoprotein lacritin precursor	IPI00020487.1	-	-	23
Far upstream element-binding protein 2	IPI00298363.2	8	5	5
Filamin A, alpha	IPI00302592.2	3	-	-
Fructose-bisphosphate aldolase A	IPI00465439.4	26	14	-
GTP-binding nuclear protein RAN	IPI00012507.3	23	19	-
Glutathione S-transferase P	IPI00219757.12	36	23	-
HNRPA2B1 protein	IPI00386854.5	14	-	-
Heat shock 70 kDa protein 1	IPI00304925.3	9	-	-
Heat shock 70 kDa protein 1L	IPI00301277.1	7	-	-
Heat shock 70 kDa protein 4	IPI00002966.1	8	7	-
Heat shock protein HSP 90-alpha 2	IPI00382470.2	6.2	3	-
Hypothetical protein DKFZp761K0511	IPI00334775.5	18	13	5
Keratin 5b	IPI00166205.2	9	6.1	-
Keratin, type II cuticular Hb4	IPI00300052.1	-	-	9
Keratin, type II cytoskeletal 3	IPI00290857.2	4	-	-
Keratin, type II cytoskeletal 4	IPI00290078.2	6	9	-
L-lactate dehydrogenase B chain	IPI00219217.2	28	18	-
Malate dehydrogenase, mitochondrial precursor	IPI00291006.1	36	16	-
Multifunctional protein ADE2	IPI00217223.1	10	-	-
Nucleoside diphosphate kinase A	IPI00012048.1	-	38	-
ORF protein	IPI00171903.1	9	-	-
Peptidyl-prolyl cis-trans isomerase B precursor	IPI00646304.2	-	18	-
PREDICTED: KIAA1765 protein	IPI00028196.4	2	-	-
PREDICTED: similar to ribosomal protein L7	IPI00018680.5	6	-	-
Peroxiredoxin-1	IPI00000874.1	39	37	16
Peroxiredoxin-6	IPI00220301.4	-	16	-
Phosphatidylethanolamine-binding protein	IPI00219446.4	20	31	-
Phosphoglycerate kinase 1	IPI00169383.2	21	-	-
Plastin-2	IPI00010471.3	16	-	-
Poly(rC)-binding protein 1	IPI00016610.2	14	-	-
Profilin-1	IPI00216691.4	-	50	40
Prohibitin-2	IPI00027252.6	20	14	-
Proliferating cell nuclear antigen	IPI00021700.3	17	-	-
Proliferation-associated protein 2G4	IPI00299000.3	-	15	-
Proliferation-inducing gene 21	IPI00552496.1	24	23	-
Protein disulfide-isomerase A3 precursor	IPI00025252.1	7	-	-
Purine nucleoside phosphorylase	IPI00017672.3	18	-	-
Ras-related protein Rab-7	IPI00016342.1	18	-	-
RcTPI1 (Fragment)	IPI00383071.1	27	32	-

Ribosomal pRotein L15; 60S Ribosomal pRotein L15	IPI00375511.4	-	15	-
S-methyl-5-thioadenosine phosphorylase	IPI00011876.1	17	-	-
Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	7	-	-
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00216049.1	25	-	-
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	10	-	-
Splice Isoform 1 of 60S ribosomal protein L11	IPI00219150.5	-	18	-
Splice Isoform 1 of Voltage-dependent anion-selective chann	IPI00031804.1	12	12	-
Splice Isoform B1 of Heterogeneous nuclear ribonucleoprotein	IPI00396378.3	-	14	-
Splice Isoform Long of Heterogenous nuclear ribonucleoprotein	IPI00025054.1	-	7	-
Stress-70 protein, mitochondrial precursor	IPI00007765.5	25	10	8
Stress-induced-phosphoprotein 1	IPI00013894.1	6	-	-
T-complex protein 1 subunit alpha	IPI00290566.1	8	-	-
T-complex protein 1 subunit beta	IPI00297779.6	8	-	-
T-complex protein 1 subunit theta	IPI00302925.3	8	-	-
TUBA6 protein	IPI00166768.2	20	12	13
Thioredoxin-dependent peroxide reductase, mitochondrial pre	IPI00024919.3	15	-	-
Transferrin receptor protein 1	IPI00022462.1	5	-	-
Transitional endoplasmic reticulum ATPase	IPI00022774.2	4	-	-
Tubulin alpha-1 chain	IPI00007750.1	19	-	-
Tubulin beta-1 chain	IPI00006510.1	4	-	-
Tubulin beta-2 chain	IPI00011654.2	13	-	-
Tubulin beta-2C chain	IPI00007752.1	27	22	8
Ubiquitin-activating enzyme E1	IPI00026119.6	9	-	-
Ubiquitin-activating enzyme E1	IPI00645078.1	5	-	-
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	9	-	-
heterogeneous nuclear ribonucleoprotein D-like	IPI00011274.1	6	-	-
keratin 1B	IPI00376379.2	7	-	-
lactate dehydrogenase A	IPI00217966.6	16	9	-
poly(rC)-binding protein 2 isoform b	IPI00012066.1	19	16	-
pyruvate kinase 3 isoform 2	IPI00220644.6	58	18	10

Table S2. Proteins identified with AI-HNE treatment of RKO cells (2 mg of cellular lysate protein). Displayed from left to right are the protein names, the Accession number and percent coverage for all of the proteins in the DMSO control, 5, 10, and 50 μ M AI-HNE treated cells.

DMSO Control (AI-HNE)		
Protein	Accession	% Coverage
14-3-3 protein zeta/delta	IPI00021263.3	18
39 kDa protein	IPI00334627.2	12
40S ribosomal protein S3	IPI00011253.2	15
42 kDa protein	IPI00164375.6	11
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	9
60S acidic ribosomal protein P0	IPI00008530.1	13
60S ribosomal protein L18	IPI00215719.5	26
78 kDa glucose-regulated protein precursor	IPI00003362.1	13
ADP/ATP translocase 2	IPI00007188.4	12
ALB protein	IPI00022434.2	5
Actin, aortic smooth muscle	IPI00008603.1	9
Actin, cytoplasmic 1	IPI00021439.1	13
Alpha-enolase	IPI00465248.4	15
Alpha-enolase, lung specific	IPI00013769.1	10
Cofilin, non-muscle isoform	IPI00012011.4	20
Cytokeratin type II	IPI00005859.1	12
Dermcidin precursor	IPI00027547.2	36
Desmoglein-1 precursor	IPI00025753.1	5
Elongation factor 1-alpha 2	IPI00014424.1	7
Elongation factor 2	IPI00186290.5	6
Filamin A, alpha	IPI00302592.2	3
Fructose-bisphosphate aldolase A	IPI00465439.4	23
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	28
Hypothetical protein DKFZp761K0511	IPI00334775.5	7
KRT17 protein	IPI00450768.5	15
Keratin, type I cytoskeletal 10	IPI00009865.1	44
Keratin, type I cytoskeletal 14	IPI00384444.4	18
Keratin, type I cytoskeletal 16	IPI00217963.2	21
Keratin, type I cytoskeletal 9	IPI00019359.3	51
Keratin, type II cytoskeletal 1	IPI00220327.2	43
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	53
Keratin, type II cytoskeletal 5	IPI00009867.2	21
Keratin, type II cytoskeletal 6A	IPI00300725.6	4
Keratin, type II cytoskeletal 6B	IPI00293665.6	13
L-lactate dehydrogenase B chain	IPI00219217.2	6
Macrophage migration inhibitory factor	IPI00293276.9	18

PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	7
Peroxiredoxin-1	IPI00000874.1	14
Profilin-1	IPI00216691.4	40
Prolactin-inducible protein precursor	IPI00022974.1	25
RcTPI1 (Fragment)	IPI00383071.1	27
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	12
Splice Isoform 1 of Keratin, type I cytoskeletal 13	IPI00009866.6	5
Splice Isoform DPI of Desmoplakin	IPI00013933.1	2
Stress-70 protein, mitochondrial precursor	IPI00007765.5	12
TUBA6 protein	IPI00166768.2	17
Tubulin beta-2 chain	IPI00011654.2	10
Tubulin beta-2C chain	IPI00007752.1	21
poly(rC)-binding protein 2 isoform b	IPI00012066.1	13
pyruvate kinase 3 isoform 2	IPI00220644.6	15
5 μM AI-HNE		
Protein	Accession	% Coverage
116 kDa U5 small nuclear ribonucleoprotein component	IPI00003519.1	7
130 kDa leucine-rich protein	IPI00329745.4	11
14-3-3 protein epsilon	IPI00000816.1	33
14-3-3 protein theta	IPI00018146.1	28
14-3-3 protein zeta/delta	IPI00021263.3	23
19 kDa protein	IPI00027388.5	13
26S proteasome non-ATPase regulatory subunit 2	IPI00012268.2	16
29 kDa protein	IPI00015139.3	17
29 kDa protein	IPI00178083.2	15
39 kDa protein	IPI00334627.2	30
40S ribosomal protein S14	IPI00026271.4	30
40S ribosomal protein S15a	IPI00221091.7	33
40S ribosomal protein S2	IPI00013485.3	16
40S ribosomal protein S3	IPI00011253.2	49
40S ribosomal protein S4, X isoform	IPI00217030.9	16
40S ribosomal protein S6	IPI00021840.1	11
40S ribosomal protein S8	IPI00216587.8	24
40S ribosomal protein S9	IPI00221088.4	16
42 kDa protein	IPI00164375.6	9
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	40
60S acidic ribosomal protein P0	IPI00008530.1	33
60S ribosomal protein L12	IPI00024933.3	43
60S ribosomal protein L18	IPI00215719.5	26
60S ribosomal protein L18a	IPI00026202.1	21
60S ribosomal protein L23	IPI00010153.5	32
60S ribosomal protein L24	IPI00306332.4	13
60S ribosomal protein L30	IPI00219156.6	35
60S ribosomal protein L4	IPI00003918.4	13
60S ribosomal protein L7a	IPI00299573.11	11
60S ribosomal protein L9	IPI00031691.1	22

78 kDa glucose-regulated protein precursor	IPI00003362.1	39
93 kDa protein	IPI00177366.2	6
ADP/ATP translocase 2	IPI00007188.4	21
ALB protein	IPI00022434.2	5
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	15
ATP-citrate synthase	IPI00021290.4	10
ATP-dependent DNA helicase II 80 kDa subunit	IPI00220834.7	5
ATP-dependent RNA helicase DDX3X	IPI00215637.4	16
Acetyl-CoA acetyltransferase, mitochondrial precursor	IPI00030363.1	10
Acidic leucine-rich nuclear phosphoprotein 32 family member	IPI00007423.1	16
Actin, aortic smooth muscle	IPI00008603.1	13
Actin, cytoplasmic 1	IPI00021439.1	31
Activator 1 37 kDa subunit	IPI00017381.1	9
Adenosylhomocysteinase	IPI00012007.5	8
Alanyl-tRNA synthetase	IPI00027442.3	8
Aldehyde dehydrogenase, mitochondrial precursor	IPI00006663.1	21
Alpha-actinin-1	IPI00013508.4	20
Alpha-enolase	IPI00465248.4	21
Alpha-enolase, lung specific	IPI00013769.1	12
Annexin A5	IPI00329801.11	32
Arginyl-tRNA synthetase	IPI00004860.2	14
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	25
Aspartyl-tRNA synthetase	IPI00216951.2	10
Bifunctional purine biosynthesis protein PURH	IPI00289499.3	16
C-1-tetrahydrofolate synthase, cytoplasmic	IPI00218342.9	7
CAD protein	IPI00301263.2	2
CDNA FLJ13369 fis, clone PLACE1000610, weakly similar to MS	IPI00549861.2	7
CDNA FLJ34068 fis, clone FCBBF3001918, highly similar to SE	IPI00168184.6	12
CDNA FLJ45706 fis, clone FEBRA2028457, highly similar to Nu	IPI00444262.1	9
CTP synthase	IPI00290142.5	8
Calnexin precursor	IPI00020984.1	8
Carbonyl reductase [NADPH] 1	IPI00295386.6	15
Chloride intracellular channel protein 1	IPI00010896.2	43
Coatomer subunit beta	IPI00295851.3	5
Coatomer subunit gamma	IPI00001890.7	5
Cofilin, non-muscle isoform	IPI00012011.4	37
Condensin complex subunit 1	IPI00299524.1	2
Coproporphyrinogen III oxidase, mitochondrial precursor	IPI00093057.6	8
Coronin-1C	IPI00008453.3	12
Cytokeratin type II	IPI00005859.1	6
DEAH (Asp-Glu-Ala-His) box polypeptide 9 isoform 1	IPI00215638.4	6
DJ1014D13.1 protein	IPI00465233.1	6
DNA replication licensing factor MCM2	IPI00184330.5	10
DNA replication licensing factor MCM4	IPI00018349.5	7
DNA replication licensing factor MCM6	IPI00031517.1	12

Dolichyl-diphosphooligosaccharide--protein glycosyltransfer	IPI00025874.1	11
Drebrin	IPI00003406.2	7
Dynein heavy chain, cytosolic	IPI00456969.1	3
EEF1A1 protein	IPI00025447.6	23
Early endosome antigen 1	IPI00329536.1	3
Early endosome antigen 1	IPI00329536.1	3
Electron transfer flavoprotein alpha-subunit, mitochondrial	IPI00010810.1	19
Elongation factor 1-alpha 2	IPI00014424.1	18
Elongation factor 1-beta	IPI00178440.2	21
Elongation factor 1-delta	IPI00023048.3	13
Elongation factor 1-gamma	IPI00000875.5	11
Elongation factor 2	IPI00186290.5	34
Elongation factor Tu, mitochondrial precursor	IPI00027107.4	16
Endoplasmic precursor	IPI00027230.3	18
Eukaryotic initiation factor 4A-I	IPI00025491.1	12
Eukaryotic translation initiation factor 3 subunit 10	IPI00029012.1	8
Eukaryotic translation initiation factor 3 subunit 7	IPI00006181.1	6
Exportin-1	IPI00298961.3	6
FK506-binding protein 4	IPI00219005.2	11
Family with sequence similarity 62 (C2 domain containing),	IPI00022143.3	5
Far upstream element-binding protein 2	IPI00298363.2	18
Fatty acid synthase	IPI00026781.2	26
Fatty acid-binding protein, epidermal	IPI00007797.2	25
Filamin A, alpha	IPI00302592.2	24
Fructose-bisphosphate aldolase A	IPI00465439.4	36
G22P1 protein	IPI00465430.4	7
GARS protein	IPI00465260.3	5
GCN1-like protein 1	IPI00001159.8	3
GMP synthase	IPI00029079.5	9
GPI-anchored protein p137	IPI00030910.1	5
GTP-binding nuclear protein RAN	IPI00012507.3	14
Glucose-6-phosphate isomerase	IPI00027497.4	10
Glutathione S-transferase P	IPI00219757.12	32
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	36
Guanine nucleotide-binding protein beta subunit 2-like 1	IPI00641950.1	14
HADH2 protein	IPI00017726.1	36
HNRPF protein	IPI00003881.5	20
Heat shock 70 kDa protein 1	IPI00304925.3	17
Heat shock 70 kDa protein 1L	IPI00301277.1	9
Heat shock 70 kDa protein 4	IPI00002966.1	27
Heat shock 70 kDa protein 4L	IPI00295485.1	12
Heat shock protein 75 kDa, mitochondrial precursor	IPI00030275.5	9
Heat shock protein HSP 90-alpha 2	IPI00382470.2	11
Histone H4	IPI00453473.5	29
Hypothetical protein DKFZp313B047	IPI00013452.8	10
Hypothetical protein DKFZp451D234	IPI00031583.2	4
Hypothetical protein DKFZp686L20222	IPI00026689.4	13

Hypothetical protein DKFZp761K0511	IPI00334775.5	35
Hypoxanthine-guanine phosphoribosyltransferase	IPI00218493.6	17
IARS protein	IPI00013234.2	9
Importin beta-1 subunit	IPI00001639.2	11
Importin beta-2 subunit	IPI00024364.2	5
Importin beta-3	IPI00329200.5	10
Inosine-5'-monophosphate dehydrogenase 2	IPI00291510.3	9
Keratin, type I cytoskeletal 10	IPI00009865.1	42
Keratin, type I cytoskeletal 14	IPI00384444.4	14
Keratin, type I cytoskeletal 9	IPI00019359.3	49
Keratin, type II cytoskeletal 1	IPI00220327.2	50
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	49
Keratin, type II cytoskeletal 5	IPI00009867.2	13
Kinesin heavy chain	IPI00012837.1	12
L-lactate dehydrogenase B chain	IPI00219217.2	40
Lamina-associated polypeptide 2 isoform alpha	IPI00216230.2	6
Leucyl-tRNA synthetase, cytoplasmic	IPI00103994.4	7
Malate dehydrogenase, cytoplasmic	IPI00291005.7	17
Malate dehydrogenase, mitochondrial precursor	IPI00291006.1	44
Methionyl-tRNA synthetase	IPI00008240.2	5
Microsomal glutathione S-transferase 1	IPI00021805.1	27
Multifunctional protein ADE2	IPI00217223.1	18
Myosin regulatory light chain	IPI00033494.3	19
Myosin-9	IPI00019502.2	33
NCL protein	IPI00183526.5	10
NOL1/NOP2/Sun domain family 2 protein	IPI00306369.3	9
Nucleoside diphosphate kinase A	IPI00012048.1	24
ORF protein	IPI00171903.1	11
PREDICTED: KIAA0368 protein	IPI00157790.4	5
PREDICTED: KIAA1765 protein	IPI00028196.4	2
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	19
PREDICTED: similar to 40S ribosomal protein SA	IPI00397774.1	18
PREDICTED: similar to 60S ribosomal protein L27a	IPI00398135.2	22
PREDICTED: similar to Ran-specific GTPase-activating protei	IPI00399212.1	15
Peptidyl-prolyl cis-trans isomerase B precursor	IPI00646304.2	24
Peroxiredoxin-1	IPI00000874.1	34
Peroxiredoxin-2	IPI00027350.2	14
Peroxiredoxin-6	IPI00220301.4	25
Phosphoglycerate kinase 1	IPI00169383.2	14
Phosphoglycerate mutase 2	IPI00218570.5	14
Phosphoribosylformylglycinamide synthase	IPI00004534.3	6
Plastin-2	IPI00010471.3	26
Poly(rC)-binding protein 1	IPI00016610.2	21
Pre-mRNA-processing splicing factor 8	IPI00007928.4	2
Pre-mRNA-processing splicing factor 8	IPI00007928.4	2
Probable ATP-dependent RNA helicase DDX5	IPI00017617.1	13
Profilin-1	IPI00216691.4	50

Prohibitin	IPI00017334.1	28
Proliferating cell nuclear antigen	IPI00021700.3	41
Proliferation-associated protein 2G4	IPI00299000.3	12
Proliferation-inducing gene 21	IPI00552496.1	35
Proteasome activator complex subunit 2	IPI00384051.4	23
Protein disulfide-isomerase A3 precursor	IPI00025252.1	18
Protein phosphatase 2C isoform gamma	IPI00006167.1	7
Purine nucleoside phosphorylase	IPI00017672.3	18
Puromycin-sensitive aminopeptidase	IPI00026216.4	7
Ras GTPase-activating-like protein IQGAP1	IPI00009342.1	6
Ras-related protein Rap-1b precursor	IPI00015148.3	21
RcTPI1 (Fragment)	IPI00383071.1	32
Ribonuclease inhibitor	IPI00550069.2	13
Ribonucleases P/MRP protein subunit POP1	IPI00293331.3	3
Ribonucleoside-diphosphate reductase large subunit	IPI00013871.1	8
Ribosomal pRotein L15; 60S Ribosomal pRotein L15	IPI00375511.4	17
S-methyl-5-thioadenosine phosphorylase	IPI00011876.1	20
Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	8
Serine-threonine kinase receptor-associated protein	IPI00294536.1	14
Serine/threonine-protein phosphatase 2A catalytic subunit a	IPI00008380.1	13
Signal recognition particle receptor beta subunit	IPI00295098.3	28
Similar to Clathrin heavy chain	IPI00024067.2	14
Similar to heterogeneous nuclear ribonucleoprotein A1 isofo	IPI00042578.5	10
Splice Isoform 1 of 60S ribosomal protein L11	IPI00219150.5	18
Splice Isoform 1 of Clathrin heavy chain 2	IPI00022881.1	3
Splice Isoform 1 of Cullin-associated NEDD8-dissociated pro	IPI00100160.3	14
Splice Isoform 1 of DNA replication licensing factor MCM7	IPI00299904.3	6
Splice Isoform 1 of DNA-dependent protein kinase catalytic	IPI00296337.2	9
Splice Isoform 1 of F-actin capping protein beta subunit	IPI00026185.5	21
Splice Isoform 1 of Filamin-B	IPI00289334.1	7
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	39
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00216049.1	34
Splice Isoform 1 of Hexokinase-1	IPI00018246.4	3
Splice Isoform 1 of Importin-4	IPI00156374.4	7
Splice Isoform 1 of Importin-alpha re-exporter	IPI00022744.5	11
Splice Isoform 1 of Isocitrate dehydrogenase [NAD] subunit	IPI00030702.1	9
Splice Isoform 1 of Mitochondrial inner membrane protein	IPI00009960.6	14
Splice Isoform 1 of Nucleolar RNA helicase 2	IPI00015953.3	6
Splice Isoform 1 of Plectin 1	IPI00014898.1	2
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	18
Splice Isoform 1 of Polypyrimidine tract-binding protein 1	IPI00179964.5	15
Splice Isoform 1 of Proteasome activator complex subunit 3	IPI00030243.1	20
Splice Isoform 1 of Spectrin alpha chain, brain	IPI00413728.2	2
Splice Isoform 1 of Structural maintenance of chromosome 2-	IPI00007927.3	3
Splice Isoform 1 of Transcription intermediary factor 1-bet	IPI00438229.1	13
Splice Isoform 1 of Uridine phosphorylase 1	IPI00004406.1	17
Splice Isoform 1 of Voltage-dependent anion-selective chann	IPI00024145.1	31

Splice Isoform 1 of Voltage-dependent anion-selective chann	IPI00031804.1	39
Splice Isoform 2 of NMDA receptor-regulated protein 1	IPI00032158.2	11
Splice Isoform 2 of Nucleophosmin	IPI00220740.1	20
Splice Isoform 2 of Signal recognition particle 68 kDa prot	IPI00102936.3	6
Splice Isoform 2 of Structural maintenance of chromosomes 4	IPI00328298.6	4
Splice Isoform A of Phosphate carrier protein, mitochondria	IPI00022202.3	12
Splice Isoform AGX2 of UDP-N-acetylhexosamine pyrophosphory	IPI00000684.4	7
Splice Isoform C1 of Heterogeneous nuclear ribonucleoprotei	IPI00216592.1	9
Splice Isoform DUT-M of Deoxyuridine 5'-triphosphate nucleo	IPI00013679.1	15
Splice Isoform GTBP-alt of DNA mismatch repair protein MSH6	IPI00106847.3	3
Splice Isoform Gamma-1 of Serine/threonine-protein phosphat	IPI00005705.1	16
Splice Isoform Long of Delta 1-pyrroline-5-carboxylate synt	IPI00008982.1	17
Splice Isoform Long of Heterogenous nuclear ribonucleoprote	IPI00025054.1	14
Splice Isoform Long of Sodium/potassium-transporting ATPase	IPI00006482.1	4
Splice Isoform Long of Trifunctional purine biosynthetic pr	IPI00025273.1	13
Splice Isoform Long of Ubiquitin carboxyl-terminal hydrolas	IPI00024664.1	9
Splice Isoform SERCA1B of Sarcoplasmic/endoplasmic reticulu	IPI00024804.3	7
Splice Isoform SERCA2A of Sarcoplasmic/endoplasmic reticulu	IPI00177817.4	6
Splicing factor 3B subunit 1	IPI00026089.3	4
Splicing factor 3B subunit 3	IPI00300371.3	9
Staphylococcal nuclease domain-containing protein 1	IPI00140420.4	15
Stress-70 protein, mitochondrial precursor	IPI00007765.5	37
Stress-induced-phosphoprotein 1	IPI00013894.1	14
T-complex protein 1 subunit alpha	IPI00290566.1	16
T-complex protein 1 subunit beta	IPI00297779.6	18
T-complex protein 1 subunit delta	IPI00302927.5	10
T-complex protein 1 subunit epsilon	IPI00010720.1	8
T-complex protein 1 subunit eta	IPI00018465.1	18
T-complex protein 1 subunit theta	IPI00302925.3	18
T-complex protein 1 subunit zeta	IPI00027626.2	23
TUBA6 protein	IPI00166768.2	20
Talin-1	IPI00298994.4	8
Thioredoxin-dependent peroxide reductase, mitochondrial pre	IPI00024919.3	16
Threonyl-tRNA synthetase, cytoplasmic	IPI00329633.5	10
Transferrin receptor protein 1	IPI00022462.1	7
Transitional endoplasmic reticulum ATPase	IPI00022774.2	23
Transketolase	IPI00021716.1	16
Translocated promoter region	IPI00022970.3	2
Trifunctional enzyme alpha subunit, mitochondrial precursor	IPI00031522.2	13
Tubulin alpha-1 chain	IPI00007750.1	41
Tubulin beta-1 chain	IPI00006510.1	6

Tubulin beta-2 chain	IPI00011654.2	17
Tubulin beta-2C chain	IPI00007752.1	56
U5 small nuclear ribonucleoprotein 200 kDa helicase	IPI00420014.2	4
Ubiquitin carboxyl-terminal hydrolase 7	IPI00003965.4	5
Ubiquitin-activating enzyme E1	IPI00026119.6	14
Ubiquitin-activating enzyme E1	IPI00645078.1	10
Valyl-tRNA synthetase	IPI00000873.3	3
WUGSC:H_RG054D04.1 protein	IPI00011457.1	14
Zyxin	IPI00020513.2	10
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	13
heterogeneous nuclear ribonucleoprotein D-like	IPI00011274.1	11
heterogeneous nuclear ribonucleoprotein H1	IPI00013881.5	19
heterogeneous nuclear ribonucleoprotein L isoform a	IPI00027834.3	11
homolog of yeast mRNA transport regulator 3	IPI00073602.1	13
lactate dehydrogenase A	IPI00217966.6	24
poly(rC)-binding protein 2 isoform b	IPI00012066.1	27
pyruvate kinase 3 isoform 2	IPI00220644.6	52
smooth muscle and non-muscle myosin alkali light chain isof	IPI00066374.1	27
thymopoietin isoform beta	IPI00030131.2	13
10 μM AI-HNE		
Protein	Accession	% Coverage
116 kDa U5 small nuclear ribonucleoprotein component	IPI00003519.1	6
130 kDa leucine-rich protein	IPI00329745.4	14
14-3-3 protein beta/alpha	IPI00216318.4	23
14-3-3 protein epsilon	IPI00000816.1	42
14-3-3 protein theta	IPI00018146.1	36
14-3-3 protein zeta/delta	IPI00021263.3	40
19 kDa protein	IPI00027388.5	18
26S protease regulatory subunit 4	IPI00011126.6	20
26S protease regulatory subunit 6A	IPI00018398.4	15
26S protease regulatory subunit 7	IPI00021435.2	19
26S protease regulatory subunit 8	IPI00023919.4	9
26S proteasome non-ATPase regulatory subunit 12	IPI00185374.3	10
26S proteasome non-ATPase regulatory subunit 2	IPI00012268.2	16
29 kDa protein	IPI00015139.3	23
29 kDa protein	IPI00178083.2	29
29 kDa protein	IPI00453476.2	36
3-ketoacyl-CoA thiolase, mitochondrial	IPI00001539.8	18
31 kDa protein	IPI00374686.2	9
38 kDa protein	IPI00293845.3	13
39 kDa protein	IPI00334627.2	30
40S ribosomal protein S14	IPI00026271.4	30
40S ribosomal protein S15a	IPI00221091.7	33
40S ribosomal protein S16	IPI00221092.7	20
40S ribosomal protein S17	IPI00221093.6	41
40S ribosomal protein S2	IPI00013485.3	25

40S ribosomal protein S20	IPI00012493.1	23
40S ribosomal protein S25	IPI00012750.3	16
40S ribosomal protein S3	IPI00011253.2	37
40S ribosomal protein S4, X isoform	IPI00217030.9	21
40S ribosomal protein S5	IPI00008433.3	24
40S ribosomal protein S6	IPI00021840.1	16
40S ribosomal protein S8	IPI00216587.8	31
40S ribosomal protein S9	IPI00221088.4	13
42 kDa protein	IPI00164375.6	11
4F2 cell-surface antigen heavy chain	IPI00027493.1	9
53 kDa protein	IPI00172579.3	12
6-phosphogluconate dehydrogenase, decarboxylating	IPI00219525.9	20
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	44
60 kDa protein	IPI00220480.6	8
60S acidic ribosomal protein P0	IPI00008530.1	58
60S ribosomal protein L12	IPI00024933.3	43
60S ribosomal protein L18	IPI00215719.5	26
60S ribosomal protein L18a	IPI00026202.1	21
60S ribosomal protein L19	IPI00025329.1	14
60S ribosomal protein L23	IPI00010153.5	38
60S ribosomal protein L24	IPI00306332.4	19
60S ribosomal protein L30	IPI00219156.6	35
60S ribosomal protein L36	IPI00216237.4	22
60S ribosomal protein L38	IPI00215790.5	36
60S ribosomal protein L4	IPI00003918.4	15
60S ribosomal protein L6	IPI00329389.5	14
60S ribosomal protein L8	IPI00012772.7	19
60S ribosomal protein L9	IPI00031691.1	22
78 kDa glucose-regulated protein precursor	IPI00003362.1	34
80 kDa nuclear cap binding protein	IPI00019380.1	5
93 kDa protein	IPI00177366.2	10
ADP-ribosylation factor 1	IPI00215914.4	36
ADP/ATP translocase 2	IPI00007188.4	20
ALB protein	IPI00022434.2	8
ATP synthase O subunit, mitochondrial precursor	IPI00007611.1	34
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	29
ATP-citrate synthase	IPI00021290.4	14
ATP-dependent DNA helicase II 80 kDa subunit	IPI00220834.7	5
ATP-dependent RNA helicase DDX3X	IPI00215637.4	18
Acetyl-CoA acetyltransferase, mitochondrial precursor	IPI00030363.1	15
Actin, aortic smooth muscle	IPI00008603.1	21
Actin, cytoplasmic 1	IPI00021439.1	32
Actin-like protein 2	IPI00005159.3	9
Adenosylhomocysteinase	IPI00012007.5	8
Adenylate kinase isoenzyme 1	IPI00018342.5	23
Adenyl cyclase-associated protein 1	IPI00008274.5	9
Alanyl-tRNA synthetase	IPI00027442.3	12

Aldehyde dehydrogenase, mitochondrial precursor	IPI00006663.1	32
Alpha-actinin-1	IPI00013508.4	29
Alpha-actinin-4	IPI00013808.1	11
Alpha-enolase	IPI00465248.4	33
Alpha-enolase, lung specific	IPI00013769.1	12
Alpha-taxilin	IPI00470779.2	10
Annexin A5	IPI00329801.11	20
Arginyl-tRNA synthetase	IPI00004860.2	19
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	21
Aspartyl-tRNA synthetase	IPI00216951.2	8
BAG family molecular chaperone regulator 2	IPI00000643.1	15
Bifunctional purine biosynthesis protein PURH	IPI00289499.3	30
C-1-tetrahydrofolate synthase, cytoplasmic	IPI00218342.9	11
CAD protein	IPI00301263.2	10
CDNA FLJ10719 fis, clone NT2RP3001109. (Fragment)	IPI00019447.3	4
CDNA FLJ13369 fis, clone PLACE1000610, weakly similar to MS	IPI00549861.2	12
CDNA FLJ33352 fis, clone BRACE2005087, weakly similar to PR	IPI00168235.4	7
CDNA FLJ34068 fis, clone FCBBF3001918, highly similar to SE	IPI00168184.6	20
CDNA FLJ45525 fis, clone BRTHA2026311, highly similar to Pr	IPI00299571.4	14
CDNA FLJ45706 fis, clone FEBRA2028457, highly similar to Nu	IPI00444262.1	10
CTP synthase	IPI00290142.5	12
Calponin-2	IPI00015262.9	22
Carbonyl reductase [NADPH] 1	IPI00295386.6	33
Cargo selection protein TIP47	IPI00106668.3	22
Chloride intracellular channel protein 1	IPI00010896.2	52
Chromobox protein homolog 1	IPI00010320.1	9
Chromobox protein homolog 3	IPI00297579.3	21
Chromosome 9 open reading frame 32	IPI00515040.1	21
Citrate synthase, mitochondrial precursor	IPI00025366.4	8
Coatomer subunit beta	IPI00295851.3	4
Coatomer subunit gamma	IPI00001890.7	9
Cofilin, non-muscle isoform	IPI00012011.4	42
Coiled-coil-helix-coiled-coil-helix domain-containing prote	IPI00015833.1	22
Condensin complex subunit 1	IPI00299524.1	3
Copine-3	IPI00024403.1	6
Coproporphyrinogen III oxidase, mitochondrial precursor	IPI00093057.6	9
Coronin-1C	IPI00008453.3	15
Crk-like protein	IPI00004839.1	14
Cytochrome c oxidase subunit 2	IPI00017510.3	16
Cytokeratin type II	IPI00005859.1	14
D-3-phosphoglycerate dehydrogenase	IPI00011200.4	15
DEAH (Asp-Glu-Ala-His) box polypeptide 9 isoform 1	IPI00215638.4	12
DEAH (Asp-Glu-Ala-His) box polypeptide 9 isoform 2	IPI00155723.3	19

DJ1014D13.1 protein	IPI00465233.1	9
DNA replication licensing factor MCM2	IPI00184330.5	11
DNA replication licensing factor MCM4	IPI00018349.5	6
DNA replication licensing factor MCM6	IPI00031517.1	11
DNA replication licensing factor MCM6	IPI00031517.1	11
Desmoglein-1 precursor	IPI00025753.1	5
DnaJ homolog subfamily A member 1	IPI00012535.1	13
DnaJ homolog subfamily C member 7	IPI00329629.6	7
Dolichyl-diphosphooligosaccharide--protein glycosyltransfer	IPI00025874.1	18
Drebrin	IPI00003406.2	7
Dynactin 2 variant (Fragment)	IPI00220503.8	13
Dynein heavy chain, cytosolic	IPI00456969.1	4
EEF1A1 protein	IPI00025447.6	23
ENO1P protein	IPI00328587.4	7
ERO1-like protein alpha precursor	IPI00386755.2	10
Early endosome antigen 1	IPI00329536.1	7
Electron transfer flavoprotein alpha-subunit, mitochondrial	IPI00010810.1	26
Elongation factor 1-alpha 2	IPI00014424.1	18
Elongation factor 1-beta	IPI00178440.2	21
Elongation factor 1-delta	IPI00023048.3	13
Elongation factor 1-gamma	IPI00000875.5	24
Elongation factor 2	IPI00186290.5	47
Elongation factor Tu, mitochondrial precursor	IPI00027107.4	24
Endoplasmin precursor	IPI00027230.3	22
Enoyl-CoA hydratase, mitochondrial precursor	IPI00024993.4	19
Eukaryotic translation initiation factor 3 subunit 10	IPI00029012.1	8
Eukaryotic translation initiation factor 3 subunit 4	IPI00290460.3	11
Eukaryotic translation initiation factor 3 subunit 8	IPI00016910.1	4
Eukaryotic translation initiation factor 6	IPI00010105.1	29
Exportin-1	IPI00298961.3	13
F-actin capping protein alpha-1 subunit	IPI00005969.1	26
FK506-binding protein 4	IPI00219005.2	19
Family with sequence similarity 62 (C2 domain containing),	IPI00022143.3	12
Far upstream element-binding protein 2	IPI00298363.2	26
Fatty acid synthase	IPI00026781.2	27
Fatty acid synthase	IPI00026781.2	27
Fatty acid-binding protein, epidermal	IPI00007797.2	26
Filamin A, alpha	IPI00302592.2	39
Fructose-bisphosphate aldolase A	IPI00465439.4	46
Fructose-bisphosphate aldolase C	IPI00418262.3	15
Fumarate hydratase, mitochondrial precursor	IPI00296053.3	21
G22P1 protein	IPI00465430.4	13
GARS protein	IPI00465260.3	14
GCN1-like protein 1	IPI00001159.8	4
GMP synthase	IPI00029079.5	15
GPI-anchored protein p137	IPI00030910.1	5
GTP-binding nuclear protein RAN	IPI00012507.3	25

Galectin-1	IPI00219219.2	31
Gamma-enolase	IPI00216171.2	13
Glucosamine 6-phosphate N-acetyltransferase	IPI00061525.3	23
Glucose-6-phosphate isomerase	IPI00027497.4	15
Glutamyl-tRNA synthetase	IPI00026665.1	6
Glutathione S-transferase P	IPI00219757.12	48
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	54
GrpE protein homolog 1, mitochondrial precursor	IPI00029557.3	12
Guanine nucleotide-binding protein G(I)/G(S)/G(T) beta subu	IPI00003348.2	12
Guanine nucleotide-binding protein G(I)/G(S)/G(T) beta subu	IPI00003348.2	12
HADH2 protein	IPI00017726.1	48
HLA class I histocompatibility antigen, B-7 alpha chain pre	IPI00004657.1	14
HNRPF protein	IPI00003881.5	20
Heat shock 70 kDa protein 1	IPI00304925.3	15
Heat shock 70 kDa protein 1L	IPI00301277.1	13
Heat shock 70 kDa protein 4	IPI00002966.1	33
Heat shock 70 kDa protein 4L	IPI00295485.1	17
Heat shock protein 75 kDa, mitochondrial precursor	IPI00030275.5	14
Heat shock protein HSP 90-alpha 2	IPI00382470.2	14
Heat-shock protein beta-1	IPI00025512.2	55
Heterogeneous nuclear ribonucleoprotein R	IPI00012074.3	9
Histidyl-tRNA synthetase	IPI00021808.3	17
Histone H1.2	IPI00217465.4	15
Histone H4	IPI00453473.5	31
Histone acetyltransferase type B catalytic subunit	IPI00024719.1	11
Hsc70-interacting protein	IPI00032826.1	13
Hsp90 co-chaperone Cdc37	IPI00013122.1	15
Hypothetical protein DKFZp313B047	IPI00013452.8	14
Hypothetical protein DKFZp761K0511	IPI00334775.5	34
Hypothetical protein FLJ13194	IPI00018627.1	24
Hypothetical protein LRRC59	IPI00396321.1	18
Hypoxanthine-guanine phosphoribosyltransferase	IPI00218493.6	23
IARS protein	IPI00013234.2	9
Importin alpha-2 subunit	IPI00002214.1	15
Importin beta-1 subunit	IPI00001639.2	15
Importin beta-2 subunit	IPI00024364.2	7
Importin beta-3	IPI00329200.5	14
Inorganic pyrophosphatase	IPI00015018.1	18
Inosine-5'-monophosphate dehydrogenase 2	IPI00291510.3	13
Interleukin enhancer-binding factor 2	IPI00005198.2	15
Junction plakoglobin	IPI00554711.1	6
Keratin 5b	IPI00166205.2	9
Keratin, type I cytoskeletal 10	IPI00009865.1	55
Keratin, type I cytoskeletal 14	IPI00384444.4	25
Keratin, type I cytoskeletal 16	IPI00217963.2	25
Keratin, type I cytoskeletal 9	IPI00019359.3	62
Keratin, type II cytoskeletal 1	IPI00220327.2	53

Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	67
Keratin, type II cytoskeletal 2 oral	IPI00008359.1	3
Keratin, type II cytoskeletal 5	IPI00009867.2	30
Keratin, type II cytoskeletal 6B	IPI00293665.6	18
Kinesin heavy chain	IPI00012837.1	20
L-lactate dehydrogenase B chain	IPI00219217.2	46
LAP3 protein	IPI00419237.2	7
LTA4H protein	IPI00219077.3	15
Lactoylglutathione lyase	IPI00220766.3	21
Lamina-associated polypeptide 2 isoform alpha	IPI00216230.2	21
Leucine zipper-EF-hand containing transmembrane protein 1,	IPI00017592.1	4
Leucyl-tRNA synthetase, cytoplasmic	IPI00103994.4	6
Lupus La protein	IPI00009032.1	13
Macrophage migration inhibitory factor	IPI00293276.9	18
Malate dehydrogenase, cytoplasmic	IPI00291005.7	29
Malate dehydrogenase, mitochondrial precursor	IPI00291006.1	47
Matrin-3	IPI00017297.1	13
Methionine adenosyltransferase II, beta, isoform 1	IPI00002324.3	18
Methionyl-tRNA synthetase	IPI00008240.2	7
Methionyl-tRNA synthetase	IPI00008240.2	7
Microsomal glutathione S-transferase 1	IPI00021805.1	27
Mitochondrial import receptor subunit TOM34	IPI00009946.4	17
Mitochondrial processing peptidase beta subunit, mitochondr	IPI00289535.6	13
Mitotic checkpoint protein BUB3	IPI00013468.1	20
Multifunctional protein ADE2	IPI00217223.1	34
Multisynthetase complex auxiliary component p38	IPI00011916.1	20
Myosin-9	IPI00019502.2	38
NADH-ubiquinone oxidoreductase 30 kDa subunit, mitochondria	IPI00025796.3	14
NCL protein	IPI00183526.5	14
NOL1/NOP2/Sun domain family 2 protein	IPI00306369.3	11
Neuroblast differentiation-associated protein AHNAK (Fragme	IPI00021812.1	5
Non-POU domain-containing octamer-binding protein	IPI00304596.3	5
Nuclear migration protein nudC	IPI00550746.4	14
Nuclear pore complex protein Nup153	IPI00292059.1	3
Nuclease sensitive element-binding protein 1	IPI00031812.1	23
Nucleoside diphosphate kinase A	IPI00012048.1	34
ORF protein	IPI00171903.1	17
P63 protein	IPI00141318.1	15
PREDICTED: KIAA0368 protein	IPI00157790.4	6
PREDICTED: KIAA1765 protein	IPI00028196.4	2
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	19
PREDICTED: similar to 60S ribosomal protein L27a	IPI00398135.2	22
PREDICTED: similar to Ran-specific GTPase-activating protei	IPI00399212.1	15
PREDICTED: similar to Ran-specific GTPase-activating protei	IPI00399212.1	15
Peptidyl-prolyl cis-trans isomerase A	IPI00419585.8	18
Peptidyl-prolyl cis-trans isomerase B precursor	IPI00646304.2	22
Peroxiredoxin-1	IPI00000874.1	28

Peroxiredoxin-2	IPI00027350.2	23
Peroxiredoxin-4	IPI00011937.1	16
Peroxiredoxin-4	IPI00011937.1	16
Peroxiredoxin-6	IPI00220301.4	31
Peroxisomal multifunctional enzyme type 2	IPI00019912.1	5
Phosphatidylethanolamine-binding protein	IPI00219446.4	36
Phosphoglycerate kinase 1	IPI00169383.2	44
Phosphoribosylformylglycinamide synthase	IPI00004534.3	13
Plastin-2	IPI00010471.3	42
Poly(rC)-binding protein 1	IPI00016610.2	39
Pre-mRNA branch site protein p14	IPI00032827.1	30
Pre-mRNA-processing splicing factor 8	IPI00007928.4	4
Probable ATP-dependent RNA helicase DDX5	IPI00017617.1	15
Profilin-1	IPI00216691.4	65
Programmed cell death 6-interacting protein	IPI00246058.4	7
Prohibitin	IPI00017334.1	36
Prohibitin-2	IPI00027252.6	14
Proliferating cell nuclear antigen	IPI00021700.3	37
Proliferation-associated protein 2G4	IPI00299000.3	28
Proliferation-inducing gene 21	IPI00552496.1	48
Prostaglandin E synthase 3	IPI00015029.1	36
Proteasome activator complex subunit 2	IPI00384051.4	32
Proteasome subunit alpha type 2	IPI00219622.2	23
Proteasome subunit beta type (Fragment)	IPI00375704.1	28
Proteasome subunit beta type 1	IPI00025019.3	20
Proteasome subunit beta type 3	IPI00028004.2	23
Protein C14orf166	IPI00006980.1	18
Protein disulfide-isomerase A3 precursor	IPI00025252.1	19
Protein-L-isoaspartate (D-aspartate) O-methyltransferase	IPI00024989.7	29
Purine nucleoside phosphorylase	IPI00017672.3	19
Puromycin-sensitive aminopeptidase	IPI00026216.4	9
Putative eukaryotic translation initiation factor 3 subunit	IPI00024425.2	3
RAB1A, member RAS oncogene family	IPI00005719.1	33
Rab GDP dissociation inhibitor beta	IPI00031461.1	23
Ran GTPase-activating protein 1	IPI00294879.1	7
Ran-binding protein 2	IPI00221325.3	1
Ras GTPase-activating-like protein IQGAP1	IPI00009342.1	14
Ras-related protein Rab-7	IPI00016342.1	18
Ras-related protein Rap-1b precursor	IPI00015148.3	21
RcTPI1 (Fragment)	IPI00383071.1	32
Ribonuclease inhibitor	IPI00550069.2	20
Ribonucleases P/MRP protein subunit POP1	IPI00293331.3	8
Ribonucleoside-diphosphate reductase large subunit	IPI00013871.1	17
Ribosomal pRotein L15; 60S Ribosomal pRotein L15	IPI00375511.4	17
RuvB-like 1	IPI00021187.3	18
S-adenosylmethionine synthetase isoform type-2	IPI00010157.1	14
Sepiapterin reductase	IPI00017469.1	27

Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	25
Serine-threonine kinase receptor-associated protein	IPI00294536.1	14
Serine/threonine-protein phosphatase 2A catalytic subunit a	IPI00008380.1	18
Signal recognition particle 14 kDa protein	IPI00293434.1	15
Signal recognition particle 72 kDa protein	IPI00215888.3	8
Signal recognition particle receptor beta subunit	IPI00295098.3	29
Similar to Clathrin heavy chain	IPI00024067.2	16
Similar to Eukaryotic translation initiation factor 4GI	IPI00220365.3	5
Similar to Ras-related protein Rab-5C	IPI00016339.3	16
Splice Isoform 1 of Calcyclin-binding protein	IPI00395627.3	37
Splice Isoform 1 of Chromodomain helicase-DNA-binding prote	IPI00000846.1	3
Splice Isoform 1 of Clathrin heavy chain 2	IPI00022881.1	6
Splice Isoform 1 of Cullin-associated NEDD8-dissociated pro	IPI00100160.3	15
Splice Isoform 1 of DNA-dependent protein kinase catalytic	IPI00296337.2	9
Splice Isoform 1 of Elongation factor Ts, mitochondrial pre	IPI00021016.3	18
Splice Isoform 1 of F-actin capping protein beta subunit	IPI00026185.5	21
Splice Isoform 1 of Far upstream element-binding protein 3	IPI00377261.1	8
Splice Isoform 1 of Filamin-B	IPI00289334.1	12
Splice Isoform 1 of Filamin-C	IPI00178352.3	1
Splice Isoform 1 of General transcription factor II-I	IPI00054042.1	3
Splice Isoform 1 of Glucosamine--fructose-6-phosphate amino	IPI00217952.6	11
Splice Isoform 1 of Glucosamine--fructose-6-phosphate amino	IPI00217952.6	11
Splice Isoform 1 of Golgin subfamily A member 2	IPI00156651.1	8
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	38
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00028888.1	10
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00216049.1	38
Splice Isoform 1 of Importin-4	IPI00156374.4	4
Splice Isoform 1 of Importin-alpha re-exporter	IPI00022744.5	17
Splice Isoform 1 of Isocitrate dehydrogenase [NAD] subunit	IPI00030702.1	20
Splice Isoform 1 of Keratin, type I cytoskeletal 13	IPI00009866.6	5
Splice Isoform 1 of Kinectin	IPI00328753.1	5
Splice Isoform 1 of La-related protein 1	IPI00185919.3	4
Splice Isoform 1 of Mitochondrial inner membrane protein	IPI00009960.6	13
Splice Isoform 1 of Myb-binding protein 1A	IPI00005024.3	3
Splice Isoform 1 of Nuclear autoantigenic sperm protein	IPI00179953.2	11
Splice Isoform 1 of Plectin 1	IPI00014898.1	3
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	19
Splice Isoform 1 of Polypyrimidine tract-binding protein 1	IPI00179964.5	18
Splice Isoform 1 of Polypyrimidine tract-binding protein 1	IPI00179964.5	18
Splice Isoform 1 of Probable ATP-dependent RNA helicase DDX	IPI00023785.5	6
Splice Isoform 1 of Probable mitochondrial import receptor	IPI00014053.3	12
Splice Isoform 1 of Proteasome activator complex subunit 3	IPI00030243.1	28
Splice Isoform 1 of Protein KIAA1967	IPI00182757.9	11
Splice Isoform 1 of Protein arginine N-methyltransferase 1	IPI00018522.3	17

Splice Isoform 1 of Spectrin alpha chain, brain	IPI00413728.2	4
Splice Isoform 1 of Structural maintenance of chromosome 2-	IPI00007927.3	5
Splice Isoform 1 of Surfeit locus protein 4	IPI00005737.1	14
Splice Isoform 1 of Transcription intermediary factor 1-beta	IPI00438229.1	22
Splice Isoform 1 of Ubiquitin ligase protein BRE1B	IPI00162563.5	5
Splice Isoform 1 of Ubiquitin-conjugating enzyme E2 variant	IPI00019599.1	14
Splice Isoform 1 of Uridine phosphorylase 1	IPI00004406.1	25
Splice Isoform 1 of Uridine phosphorylase 1	IPI00004406.1	25
Splice Isoform 1 of Voltage-dependent anion-selective channel	IPI00024145.1	34
Splice Isoform 1 of Voltage-dependent anion-selective channel	IPI00031804.1	43
Splice Isoform 2 of DNA replication licensing factor MCM7	IPI00219740.3	12
Splice Isoform 2 of Double-stranded RNA-specific adenosine	IPI00025057.1	4
Splice Isoform 2 of Far upstream element-binding protein 1	IPI00163782.2	7
Splice Isoform 2 of HECT, UBA and WWE domain-containing protein	IPI00445401.2	1
Splice Isoform 2 of Microtubule-associated protein 4	IPI00220113.1	5
Splice Isoform 2 of NMDA receptor-regulated protein 1	IPI00032158.2	14
Splice Isoform 2 of Nuclear mitotic apparatus protein 1	IPI00006196.2	4
Splice Isoform 2 of Nucleophosmin	IPI00220740.1	24
Splice Isoform 2 of Structural maintenance of chromosomes 4	IPI00328298.6	6
Splice Isoform 2 of Triosephosphate isomerase	IPI00451401.2	27
Splice Isoform 3 of Ribosome-binding protein 1	IPI00215743.2	8
Splice Isoform 3 of UDP-N-acetylglucosamine--peptide N-acetyltransferase	IPI00005780.3	5
Splice Isoform 4 of Apoptosis inhibitor 5	IPI00006684.2	10
Splice Isoform 5 of Dynamin-1-like protein	IPI00037283.2	11
Splice Isoform 5 of Interleukin enhancer-binding factor 3	IPI00219330.2	5
Splice Isoform 5 of Interleukin enhancer-binding factor 3	IPI00219330.2	5
Splice Isoform A of Lamin-A/C	IPI00021405.3	11
Splice Isoform A of Phosphate carrier protein, mitochondria	IPI00022202.3	15
Splice Isoform AGX2 of UDP-N-acetylhexosamine pyrophosphorylase	IPI00000684.4	11
Splice Isoform B of Smoothelin	IPI00024007.2	5
Splice Isoform B1 of Heterogeneous nuclear ribonucleoprotein	IPI00396378.3	14
Splice Isoform Beta of Heat-shock protein 105 kDa	IPI00218993.1	8
Splice Isoform Beta-1C of Integrin beta-1 precursor	IPI00217561.1	6
Splice Isoform C1 of Heterogeneous nuclear ribonucleoprotein	IPI00216592.1	9
Splice Isoform D of Protein C9orf10	IPI00039626.3	4
Splice Isoform DPI of Desmoplakin	IPI00013933.1	2
Splice Isoform DUT-M of Deoxyuridine 5'-triphosphate nucleoside	IPI00013679.1	19
Splice Isoform Gamma-1 of Serine/threonine-protein phosphatase	IPI00005705.1	22
Splice Isoform Long of Delta 1-pyrroline-5-carboxylate synthetase	IPI00008982.1	20
Splice Isoform Long of Double-stranded RNA-binding protein	IPI00000001.1	8
Splice Isoform Long of Heterogeneous nuclear ribonucleoprotein	IPI00025054.1	19
Splice Isoform Long of Sodium/potassium-transporting ATPase	IPI00006482.1	8

Splice Isoform Long of Trifunctional purine biosynthetic pr	IPI00025273.1	14
Splice Isoform Long of Ubiquitin carboxyl-terminal hydrolas	IPI00024664.1	7
Splice Isoform SERCA1B of Sarcoplasmic/endoplasmic reticulu	IPI00024804.3	7
Splice Isoform SERCA2A of Sarcoplasmic/endoplasmic reticulu	IPI00177817.4	5
Splicing coactivator subunit SRm300	IPI00099730.3	2
Splicing factor 3B subunit 1	IPI00026089.3	6
Splicing factor 3B subunit 3	IPI00300371.3	14
Src substrate cortactin	IPI00029601.3	8
Staphylococcal nuclease domain-containing protein 1	IPI00140420.4	20
Stomatin-like protein 2	IPI00334190.4	17
Stress-70 protein, mitochondrial precursor	IPI00007765.5	42
Stress-induced-phosphoprotein 1	IPI00013894.1	25
T-complex protein 1 subunit alpha	IPI00290566.1	27
T-complex protein 1 subunit beta	IPI00297779.6	33
T-complex protein 1 subunit delta	IPI00302927.5	24
T-complex protein 1 subunit epsilon	IPI00010720.1	14
T-complex protein 1 subunit eta	IPI00018465.1	20
T-complex protein 1 subunit theta	IPI00302925.3	23
T-complex protein 1 subunit zeta	IPI00027626.2	13
TALDO1 protein	IPI00550488.2	14
TAR DNA-binding protein 43	IPI00025815.1	9
TOB3	IPI00045921.1	7
TUBA6 protein	IPI00166768.2	33
Talin-1	IPI00298994.4	9
Thioredoxin domain-containing protein 5 precursor	IPI00171438.2	7
Thioredoxin-dependent peroxide reductase, mitochondrial pre	IPI00024919.3	15
Threonyl-tRNA synthetase, cytoplasmic	IPI00329633.5	18
Threonyl-tRNA synthetase, cytoplasmic	IPI00329633.5	18
Transcription elongation factor B polypeptide 1	IPI00300341.5	30
Transferrin receptor protein 1	IPI00022462.1	16
Transgelin-2	IPI00550363.2	21
Transitional endoplasmic reticulum ATPase	IPI00022774.2	17
Transketolase	IPI00021716.1	18
Translocated promoter region	IPI00022970.3	10
Transmembrane protein 33	IPI00299084.1	17
Trifunctional enzyme alpha subunit, mitochondrial precursor	IPI00031522.2	19
Trifunctional enzyme beta subunit, mitochondrial precursor	IPI00022793.4	6
Tubulin alpha-1 chain	IPI00007750.1	41
Tubulin beta-1 chain	IPI00006510.1	6
Tubulin beta-2 chain	IPI00011654.2	23
Tubulin beta-2C chain	IPI00007752.1	66
Tumor protein, translationally-controlled 1	IPI00009943.2	14
Tyrosyl-tRNA synthetase, cytoplasmic	IPI00007074.4	6
U5 small nuclear ribonucleoprotein 200 kDa helicase	IPI00420014.2	5
Ubiquinol-cytochrome-c reductase complex core protein 2,	IPI00305383.1	10

mi		
Ubiquinol-cytochrome-c reductase complex core protein 2, mi	IPI00305383.1	10
Ubiquinol-cytochrome-c reductase complex core protein I, mi	IPI00013847.3	12
Ubiquitin carboxyl-terminal hydrolase 14	IPI00219913.9	8
Ubiquitin carboxyl-terminal hydrolase 7	IPI00003965.4	7
Ubiquitin-activating enzyme E1	IPI00026119.6	20
Ubiquitin-activating enzyme E1	IPI00552452.1	21
Ubiquitin-activating enzyme E1	IPI00645078.1	11
Ubiquitin-conjugating enzyme E2 L3	IPI00021347.1	30
WUGSC:H_RG054D04.1 protein	IPI00011457.1	14
Zyxin	IPI00020513.2	15
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	19
cytochrome b5 outer mitochondrial membrane precursor	IPI00303954.3	37
eukaryotic translation initiation factor 4 gamma, 1 isoform	IPI00384463.3	3
glutathione S-transferase M4 isoform 1	IPI00008770.1	20
heterogeneous nuclear ribonucleoprotein D-like	IPI00011274.1	13
heterogeneous nuclear ribonucleoprotein H1	IPI00013881.5	26
heterogeneous nuclear ribonucleoprotein L isoform a	IPI00027834.3	11
hypothetical protein LOC286077	IPI00394829.2	4
hypothetical protein LOC345651	IPI00003269.1	12
lactate dehydrogenase A	IPI00217966.6	30
methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1	IPI00291646.2	6
poly(rC)-binding protein 2 isoform b	IPI00012066.1	29
pyruvate kinase 3 isoform 2	IPI00220644.6	48
smooth muscle and non-muscle myosin alkali light chain isof	IPI00066374.1	21
thymopoietin isoform beta	IPI00030131.2	16
vinculin isoform VCL	IPI00291175.5	7
50 μM AI-HNE		
Protein	Accession	% Coverage
1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase b	IPI00010400.1	5
116 kDa U5 small nuclear ribonucleoprotein component	IPI00003519.1	6
130 kDa leucine-rich protein	IPI00329745.4	19
130 kDa protein	IPI00082831.3	4
14-3-3 protein beta/alpha	IPI00216318.4	34
14-3-3 protein epsilon	IPI00000816.1	53
14-3-3 protein gamma	IPI00220642.6	22
14-3-3 protein sigma	IPI00013890.1	28
14-3-3 protein theta	IPI00018146.1	36
14-3-3 protein zeta/delta	IPI00021263.3	42
150 kDa oxygen-regulated protein precursor	IPI00000877.1	9
19 kDa protein	IPI00027388.5	19
2'-phosphodiesterase	IPI00174390.2	12
2,4-dienoyl-CoA reductase, mitochondrial precursor	IPI00003482.1	19
26S protease regulatory subunit 4	IPI00011126.6	18
26S protease regulatory subunit 7	IPI00021435.2	24

26S proteasome non-ATPase regulatory subunit 12	IPI00185374.3	11
26S proteasome non-ATPase regulatory subunit 2	IPI00012268.2	27
26S proteasome non-ATPase regulatory subunit 3	IPI00011603.2	12
26S proteasome non-ATPase regulatory subunit 5	IPI00002134.3	11
29 kDa protein	IPI00015139.3	21
29 kDa protein	IPI00178083.2	21
29 kDa protein	IPI00453476.2	28
3-mercaptopyruvate sulfurtransferase	IPI00165360.4	14
31 kDa protein	IPI00374686.2	9
39 kDa protein	IPI00334627.2	43
40S ribosomal protein S11	IPI00025091.1	24
40S ribosomal protein S14	IPI00026271.4	31
40S ribosomal protein S15a	IPI00221091.7	33
40S ribosomal protein S16	IPI00221092.7	29
40S ribosomal protein S17	IPI00221093.6	40
40S ribosomal protein S2	IPI00013485.3	13
40S ribosomal protein S21	IPI00017448.1	34
40S ribosomal protein S25	IPI00012750.3	16
40S ribosomal protein S3	IPI00011253.2	52
40S ribosomal protein S4, X isoform	IPI00217030.9	25
40S ribosomal protein S5	IPI00008433.3	29
40S ribosomal protein S6	IPI00021840.1	21
40S ribosomal protein S8	IPI00216587.8	38
40S ribosomal protein S9	IPI00221088.4	19
42 kDa protein	IPI00164375.6	9
47 kDa heat shock protein precursor	IPI00019880.1	15
4F2 cell-surface antigen heavy chain	IPI00027493.1	12
50 kDa protein	IPI00246022.3	8
53 kDa protein	IPI00172579.3	9
6-phosphogluconate dehydrogenase, decarboxylating	IPI00219525.9	25
6-phosphogluconolactonase	IPI00029997.1	19
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	48
60 kDa protein	IPI00220480.6	14
60S acidic ribosomal protein P0	IPI00008530.1	50
60S ribosomal protein L12	IPI00024933.3	43
60S ribosomal protein L18	IPI00215719.5	20
60S ribosomal protein L18a	IPI00026202.1	21
60S ribosomal protein L19	IPI00025329.1	14
60S ribosomal protein L22	IPI00219153.3	39
60S ribosomal protein L23	IPI00010153.5	25
60S ribosomal protein L3	IPI00550021.3	21
60S ribosomal protein L30	IPI00219156.6	35
60S ribosomal protein L4	IPI00003918.4	29
60S ribosomal protein L5	IPI00000494.5	20
60S ribosomal protein L6	IPI00329389.5	23
60S ribosomal protein L8	IPI00012772.7	19
60S ribosomal protein L9	IPI00031691.1	31

78 kDa glucose-regulated protein precursor	IPI00003362.1	46
93 kDa protein	IPI00177366.2	18
ADP-ribosylation factor 1	IPI00215914.4	55
ADP-ribosylation factor 4	IPI00215918.2	22
ADP/ATP translocase 2	IPI00007188.4	28
ALB protein	IPI00022434.2	5
ATP synthase B chain, mitochondrial precursor	IPI00029133.4	22
ATP synthase O subunit, mitochondrial precursor	IPI00007611.1	24
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	37
ATP synthase beta chain, mitochondrial precursor	IPI00303476.1	17
ATP synthase, H+ transporting, mitochondrial F0 complex, su	IPI00219291.2	27
ATP synthase, H+ transporting, mitochondrial F0 complex, su	IPI00220487.3	28
ATP-binding cassette sub-family E member 1	IPI00303207.3	9
ATP-citrate synthase	IPI00021290.4	23
ATP-dependent DNA helicase II 80 kDa subunit	IPI00220834.7	15
ATP-dependent DNA helicase Q1	IPI00178431.11	6
ATP-dependent RNA helicase DDX3X	IPI00215637.4	16
Acetyl-CoA acetyltransferase, mitochondrial precursor	IPI00030363.1	16
Acidic leucine-rich nuclear phosphoprotein 32 family member	IPI00007423.1	16
Actin, aortic smooth muscle	IPI00008603.1	27
Actin, cytoplasmic 1	IPI00021439.1	39
Actin-like protein 2	IPI00005159.3	13
Activator of 90 kDa heat shock protein ATPase homolog 1	IPI00030706.1	18
Adenosylhomocysteinase	IPI00012007.5	12
Adenylyl cyclase-associated protein 1	IPI00008274.5	25
Alanyl-tRNA synthetase	IPI00027442.3	22
Aldehyde dehydrogenase, mitochondrial precursor	IPI00006663.1	28
Alpha-actinin-1	IPI00013508.4	44
Alpha-actinin-4	IPI00013808.1	20
Alpha-enolase	IPI00465248.4	39
Alpha-enolase, lung specific	IPI00013769.1	12
Amidophosphoribosyltransferase precursor	IPI00029534.1	8
Annexin A5	IPI00329801.11	49
Arginyl-tRNA synthetase	IPI00004860.2	11
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	31
Aspartyl-tRNA synthetase	IPI00216951.2	17
B cell lymphoma/leukemia 10	IPI00022477.1	23
BAG family molecular chaperone regulator 2	IPI00000643.1	24
BRCA2 and CDKN1A-interacting protein, isoform BCCIPbeta	IPI00002203.5	24
Bifunctional purine biosynthesis protein PURH	IPI00289499.3	18
Biliverdin reductase A precursor	IPI00294158.1	13
C-1-tetrahydrofolate synthase, cytoplasmic	IPI00218342.9	12
CAD protein	IPI00301263.2	5
CDNA FLJ13369 fis, clone PLACE1000610, weakly similar to MS	IPI00549861.2	10
CDNA FLJ34068 fis, clone FCBBF3001918, highly similar to SE	IPI00168184.6	28
CDNA FLJ45525 fis, clone BRTHA2026311, highly similar to	IPI00299571.4	12

Pr		
CDNA FLJ45706 fis, clone FEBRA2028457, highly similar to Nu	IPI00444262.1	12
CDNA FLJ46672 fis, clone TRACH3009008, highly similar to Th	IPI00472175.1	20
COP9 signalosome complex subunit 7a	IPI00301419.2	19
CTP synthase	IPI00290142.5	17
Calnexin precursor	IPI00020984.1	16
Calpain-2 catalytic subunit precursor	IPI00289758.5	5
Calponin-2	IPI00015262.9	14
Calponin-3	IPI00216682.5	19
Calreticulin precursor	IPI00020599.1	16
Carbonyl reductase [NADPH] 1	IPI00295386.6	21
Cargo selection protein TIP47	IPI00106668.3	30
Casein kinase II subunit alpha'	IPI00020602.1	9
Chloride intracellular channel protein 1	IPI00010896.2	52
Chromobox protein homolog 1	IPI00010320.1	9
Chromobox protein homolog 3	IPI00297579.3	21
Chromosome 9 open reading frame 32	IPI00515040.1	21
Chronic myelogenous leukemia tumor antigen 66	IPI00306398.5	8
Citrate synthase, mitochondrial precursor	IPI00025366.4	8
Coatomer subunit alpha	IPI00295857.6	3
Coatomer subunit beta	IPI00295851.3	4
Coatomer subunit gamma	IPI00001890.7	7
Cofilin, non-muscle isoform	IPI00012011.4	43
Coiled-coil-helix-coiled-coil-helix domain-containing prote	IPI00015833.1	28
Copine-3	IPI00024403.1	20
Coproporphyrinogen III oxidase, mitochondrial precursor	IPI00093057.6	15
Coronin-1C	IPI00008453.3	21
Crk-like protein	IPI00004839.1	21
Cysteine and histidine-rich domain (CHORD)-containing, zinc	IPI00015897.2	16
Cytokeratin type II	IPI00005859.1	6
Cytoplasmic dynein 1 light intermediate chain 1	IPI00007675.5	10
D-3-phosphoglycerate dehydrogenase	IPI00011200.4	13
DEAH (Asp-Glu-Ala-His) box polypeptide 9 isoform 1	IPI00215638.4	10
DEAH (Asp-Glu-Ala-His) box polypeptide 9 isoform 2	IPI00155723.3	24
DJ1014D13.1 protein	IPI00465233.1	14
DNA damage-binding protein 1	IPI00293464.4	7
DNA mismatch repair protein Msh2	IPI00017303.1	9
DNA replication licensing factor MCM2	IPI00184330.5	10
DNA replication licensing factor MCM4	IPI00018349.5	11
DNA replication licensing factor MCM6	IPI00031517.1	16
DNA-(apurinic or apyrimidinic site) lyase	IPI00215911.2	18
Dihydrolipoyl dehydrogenase, mitochondrial precursor	IPI00015911.1	19
DnaJ homolog subfamily A member 1	IPI00012535.1	18
Dolichyl-diphosphooligosaccharide--protein glycosyltransfer	IPI00025874.1	30
Drebrin	IPI00003406.2	20
Dynactin 2 variant (Fragment)	IPI00220503.8	16

Dynein heavy chain, cytosolic	IPI00456969.1	3
Dynein light chain 1, cytoplasmic	IPI00019329.1	49
EEF1A1 protein	IPI00025447.6	28
ELAV-like protein 1	IPI00301936.3	16
ENO1P protein	IPI00328587.4	10
ERO1-like protein alpha precursor	IPI00386755.2	10
Early endosome antigen 1	IPI00329536.1	8
Electron transfer flavoprotein alpha-subunit, mitochondrial	IPI00010810.1	14
Elongation factor 1-alpha 2	IPI00014424.1	18
Elongation factor 1-beta	IPI00178440.2	21
Elongation factor 1-delta	IPI00023048.3	31
Elongation factor 1-gamma	IPI00000875.5	27
Elongation factor 2	IPI00186290.5	51
Elongation factor Tu GTP binding domain containing 1	IPI00293026.5	5
Elongation factor Tu, mitochondrial precursor	IPI00027107.4	18
Emerin	IPI00032003.1	24
Endoplasmic precursor	IPI00027230.3	24
Enoyl-CoA hydratase, mitochondrial precursor	IPI00024993.4	36
Eukaryotic initiation factor 4A-I	IPI00025491.1	38
Eukaryotic initiation factor 5A isoform I variant A	IPI00376005.1	22
Eukaryotic peptide chain release factor subunit 1	IPI00429191.2	8
Eukaryotic translation initiation factor 2 subunit 1	IPI00219678.2	14
Eukaryotic translation initiation factor 3 subunit 10	IPI00029012.1	8
Eukaryotic translation initiation factor 3 subunit 12	IPI00033143.1	14
Eukaryotic translation initiation factor 3 subunit 5	IPI00011257.1	12
Eukaryotic translation initiation factor 3 subunit 7	IPI00006181.1	9
Eukaryotic translation initiation factor 6	IPI00010105.1	29
Exportin-1	IPI00298961.3	12
Ezrin	IPI00479359.5	7
F-actin capping protein alpha-1 subunit	IPI00005969.1	21
FK506-binding protein 4	IPI00219005.2	35
Family with sequence similarity 62 (C2 domain containing),	IPI00022143.3	20
Far upstream element-binding protein 2	IPI00298363.2	26
Fascin	IPI00163187.9	13
Fatty acid synthase	IPI00026781.2	23
Fatty acid-binding protein, epidermal	IPI00007797.2	63
Filamin A, alpha	IPI00302592.2	33
Fragile X mental retardation syndrome-related protein 1	IPI00016249.1	11
Fructose-bisphosphate aldolase A	IPI00465439.4	54
Fructose-bisphosphate aldolase C	IPI00418262.3	15
G1 to S phase transition protein 1 homolog	IPI00218829.7	6
G22P1 protein	IPI00465430.4	10
GARS protein	IPI00465260.3	22
GCN1-like protein 1	IPI00001159.8	7
GDP-L-fucose synthetase	IPI00014361.1	22
GMP synthase	IPI00029079.5	21
GPI-anchored protein p137	IPI00030910.1	7

GTP-binding nuclear protein RAN	IPI00012507.3	32
Galectin-1	IPI00219219.2	31
Gamma-enolase	IPI00216171.2	13
Glucosamine 6-phosphate N-acetyltransferase	IPI00061525.3	30
Glucose-6-phosphate isomerase	IPI00027497.4	22
Glutaredoxin-1	IPI00219025.2	31
Glutathione S-transferase P	IPI00219757.12	58
Glutathione transferase omega-1	IPI00019755.3	15
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	66
GrpE protein homolog 1, mitochondrial precursor	IPI00029557.3	12
Guanine nucleotide-binding protein G(k), alpha subunit	IPI00220578.2	12
Guanine nucleotide-binding protein beta subunit 2-like 1	IPI00641950.1	14
HADH2 protein	IPI00017726.1	80
HBxAg transactivated protein 2	IPI00083708.2	3
HDCMD34P	IPI00001672.1	26
HNRPA2B1 protein	IPI00386854.5	23
HNRPF protein	IPI00003881.5	18
Heat shock 70 kDa protein 1	IPI00304925.3	21
Heat shock 70 kDa protein 1L	IPI00301277.1	15
Heat shock 70 kDa protein 4	IPI00002966.1	37
Heat shock 70 kDa protein 4L	IPI00295485.1	20
Heat shock protein 75 kDa, mitochondrial precursor	IPI00030275.5	15
Heat shock protein HSP 90-alpha 2	IPI00382470.2	16
Heat-shock protein beta-1	IPI00025512.2	64
Hepatoma-derived growth factor	IPI00020956.1	23
Heterogeneous nuclear ribonucleoprotein C-like 1	IPI00027569.1	11
Heterogeneous nuclear ribonucleoprotein R	IPI00012074.3	9
High mobility group protein 1-like 10	IPI00018755.1	16
Histidyl-tRNA synthetase	IPI00021808.3	8
Histone H1.2	IPI00217465.4	16
Histone H2B.q	IPI00003935.5	12
Histone H4	IPI00453473.5	28
Histone acetyltransferase type B catalytic subunit	IPI00024719.1	9
Histone deacetylase 1	IPI00013774.1	12
Hsp90 co-chaperone Cdc37	IPI00013122.1	18
Hypothetical protein	IPI00007102.2	11
Hypothetical protein DCUN1D5	IPI00165361.3	14
Hypothetical protein DKFZp313B047	IPI00013452.8	13
Hypothetical protein DKFZp451D234	IPI00031583.2	5
Hypothetical protein DKFZp686I04222	IPI00413451.1	22
Hypothetical protein DKFZp761K0511	IPI00334775.5	39
Hypothetical protein DKFZp779B0247	IPI00398121.5	11
Hypothetical protein EIF3S9	IPI00334191.5	11
Hypothetical protein LRRC59	IPI00396321.1	12
Hypothetical protein MGC70857	IPI00166638.2	12
Hypoxanthine-guanine phosphoribosyltransferase	IPI00218493.6	41
IARS protein	IPI00013234.2	8

Importin alpha-2 subunit	IPI00002214.1	14
Importin beta-1 subunit	IPI00001639.2	14
Importin beta-2 subunit	IPI00024364.2	10
Importin beta-3	IPI00329200.5	16
Importin-9	IPI00185146.4	6
Inorganic pyrophosphatase	IPI00015018.1	26
Inosine-5'-monophosphate dehydrogenase 2	IPI00291510.3	20
Interferon-induced 17 kDa protein precursor	IPI00375631.5	24
Interleukin enhancer-binding factor 2	IPI00005198.2	16
Keratin, type I cytoskeletal 10	IPI00009865.1	41
Keratin, type I cytoskeletal 14	IPI00384444.4	16
Keratin, type I cytoskeletal 16	IPI00217963.2	10
Keratin, type I cytoskeletal 9	IPI00019359.3	47
Keratin, type II cytoskeletal 1	IPI00220327.2	47
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	45
Keratin, type II cytoskeletal 5	IPI00009867.2	12
Kinesin heavy chain	IPI00012837.1	15
L-lactate dehydrogenase B chain	IPI00219217.2	50
LAP3 protein	IPI00419237.2	7
LTA4H protein	IPI00219077.3	8
Lamin-B1	IPI00217975.3	8
Lamina-associated polypeptide 2 isoform alpha	IPI00216230.2	6
Leucyl-tRNA synthetase, cytoplasmic	IPI00103994.4	5
Lupus La protein	IPI00009032.1	10
Lysyl-tRNA synthetase	IPI00014238.2	6
Macrophage migration inhibitory factor	IPI00293276.9	18
Malate dehydrogenase, cytoplasmic	IPI00291005.7	21
Malate dehydrogenase, mitochondrial precursor	IPI00291006.1	51
Matrin-3	IPI00017297.1	17
Membrane associated progesterone receptor component 1	IPI00220739.2	18
Metastasis-associated protein MTA2	IPI00171798.1	6
Methionyl-tRNA synthetase	IPI00008240.2	7
Microsomal glutathione S-transferase 1	IPI00021805.1	27
Mitochondrial import receptor subunit TOM34	IPI00009946.4	14
Mitotic checkpoint protein BUB3	IPI00013468.1	24
Multifunctional protein ADE2	IPI00217223.1	41
Myosin light chain 1, slow-twitch muscle A isoform	IPI00027255.1	12
Myosin-9	IPI00019502.2	37
NADH-ubiquinone oxidoreductase 30 kDa subunit, mitochondria	IPI00025796.3	21
NCL protein	IPI00183526.5	24
NOL1/NOP2/Sun domain family 2 protein	IPI00306369.3	8
NUP210 protein	IPI00291755.4	4
Neuroblast differentiation-associated protein AHNAK (Fragme	IPI00021812.1	11
Neutral amino acid transporter B(0)	IPI00019472.4	10
Niban-like protein	IPI00456750.2	5
Non-POU domain-containing octamer-binding protein	IPI00304596.3	17
Nuclear migration protein nudC	IPI00550746.4	21

Nuclear pore complex protein Nup153	IPI00292059.1	3
Nuclear pore complex protein Nup214	IPI00183294.3	3
Nuclease sensitive element-binding protein 1	IPI00031812.1	22
Nucleoporin 50 kDa	IPI00026940.2	17
Nucleoside diphosphate kinase A	IPI00012048.1	60
Nucleoside diphosphate kinase B	IPI00026260.1	29
OCIA domain containing 2 isoform 1	IPI00555902.1	21
ORF protein	IPI00171903.1	27
Ornithine aminotransferase, mitochondrial precursor	IPI00022334.1	7
Oxysterol-binding protein	IPI00163644.2	6
P63 protein	IPI00141318.1	18
PREDICTED: KIAA0368 protein	IPI00157790.4	5
PREDICTED: KIAA1765 protein	IPI00028196.4	4
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	22
PREDICTED: similar to 40S ribosomal protein SA	IPI00397774.1	18
PREDICTED: similar to 60S ribosomal protein L27a	IPI00398135.2	22
PREDICTED: similar to ATP-dependent DNA helicase II, 70 kDa	IPI00412259.2	23
PREDICTED: similar to bA486O22.3	IPI00025419.4	12
PREDICTED: similar to ribosomal protein S3a; 40S ribosomal	IPI00026138.3	17
PRKAR2A protein	IPI00063234.1	16
Peptidyl-prolyl cis-trans isomerase A	IPI00419585.8	18
Peptidyl-prolyl cis-trans isomerase B precursor	IPI00646304.2	26
Peptidyl-tRNA hydrolase 2, mitochondrial precursor	IPI00032903.3	40
Peroxiredoxin-1	IPI00000874.1	51
Peroxiredoxin-2	IPI00027350.2	36
Peroxiredoxin-4	IPI00011937.1	50
Peroxiredoxin-6	IPI00220301.4	66
Peroxisomal multifunctional enzyme type 2	IPI00019912.1	11
Phosphatidylethanolamine-binding protein	IPI00219446.4	36
Phosphoglycerate kinase 1	IPI00169383.2	30
Phosphoglycerate mutase 2	IPI00218570.5	14
Phosphoribosylformylglycinamide synthase	IPI00004534.3	11
Plastin-1	IPI00032304.1	5
Plastin-2	IPI00010471.3	52
Poly [ADP-ribose] polymerase 1	IPI00449049.4	4
Poly(rC)-binding protein 1	IPI00016610.2	33
Polymerase delta-interacting protein 2	IPI00165506.4	10
Polyribonucleotide nucleotidyltransferase 1, mitochondrial	IPI00291165.6	9
Pre-mRNA-processing splicing factor 8	IPI00007928.4	6
Probable ATP-dependent RNA helicase DDX48	IPI00009328.2	9
Probable ATP-dependent RNA helicase DDX5	IPI00017617.1	12
Probable pseudouridine synthase KIAA1897	IPI00044761.4	10
Profilin-1	IPI00216691.4	65
Programmed cell death 6-interacting protein	IPI00246058.4	8
Prohibitin	IPI00017334.1	32
Prohibitin-2	IPI00027252.6	14
Proliferating cell nuclear antigen	IPI00021700.3	55

Proliferation-associated protein 2G4	IPI00299000.3	37
Proliferation-inducing gene 21	IPI00552496.1	55
Prostaglandin E synthase 3	IPI00015029.1	33
Proteasome activator complex subunit 1	IPI00030154.1	29
Proteasome activator complex subunit 2	IPI00384051.4	45
Proteasome subunit alpha type 2	IPI00219622.2	23
Proteasome subunit alpha type 5	IPI00291922.2	15
Proteasome subunit alpha type 6	IPI00029623.1	22
Proteasome subunit beta type (Fragment)	IPI00375704.1	34
Proteasome subunit beta type 1	IPI00025019.3	16
Proteasome subunit beta type 2	IPI00028006.1	12
Proteasome subunit beta type 3	IPI00028004.2	23
Protein C12orf5	IPI00006907.1	22
Protein DEK	IPI00020021.3	9
Protein FAM49B	IPI00303318.2	19
Protein disulfide-isomerase A3 precursor	IPI00025252.1	31
Protein disulfide-isomerase A4 precursor	IPI00009904.1	20
Protein disulfide-isomerase precursor	IPI00010796.1	18
Protein phosphatase 2C isoform gamma	IPI00006167.1	19
Protein transport protein Sec24C	IPI00024661.4	5
Protein-L-isoaspartate (D-aspartate) O-methyltransferase	IPI00024989.7	35
Purine nucleoside phosphorylase	IPI00017672.3	22
Puromycin-sensitive aminopeptidase	IPI00026216.4	4
Putative eukaryotic translation initiation factor 3 subunit	IPI00024425.2	7
Putative sulfhydryl oxidase precursor	IPI00376394.1	6
RAB1A, member RAS oncogene family	IPI00005719.1	36
Rab GDP dissociation inhibitor alpha	IPI00010154.3	13
Rab GDP dissociation inhibitor beta	IPI00031461.1	21
Ras GTPase-activating-like protein IQGAP1	IPI00009342.1	11
Ras-related protein Rab-14	IPI00291928.6	33
Ras-related protein Rab-2A	IPI00031169.1	26
Ras-related protein Rab-7	IPI00016342.1	37
Ras-related protein Rap-1b precursor	IPI00015148.3	18
RcTPI1 (Fragment)	IPI00383071.1	32
Ribonuclease inhibitor	IPI00550069.2	14
Ribonucleases P/MRP protein subunit POP1	IPI00293331.3	5
Ribonucleoside-diphosphate reductase large subunit	IPI00013871.1	18
RuvB-like 1	IPI00021187.3	15
RuvB-like 2	IPI00009104.6	8
S-adenosylmethionine synthetase isoform type-2	IPI00010157.1	14
S-methyl-5-thioadenosine phosphorylase	IPI00011876.1	29
S100 calcium-binding protein A2	IPI00019869.2	45
SF3B3 protein	IPI00179138.2	11
SMARCA4 isoform 2	IPI00029822.3	3
Sepiapterin reductase	IPI00017469.1	27
Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	18
Serine-threonine kinase receptor-associated protein	IPI00294536.1	17

Serine/threonine-protein phosphatase 2A 55 kDa regulatory s	IPI00332511.5	10
Serine/threonine-protein phosphatase 2A catalytic subunit a	IPI00008380.1	13
Signal recognition particle receptor beta subunit	IPI00295098.3	33
Similar to Calcium-dependent protease, small subunit	IPI00025084.2	12
Similar to Clathrin heavy chain	IPI00024067.2	16
Similar to Eukaryotic translation initiation factor 4GI	IPI00220365.3	6
Similar to Ras-related protein Rab-5C	IPI00016339.3	34
Similar to heterogeneous nuclear ribonucleoprotein A1 isofo	IPI00042578.5	21
Small glutamine-rich tetratricopeptide repeat-containing pr	IPI00013949.1	28
Small nuclear ribonucleoprotein E	IPI00029266.1	38
Small nuclear ribonucleoprotein Sm D2	IPI00017963.1	41
Sodium/potassium-transporting ATPase alpha-2 chain precurso	IPI00003021.1	6
Sorbitol dehydrogenase	IPI00216057.4	17
Splice Isoform 1 of 26S proteasome non-ATPase regulatory su	IPI00299608.3	7
Splice Isoform 1 of 40S ribosomal protein S24	IPI00029750.1	20
Splice Isoform 1 of ATP-binding cassette sub-family B membe	IPI00306748.1	6
Splice Isoform 1 of Calcyclin-binding protein	IPI00395627.3	55
Splice Isoform 1 of Caldesmon	IPI00014516.1	6
Splice Isoform 1 of Chromodomain helicase-DNA-binding prote	IPI00000846.1	2
Splice Isoform 1 of Clathrin heavy chain 2	IPI00022881.1	5
Splice Isoform 1 of Cleavage and polyadenylation specificit	IPI00012998.2	9
Splice Isoform 1 of Cullin-associated NEDD8-dissociated pro	IPI00100160.3	15
Splice Isoform 1 of Cytosolic acyl coenzyme A thioester hyd	IPI00010415.2	16
Splice Isoform 1 of DNA-dependent protein kinase catalytic	IPI00296337.2	10
Splice Isoform 1 of Dual specificity mitogen-activated prot	IPI00218857.1	10
Splice Isoform 1 of Elongation factor Ts, mitochondrial pre	IPI00021016.3	14
Splice Isoform 1 of F-actin capping protein beta subunit	IPI00026185.5	21
Splice Isoform 1 of Far upstream element-binding protein 3	IPI00377261.1	14
Splice Isoform 1 of Filamin-B	IPI00289334.1	11
Splice Isoform 1 of Gamma-interferon-inducible protein Ifi-	IPI00003443.2	5
Splice Isoform 1 of General transcription factor II-I	IPI00054042.1	8
Splice Isoform 1 of Glucosamine--fructose-6-phosphate amino	IPI00217952.6	9
Splice Isoform 1 of Glycerol-3-phosphate dehydrogenase, mit	IPI00017895.2	10
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	54
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00018140.2	17
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00216049.1	40
Splice Isoform 1 of Hexokinase-1	IPI00018246.4	4
Splice Isoform 1 of Host cell factor	IPI00019848.1	2
Splice Isoform 1 of Importin-4	IPI00156374.4	8
Splice Isoform 1 of Importin-alpha re-exporter	IPI00022744.5	11
Splice Isoform 1 of Inorganic pyrophosphatase 2, mitochondr	IPI00301109.3	15
Splice Isoform 1 of Isocitrate dehydrogenase [NAD] subunit	IPI00030702.1	16

Splice Isoform 1 of Kinectin	IPI00328753.1	7
Splice Isoform 1 of La-related protein 1	IPI00185919.3	4
Splice Isoform 1 of Microtubule-associated protein 4	IPI00396171.3	4
Splice Isoform 1 of Minor histocompatibility antigen H13	IPI00152441.3	16
Splice Isoform 1 of Mitochondrial inner membrane protein	IPI00009960.6	27
Splice Isoform 1 of Nuclear autoantigenic sperm protein	IPI00179953.2	24
Splice Isoform 1 of Nucleolar RNA helicase 2	IPI00015953.3	9
Splice Isoform 1 of Plectin 1	IPI00014898.1	1
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	29
Splice Isoform 1 of Polypyrimidine tract-binding protein 1	IPI00179964.5	31
Splice Isoform 1 of Probable ATP-dependent RNA helicase DDX	IPI00023785.5	10
Splice Isoform 1 of Probable mitochondrial import receptor	IPI00014053.3	19
Splice Isoform 1 of Programmed cell death protein 8, mitoch	IPI00000690.1	6
Splice Isoform 1 of Proteasome activator complex subunit 3	IPI00030243.1	32
Splice Isoform 1 of Proteasome subunit alpha type 7	IPI00024175.3	25
Splice Isoform 1 of Protein KIAA1967	IPI00182757.9	16
Splice Isoform 1 of Protein arginine N-methyltransferase 1	IPI00018522.3	30
Splice Isoform 1 of Pyridoxal kinase	IPI00013004.1	17
Splice Isoform 1 of Ran-binding protein 3	IPI00026337.1	4
Splice Isoform 1 of Reticulon-4	IPI00021766.3	8
Splice Isoform 1 of Spectrin alpha chain, brain	IPI00413728.2	5
Splice Isoform 1 of Structural maintenance of chromosome 2-	IPI00007927.3	6
Splice Isoform 1 of Surfeit locus protein 4	IPI00005737.1	18
Splice Isoform 1 of Transcription intermediary factor 1-bet	IPI00438229.1	20
Splice Isoform 1 of Ubiquitin ligase protein BRE1B	IPI00162563.5	4
Splice Isoform 1 of Uridine phosphorylase 1	IPI00004406.1	26
Splice Isoform 1 of Voltage-dependent anion-selective chann	IPI00024145.1	37
Splice Isoform 1 of Zinc finger protein 207	IPI00013457.1	7
Splice Isoform 2 of Far upstream element-binding protein 1	IPI00163782.2	7
Splice Isoform 2 of Far upstream element-binding protein 3	IPI00063245.1	26
Splice Isoform 2 of HECT, UBA and WWE domain-containing pro	IPI00445401.2	2
Splice Isoform 2 of Methylcrotonoyl-CoA carboxylase beta ch	IPI00294140.4	7
Splice Isoform 2 of Microtubule-associated protein 4	IPI00220113.1	7
Splice Isoform 2 of NMDA receptor-regulated protein 1	IPI00032158.2	9
Splice Isoform 2 of Nucleophosmin	IPI00220740.1	42
Splice Isoform 2 of SWI/SNF-related matrix-associated actin	IPI00150057.6	8
Splice Isoform 2 of Signal recognition particle 68 kDa prot	IPI00102936.3	7
Splice Isoform 2 of Structural maintenance of chromosomes 4	IPI00328298.6	5
Splice Isoform 2 of Transportin 3	IPI00395694.1	8
Splice Isoform 2 of Triosephosphate isomerase	IPI00451401.2	27
Splice Isoform 3 of Drebrin-like protein	IPI00101968.3	17
Splice Isoform 3 of Ribosome-binding protein 1	IPI00215743.2	11
Splice Isoform 4 of Apoptosis inhibitor 5	IPI00006684.2	8
Splice Isoform 5 of Dynamin-1-like protein	IPI00037283.2	12

Splice Isoform 5 of Interleukin enhancer-binding factor 3	IPI00219330.2	6
Splice Isoform A of Lamin-A/C	IPI00021405.3	12
Splice Isoform A of Phosphate carrier protein, mitochondria	IPI00022202.3	20
Splice Isoform AGX2 of UDP-N-acetylhexosamine pyrophosphory	IPI00000684.4	17
Splice Isoform B of Arsenite-resistance protein 2	IPI00220038.1	5
Splice Isoform Beta of Heat-shock protein 105 kDa	IPI00218993.1	12
Splice Isoform Beta-1C of Integrin beta-1 precursor	IPI00217561.1	13
Splice Isoform DFF45 of DNA fragmentation factor alpha subu	IPI00010882.3	14
Splice Isoform DUT-M of Deoxyuridine 5'-triphosphate nucleo	IPI00013679.1	34
Splice Isoform GTBP-alt of DNA mismatch repair protein MSH6	IPI00106847.3	4
Splice Isoform Gamma-1 of Serine/threonine-protein phosphat	IPI00005705.1	25
Splice Isoform Long of Delta 1-pyrroline-5-carboxylate synt	IPI00008982.1	22
Splice Isoform Long of Double-stranded RNA-binding protein	IPI00000001.1	5
Splice Isoform Long of Heterogenous nuclear ribonucleoprote	IPI00025054.1	19
Splice Isoform Long of Long-chain-fatty-acid--CoA ligase 4	IPI00029737.1	6
Splice Isoform Long of Sodium/potassium-transporting ATPase	IPI00006482.1	9
Splice Isoform Long of Spectrin beta chain, brain 1	IPI00005614.5	3
Splice Isoform Long of Splicing factor, proline- and glutam	IPI00010740.1	8
Splice Isoform Long of Trifunctional purine biosynthetic pr	IPI00025273.1	14
Splice Isoform Long of Trifunctional purine biosynthetic pr	IPI00025273.1	14
Splice Isoform Long of Ubiquitin carboxyl-terminal hydrolas	IPI00024664.1	11
Splice Isoform SERCA1B of Sarcoplasmic/endoplasmic reticulu	IPI00024804.3	5
Splice Isoform SERCA2A of Sarcoplasmic/endoplasmic reticulu	IPI00177817.4	5
Spliceosome RNA helicase BAT1	IPI00328343.7	14
Splicing coactivator subunit SRm300	IPI00099730.3	2
Splicing factor 3B subunit 1	IPI00026089.3	6
Splicing factor 3B subunit 3	IPI00300371.3	16
Src substrate cortactin	IPI00029601.3	20
Staphylococcal nuclease domain-containing protein 1	IPI00140420.4	32
Stomatin-like protein 2	IPI00334190.4	30
Stress-70 protein, mitochondrial precursor	IPI00007765.5	42
Stress-induced-phosphoprotein 1	IPI00013894.1	20
Succinyl-CoA:3-ketoacid-coenzyme A transferase 1, mitochond	IPI00026516.1	12
T-complex protein 1 subunit alpha	IPI00290566.1	31
T-complex protein 1 subunit beta	IPI00297779.6	57
T-complex protein 1 subunit delta	IPI00302927.5	14
T-complex protein 1 subunit epsilon	IPI00010720.1	21
T-complex protein 1 subunit eta	IPI00018465.1	27
T-complex protein 1 subunit theta	IPI00302925.3	39
T-complex protein 1 subunit zeta	IPI00027626.2	26
TALDO1 protein	IPI00550488.2	14

TUBA6 protein	IPI00166768.2	26
Talin-1	IPI00298994.4	6
Thioredoxin	IPI00216298.5	58
Thioredoxin-dependent peroxide reductase, mitochondrial pre	IPI00024919.3	25
Thioredoxin-like protein 1	IPI00305692.4	16
Thioredoxin-like protein 2	IPI00008552.6	11
Threonyl-tRNA synthetase, cytoplasmic	IPI00329633.5	12
Transcription elongation factor B polypeptide 2	IPI00026670.3	31
Transferrin receptor protein 1	IPI00022462.1	23
Transgelin-2	IPI00550363.2	38
Transitional endoplasmic reticulum ATPase	IPI00022774.2	29
Transketolase	IPI00021716.1	15
Translin	IPI00018768.1	17
Translocated promoter region	IPI00022970.3	5
Translocon-associated protein delta subunit precursor	IPI00019385.1	25
Treacher Collins-Franceschetti syndrome 1 isoform a	IPI00165041.3	2
Trifunctional enzyme alpha subunit, mitochondrial precursor	IPI00031522.2	25
Tropomyosin 4	IPI00010779.3	27
Tubulin alpha-1 chain	IPI00007750.1	48
Tubulin alpha-1 chain	IPI00007750.1	48
Tubulin beta-1 chain	IPI00006510.1	4
Tubulin beta-2 chain	IPI00011654.2	23
Tubulin beta-2C chain	IPI00007752.1	65
Tubulin beta-3 chain	IPI00013683.2	11
Tubulin beta-4q chain	IPI00018511.1	7
Tubulin--tyrosine ligase-like protein 12	IPI00029048.2	5
Tumor protein, translationally-controlled 1	IPI00009943.2	14
Tyrosine-protein phosphatase non-receptor type 1	IPI00297261.3	8
Tyrosyl-tRNA synthetase, cytoplasmic	IPI00007074.4	7
U5 small nuclear ribonucleoprotein 200 kDa helicase	IPI00420014.2	7
Ubiquinol-cytochrome-c reductase complex core protein I, mi	IPI00013847.3	9
Ubiquitin and ribosomal protein S27a	IPI00179330.5	24
Ubiquitin carboxyl-terminal hydrolase 7	IPI00003965.4	3
Ubiquitin carboxyl-terminal hydrolase isozyme L3	IPI00011250.3	24
Ubiquitin-activating enzyme E1	IPI00026119.6	23
Ubiquitin-conjugating enzyme E2 L3	IPI00021347.1	30
VAMP-associated protein B/C	IPI00006211.3	23
Vacuolar ATP synthase catalytic subunit A, ubiquitous isofo	IPI00007682.2	16
Valyl-tRNA synthetase	IPI00000873.3	5
Vasodilator-stimulated phosphoprotein	IPI00301058.4	17
Vigilin	IPI00022228.1	6
WUGSC:H_RG054D04.1 protein	IPI00011457.1	14
Zyxin	IPI00020513.2	23
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	21
cytochrome b5 outer mitochondrial membrane precursor	IPI00303954.3	49
dextrin isoform b	IPI00031045.3	30
eIF-5A2 protein	IPI00006935.1	20

eukaryotic translation initiation factor 4 gamma, 1 isoform	IPI00384463.3	4
fuse-binding protein-interacting repressor isoform a	IPI00069750.1	12
heterogeneous nuclear ribonucleoprotein D-like	IPI00011274.1	8
heterogeneous nuclear ribonucleoprotein H1	IPI00013881.5	19
heterogeneous nuclear ribonucleoprotein L isoform a	IPI00027834.3	14
homolog of yeast mRNA transport regulator 3	IPI00073602.1	28
hypothetical protein FLJ12443	IPI00171626.3	7
hypothetical protein LOC345651	IPI00003269.1	18
hypothetical protein LOC55720	IPI00292894.3	5
isopentenyl-diphosphate delta isomerase	IPI00220014.2	16
lactate dehydrogenase A	IPI00217966.6	42
poly(rC)-binding protein 2 isoform b	IPI00012066.1	36
pyruvate kinase 3 isoform 2	IPI00220644.6	50
smooth muscle and non-muscle myosin alkali light chain isof	IPI00066374.1	41
sorting nexin 1 isoform c	IPI00183274.2	7
suppressor of G2 allele of SKP1	IPI00009149.1	11
thymopoietin isoform beta	IPI00030131.2	27
tropomyosin 1 alpha chain isoform 2	IPI00000230.5	9
twinfilin isoform 1	IPI00183508.2	10
vinculin isoform VCL	IPI00291175.5	8

Table S3. Proteins identified with Az-HNE treatment of RKO cells (2 mg of cellular lysate protein). Displayed from left to right are the protein names, the Accession number, and percent coverage for all of the proteins in the DMSO control, 5, 10, and 50 μ M Az-HNE treated cells.

DMSO Control		
Protein	Accession	% Coverage
42 kDa protein	IPI00164375.6	9
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	5
78 kDa glucose-regulated protein precursor	IPI00003362.1	10
ALB protein	IPI00022434.2	5
Actin, aortic smooth muscle	IPI00008603.1	6
Cytokeratin type II	IPI00005859.1	4
Endoplasmic precursor	IPI00027230.3	5
Heat shock protein HSP 90-alpha 2	IPI00382470.2	3
Hypothetical protein DKFZp761K0511	IPI00334775.5	7
Junction plakoglobin	IPI00554711.1	5
Keratin, type I cytoskeletal 10	IPI00009865.1	22
Keratin, type I cytoskeletal 14	IPI00384444.4	14
Keratin, type I cytoskeletal 16	IPI00217963.2	5
Keratin, type I cytoskeletal 9	IPI00019359.3	35
Keratin, type II cytoskeletal 1	IPI00220327.2	36
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	27
Keratin, type II cytoskeletal 5	IPI00009867.2	13
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	8
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	7
Splice Isoform 1 of Keratin, type I cytoskeletal 13	IPI00009866.6	5
Stress-70 protein, mitochondrial precursor	IPI00007765.5	3
5 μ M Az-HNE		
10 kDa heat shock protein, mitochondrial	IPI00220362.4	24
12 kDa protein	IPI00176698.1	21
14-3-3 protein beta/alpha	IPI00216318.4	12
14-3-3 protein epsilon	IPI00000816.1	18
14-3-3 protein gamma	IPI00220642.6	10
14-3-3 protein theta	IPI00018146.1	23
14-3-3 protein zeta/delta	IPI00021263.3	18
26S protease regulatory subunit 7	IPI00021435.2	6
26S proteasome non-ATPase regulatory subunit 2	IPI00012268.2	2
29 kDa protein	IPI00015139.3	4
3-ketoacyl-CoA thiolase, mitochondrial	IPI00001539.8	8
39 kDa protein	IPI00334627.2	9
40S ribosomal protein S16	IPI00221092.7	15

40S ribosomal protein S3	IPI00011253.2	20
40S ribosomal protein S4, X isoform	IPI00217030.9	8
40S ribosomal protein S8	IPI00216587.8	14
42 kDa protein	IPI00164375.6	11
50 kDa protein	IPI00246022.3	8
53 kDa protein	IPI00172579.3	4
6-phosphogluconate dehydrogenase, decarboxylating	IPI00219525.9	12
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	23
60S acidic ribosomal protein P0	IPI00008530.1	39
60S ribosomal protein L18	IPI00215719.5	26
60S ribosomal protein L19	IPI00025329.1	13
78 kDa glucose-regulated protein precursor	IPI00003362.1	27
93 kDa protein	IPI00177366.2	3
ADP/ATP translocase 2	IPI00007188.4	12
ATP synthase O subunit, mitochondrial precursor	IPI00007611.1	11
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	17
ATP-dependent RNA helicase DDX1	IPI00293655.3	3
Actin, aortic smooth muscle	IPI00008603.1	13
Actin, cytoplasmic 1	IPI00021439.1	21
Adenosylhomocysteinase	IPI00012007.5	8
Alpha-actinin-1	IPI00013508.4	7
Alpha-actinin-4	IPI00013808.1	7
Alpha-enolase	IPI00465248.4	15
Alpha-enolase, lung specific	IPI00013769.1	9
Annexin A5	IPI00329801.11	10
Arginyl-tRNA synthetase	IPI00004860.2	7
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	9
C-1-tetrahydrofolate synthase, cytoplasmic	IPI00218342.9	4
CDNA FLJ45525 fis, clone BRTHA2026311, highly similar to Pr	IPI00299571.4	12
Calreticulin precursor	IPI00020599.1	6
Carbonyl reductase [NADPH] 1	IPI00295386.6	8
Chloride intracellular channel protein 1	IPI00010896.2	13
Citrate synthase, mitochondrial precursor	IPI00025366.4	9
Cofilin, non-muscle isoform	IPI00012011.4	20
Cytokeratin type II	IPI00005859.1	8
D-3-phosphoglycerate dehydrogenase	IPI00011200.4	7
DNA replication licensing factor MCM2	IPI00184330.5	4
DNA replication licensing factor MCM4	IPI00018349.5	2
Developmentally-regulated GTP-binding protein 1	IPI00031836.3	6
Dihydrolipoyl dehydrogenase, mitochondrial precursor	IPI00015911.1	5
EEF1A1 protein	IPI00025447.6	8
Elongation factor 1-alpha 2	IPI00014424.1	12
Elongation factor 1-delta	IPI00023048.3	13
Elongation factor 1-gamma	IPI00000875.5	5
Elongation factor 2	IPI00186290.5	12
Elongation factor Tu, mitochondrial precursor	IPI00027107.4	14
Endoplasmin precursor	IPI00027230.3	8

Eukaryotic initiation factor 4A-I	IPI00025491.1	9
Fatty acid synthase	IPI00026781.2	2
Filamin A, alpha	IPI00302592.2	5
Fructose-bisphosphate aldolase A	IPI00465439.4	29
Fumarate hydratase, mitochondrial precursor	IPI00296053.3	9
G22P1 protein	IPI00465430.4	6
GPI-anchored protein p137	IPI00030910.1	5
GTP-binding nuclear protein RAN	IPI00012507.3	13
Galectin-1	IPI00219219.2	18
Glucose-6-phosphate isomerase	IPI00027497.4	12
Glutathione S-transferase P	IPI00219757.12	18
Glutathione synthetase	IPI00010706.1	5
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	23
Guanine nucleotide-binding protein G(I)/G(S)/G(T) beta subu	IPI00003348.2	6
HNRPF protein	IPI00003881.5	12
Heat shock 70 kDa protein 1	IPI00304925.3	7
Heat shock 70 kDa protein 1L	IPI00301277.1	4
Heat shock 70 kDa protein 4	IPI00002966.1	9
Heat shock 70 kDa protein 7 (Fragment)	IPI00011134.1	11
Heat shock protein 75 kDa, mitochondrial precursor	IPI00030275.5	6
Heat shock protein HSP 90-alpha 2	IPI00382470.2	4
Hsc70-interacting protein	IPI00032826.1	7
Hypothetical protein DKFZp761K0511	IPI00334775.5	12
Keratin, type I cytoskeletal 10	IPI00009865.1	27
Keratin, type I cytoskeletal 14	IPI00384444.4	18
Keratin, type I cytoskeletal 16	IPI00217963.2	14
Keratin, type I cytoskeletal 9	IPI00019359.3	36
Keratin, type II cytoskeletal 1	IPI00220327.2	44
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	26
Keratin, type II cytoskeletal 5	IPI00009867.2	13
Kinesin heavy chain	IPI00012837.1	4
L-lactate dehydrogenase B chain	IPI00219217.2	18
Lon protease homolog, mitochondrial precursor	IPI00005158.1	2
Macrophage migration inhibitory factor	IPI00293276.9	10
Malate dehydrogenase, cytoplasmic	IPI00291005.7	13
Multifunctional protein ADE2	IPI00217223.1	4
Nucleoside diphosphate kinase A	IPI00012048.1	13
ORF protein	IPI00171903.1	7
PREDICTED: KIAA1765 protein	IPI00028196.4	2
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	16
PREDICTED: similar to 40S ribosomal protein SA	IPI00397774.1	10
PREDICTED: similar to Ran-specific GTPase-activating protei	IPI00399212.1	11
Peroxiredoxin-1	IPI00000874.1	11
Phosphoglycerate kinase 1	IPI00169383.2	23
Phosphoribosylformylglycinamide synthase	IPI00004534.3	2
Plastin-2	IPI00010471.3	6
Probable ATP-dependent RNA helicase DDX5	IPI00017617.1	6

Profilin-1	IPI00216691.4	47
Prohibitin	IPI00017334.1	8
Proliferating cell nuclear antigen	IPI00021700.3	17
Proliferation-inducing gene 21	IPI00552496.1	23
Proteasome subunit alpha type 6	IPI00029623.1	9
Proteasome subunit beta type (Fragment)	IPI00375704.1	9
Protein disulfide-isomerase A3 precursor	IPI00025252.1	23
Protein disulfide-isomerase A4 precursor	IPI00009904.1	6
Protein disulfide-isomerase precursor	IPI00010796.1	6
Purine nucleoside phosphorylase	IPI00017672.3	13
Rab GDP dissociation inhibitor beta	IPI00031461.1	5
RcTPI1 (Fragment)	IPI00383071.1	36
S-adenosylmethionine synthetase isoform type-2	IPI00010157.1	10
Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	15
Serine-threonine kinase receptor-associated protein	IPI00294536.1	14
Signal recognition particle receptor beta subunit	IPI00295098.3	12
Similar to Clathrin heavy chain	IPI00024067.2	4
Splice Isoform 1 of 60S ribosomal protein L11	IPI00219150.5	13
Splice Isoform 1 of Cullin-associated NEDD8-dissociated pro	IPI00100160.3	2
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	35
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00216049.1	18
Splice Isoform 1 of Importin-alpha re-exporter	IPI00022744.5	3
Splice Isoform 1 of Isocitrate dehydrogenase [NAD] subunit	IPI00030702.1	6
Splice Isoform 1 of Keratin, type I cytoskeletal 13	IPI00009866.6	5
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	9
Splice Isoform 1 of Proteasome subunit alpha type 7	IPI00024175.3	12
Splice Isoform 1 of Transcription intermediary factor 1-bet	IPI00438229.1	2
Splice Isoform A of Phosphate carrier protein, mitochondria	IPI00022202.3	8
Splice Isoform AGX2 of UDP-N-acetylhexosamine pyrophosphory	IPI00000684.4	7
Splice Isoform Beta of Heat-shock protein 105 kDa	IPI00218993.1	3
Splice Isoform Long of Delta 1-pyrroline-5-carboxylate synt	IPI00008982.1	4
Spliceosome RNA helicase BAT1	IPI00328343.7	6
Staphylococcal nuclease domain-containing protein 1	IPI00140420.4	5
Stomatin-like protein 2	IPI00334190.4	8
Stress-70 protein, mitochondrial precursor	IPI00007765.5	23
Stress-induced-phosphoprotein 1	IPI00013894.1	4
T-complex protein 1 subunit alpha	IPI00290566.1	7
T-complex protein 1 subunit beta	IPI00297779.6	13
T-complex protein 1 subunit delta	IPI00302927.5	9
T-complex protein 1 subunit eta	IPI00018465.1	9
T-complex protein 1 subunit theta	IPI00302925.3	17
T-complex protein 1 subunit zeta	IPI00027626.2	5
TUBA6 protein	IPI00166768.2	22
Thioredoxin domain-containing protein 5 precursor	IPI00171438.2	4
Threonyl-tRNA synthetase, cytoplasmic	IPI00329633.5	3
Transcription elongation factor B polypeptide 1	IPI00300341.5	18
Transferrin receptor protein 1	IPI00022462.1	10

Transgelin-2	IPI00550363.2	10
Transitional endoplasmic reticulum ATPase	IPI00022774.2	5
Transketolase	IPI00021716.1	6
Trifunctional enzyme alpha subunit, mitochondrial precursor	IPI00031522.2	3
Tubulin alpha-1 chain	IPI00007750.1	22
Tubulin beta-1 chain	IPI00006510.1	2
Tubulin beta-2 chain	IPI00011654.2	13
Tubulin beta-2C chain	IPI00007752.1	28
Ubiquitin carboxyl-terminal hydrolase 14	IPI00219913.9	5
Ubiquitin-activating enzyme E1	IPI00645078.1	3
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	12
hypothetical protein LOC345651	IPI00003269.1	6
lactate dehydrogenase A	IPI00217966.6	14
poly(rC)-binding protein 2 isoform b	IPI00012066.1	9
pyruvate kinase 3 isoform 2	IPI00220644.6	37
		0
10 μM Az-HNE		
Protein	Accession	% Coverage
10 kDa heat shock protein, mitochondrial	IPI00220362.4	24
14-3-3 protein zeta/delta	IPI00021263.3	11
39 kDa protein	IPI00334627.2	6
40S ribosomal protein S3	IPI00011253.2	26
40S ribosomal protein S4, X isoform	IPI00217030.9	8
42 kDa protein	IPI00164375.6	6
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	7
60S acidic ribosomal protein P0	IPI00008530.1	7
60S ribosomal protein L18	IPI00215719.5	26
78 kDa glucose-regulated protein precursor	IPI00003362.1	15
ATP synthase O subunit, mitochondrial precursor	IPI00007611.1	16
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	5
Actin, aortic smooth muscle	IPI00008603.1	9
Actin, cytoplasmic 1	IPI00021439.1	13
Adenylate kinase isoenzyme 1	IPI00018342.5	12
Alpha-actinin-1	IPI00013508.4	3
Alpha-actinin-4	IPI00013808.1	5
Alpha-enolase, lung specific	IPI00013769.1	7
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	9
Chloride intracellular channel protein 1	IPI00010896.2	10
Cytochrome c	IPI00465315.5	25
Cytokeratin type II	IPI00005859.1	4
D-3-phosphoglycerate dehydrogenase	IPI00011200.4	9
Elongation factor 1-alpha 2	IPI00014424.1	5
Elongation factor 2	IPI00186290.5	4
Endoplasmin precursor	IPI00027230.3	6
Endoplasmin precursor	IPI00027230.3	6
Far upstream element-binding protein 2	IPI00298363.2	5

Filamin A, alpha	IPI00302592.2	3
Fructose-bisphosphate aldolase A	IPI00465439.4	11
GPI-anchored protein p137	IPI00030910.1	4
GTP-binding nuclear protein RAN	IPI00012507.3	13
Glucose-6-phosphate isomerase	IPI00027497.4	5
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	14
Heat shock 70 kDa protein 1	IPI00304925.3	6
Heat shock 70 kDa protein 4	IPI00002966.1	5
Heat shock protein 75 kDa, mitochondrial precursor	IPI00030275.5	4
Heat shock protein HSP 90-alpha 2	IPI00382470.2	3
Hypothetical protein DKFZp761K0511	IPI00334775.5	5
Keratin 24	IPI00004550.4	3
Keratin, type I cytoskeletal 10	IPI00009865.1	22
Keratin, type I cytoskeletal 14	IPI00384444.4	10
Keratin, type I cytoskeletal 16	IPI00217963.2	7
Keratin, type I cytoskeletal 9	IPI00019359.3	14
Keratin, type II cytoskeletal 1	IPI00220327.2	31
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	27
Keratin, type II cytoskeletal 5	IPI00009867.2	12
L-lactate dehydrogenase B chain	IPI00219217.2	13
Macrophage migration inhibitory factor	IPI00293276.9	18
NCL protein	IPI00183526.5	5
PREDICTED: KIAA1765 protein	IPI00028196.4	2
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	6
PREDICTED: similar to 40S ribosomal protein SA	IPI00397774.1	10
PREDICTED: similar to ribosomal protein L13; 60S ribosomal	IPI00397611.1	10
Peroxiredoxin-1	IPI00000874.1	16
Probable ATP-dependent RNA helicase DDX5	IPI00017617.1	3
Profilin-1	IPI00216691.4	50
Proliferation-inducing gene 21	IPI00552496.1	8
Protein disulfide-isomerase A3 precursor	IPI00025252.1	8
RcTPI1 (Fragment)	IPI00383071.1	32
Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	6
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	21
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	5
Splice Isoform 1 of Transcription intermediary factor 1-beta	IPI00438229.1	2
Stress-70 protein, mitochondrial precursor	IPI00007765.5	16
T-complex protein 1 subunit alpha	IPI00290566.1	4
T-complex protein 1 subunit theta	IPI00302925.3	5
TUBA6 protein	IPI00166768.2	17
Tubulin beta-2 chain	IPI00011654.2	6
Tubulin beta-2C chain	IPI00007752.1	16
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	4
lactate dehydrogenase A	IPI00217966.6	6
poly(rC)-binding protein 2 isoform b	IPI00012066.1	12
pyruvate kinase 3 isoform 2	IPI00220644.6	10

50 μ M Az-HNE		
116 kDa U5 small nuclear ribonucleoprotein component	IPI00003519.1	3
12 kDa protein	IPI00373857.1	10
130 kDa leucine-rich protein	IPI00329745.4	13
14-3-3 protein epsilon	IPI00000816.1	14
14-3-3 protein gamma	IPI00220642.6	10
14-3-3 protein theta	IPI00018146.1	13
14-3-3 protein zeta/delta	IPI00021263.3	18
2,4-dienoyl-CoA reductase, mitochondrial precursor	IPI00003482.1	11
26S protease regulatory subunit 4	IPI00011126.6	23
26S protease regulatory subunit 6A	IPI00018398.4	20
26S protease regulatory subunit 7	IPI00021435.2	6
26S protease regulatory subunit 8	IPI00023919.4	7
26S protease regulatory subunit S10B	IPI00021926.2	12
26S proteasome non-ATPase regulatory subunit 2	IPI00012268.2	4
26S proteasome non-ATPase regulatory subunit 5	IPI00002134.3	14
29 kDa protein	IPI00178083.2	11
3-ketoacyl-CoA thiolase, mitochondrial	IPI00001539.8	16
31 kDa protein	IPI00374686.2	9
34 kDa protein	IPI00412577.1	5
39 kDa protein	IPI00334627.2	21
40S ribosomal protein S3	IPI00011253.2	32
40S ribosomal protein S4, X isoform	IPI00217030.9	29
40S ribosomal protein S6	IPI00021840.1	16
42 kDa protein	IPI00164375.6	9
47 kDa heat shock protein precursor	IPI00019880.1	12
4F2 cell-surface antigen heavy chain	IPI00027493.1	11
50 kDa protein	IPI00246022.3	7
53 kDa protein	IPI00172579.3	7
6-phosphogluconate dehydrogenase, decarboxylating	IPI00219525.9	15
60 kDa heat shock protein, mitochondrial precursor	IPI00472102.2	47
60S acidic ribosomal protein P0	IPI00008530.1	44
60S ribosomal protein L18	IPI00215719.5	26
60S ribosomal protein L4	IPI00003918.4	13
72 kDa protein	IPI00258514.3	2
78 kDa glucose-regulated protein precursor	IPI00003362.1	33
93 kDa protein	IPI00177366.2	4
ADP/ATP translocase 2	IPI00007188.4	12
ATP synthase alpha chain, mitochondrial precursor	IPI00440493.2	21
ATP-citrate synthase	IPI00021290.4	6
ATP-dependent DNA helicase II 80 kDa subunit	IPI00220834.7	3
ATP-dependent RNA helicase DDX3X	IPI00215637.4	12
Acetyl-CoA acetyltransferase, mitochondrial precursor	IPI00030363.1	12
Aconitate hydratase, mitochondrial precursor	IPI00017855.1	4
Actin, aortic smooth muscle	IPI00008603.1	16
Actin, cytoplasmic 1	IPI00021439.1	28
Activator of 90 kDa heat shock protein ATPase homolog 1	IPI00030706.1	7

Acyl-CoA dehydrogenase, medium-chain specific, mitochondria	IPI00005040.1	5
Adenosylhomocysteinase	IPI00012007.5	10
Adenylyl cyclase-associated protein 1	IPI00008274.5	7
Alcohol dehydrogenase	IPI00220271.2	13
Aldehyde dehydrogenase X, mitochondrial precursor	IPI00103467.3	8
Aldehyde dehydrogenase family 7 member A1	IPI00221234.4	5
Aldehyde dehydrogenase, mitochondrial precursor	IPI00006663.1	18
Alpha subunit of GsGTP binding protein	IPI00030939.2	5
Alpha-actinin-1	IPI00013508.4	24
Alpha-actinin-4	IPI00013808.1	16
Alpha-enolase	IPI00465248.4	21
Alpha-enolase, lung specific	IPI00013769.1	12
Alpha-soluble NSF attachment protein	IPI00009253.1	14
Annexin A5	IPI00329801.11	23
Arginyl-tRNA synthetase	IPI00004860.2	7
Aspartate aminotransferase, mitochondrial precursor	IPI00018206.3	21
Bifunctional purine biosynthesis protein PURH	IPI00289499.3	15
C-1-tetrahydrofolate synthase, cytoplasmic	IPI00218342.9	13
CDNA FLJ45525 fis, clone BRTHA2026311, highly similar to Pr	IPI00299571.4	19
CDNA FLJ45706 fis, clone FEBRA2028457, highly similar to Nu	IPI00444262.1	4
Calnexin precursor	IPI00020984.1	12
Calponin-3	IPI00216682.5	9
Calreticulin precursor	IPI00020599.1	6
Carbonyl reductase [NADPH] 1	IPI00295386.6	8
Carbonyl reductase [NADPH] 3	IPI00290462.4	11
Cargo selection protein TIP47	IPI00106668.3	18
Casein kinase II subunit alpha'	IPI00020602.1	6
Chloride intracellular channel protein 1	IPI00010896.2	25
Citrate synthase, mitochondrial precursor	IPI00025366.4	14
Coatomer subunit beta	IPI00295851.3	6
Coproporphyrinogen III oxidase, mitochondrial precursor	IPI00093057.6	5
Cytokeratin type II	IPI00005859.1	10
D-3-phosphoglycerate dehydrogenase	IPI00011200.4	11
DNA replication licensing factor MCM2	IPI00184330.5	7
DNA replication licensing factor MCM4	IPI00018349.5	3
Developmentally-regulated GTP-binding protein 1	IPI00031836.3	7
Developmentally-regulated GTP-binding protein 1	IPI00031836.3	7
Dihydrolipoyl dehydrogenase, mitochondrial precursor	IPI00015911.1	8
DnaJ homolog subfamily B member 1	IPI00015947.4	8
Dolichyl-diphosphooligosaccharide--protein glycosyltransfer	IPI00025874.1	16
Dolichyl-diphosphooligosaccharide-protein glycosyltransfera	IPI00297084.7	5
Drebrin	IPI00003406.2	5
EEF1A1 protein	IPI00025447.6	15
ELAV-like protein 1	IPI00301936.3	11
ENO1P protein	IPI00328587.4	4

ERO1-like protein alpha precursor	IPI00386755.2	10
Early endosome antigen 1	IPI00329536.1	4
Electron transfer flavoprotein alpha-subunit, mitochondrial	IPI00010810.1	11
Elongation factor 1-alpha 2	IPI00014424.1	12
Elongation factor 1-beta	IPI00178440.2	21
Elongation factor 1-delta	IPI00023048.3	13
Elongation factor 1-gamma	IPI00000875.5	11
Elongation factor 2	IPI00186290.5	18
Elongation factor Tu, mitochondrial precursor	IPI00027107.4	20
Endoplasmic precursor	IPI00027230.3	18
Eukaryotic initiation factor 4A-I	IPI00025491.1	11
Eukaryotic translation initiation factor 3 subunit 6	IPI00013068.1	7
Eukaryotic translation initiation factor 3 subunit 8	IPI00016910.1	4
Exportin-1	IPI00298961.3	3
Exportin-1	IPI00298961.3	3
FK506-binding protein 4	IPI00219005.2	16
Family with sequence similarity 62 (C2 domain containing),	IPI00022143.3	3
Far upstream element-binding protein 2	IPI00298363.2	12
Fascin	IPI00163187.9	5
Fatty acid synthase	IPI00026781.2	7
Filamin A, alpha	IPI00302592.2	9
Fructose-bisphosphate aldolase A	IPI00465439.4	36
Fructose-bisphosphate aldolase C	IPI00418262.3	7
Fumarate hydratase, mitochondrial precursor	IPI00296053.3	10
G22P1 protein	IPI00465430.4	9
GARS protein	IPI00465260.3	5
GPI-anchored protein p137	IPI00030910.1	7
Glucose-6-phosphate isomerase	IPI00027497.4	15
Glucosidase II beta subunit precursor	IPI00026154.1	4
Glutamate dehydrogenase 1, mitochondrial precursor	IPI00016801.1	8
Glutathione reductase, mitochondrial precursor	IPI00016862.1	6
Glutathione synthetase	IPI00010706.1	7
Glyceraldehyde-3-phosphate dehydrogenase	IPI00219018.6	22
Guanine nucleotide-binding protein G(I)/G(S)/G(T) beta subu	IPI00003348.2	7
HLA class I histocompatibility antigen, A-1 alpha chain pre	IPI00026569.3	9
HNRPF protein	IPI00003881.5	20
HSPC117 protein	IPI00550689.3	6
Heat shock 70 kDa protein 1	IPI00304925.3	12
Heat shock 70 kDa protein 1L	IPI00301277.1	9
Heat shock 70 kDa protein 4	IPI00002966.1	18
Heat shock 70 kDa protein 4L	IPI00295485.1	6
Heat shock protein 75 kDa, mitochondrial precursor	IPI00030275.5	12
Heat shock protein HSP 90-alpha 2	IPI00382470.2	10
Heterogeneous nuclear ribonucleoprotein R	IPI00012074.3	4
Histidyl-tRNA synthetase	IPI00021808.3	5
Histone-binding protein RBBP4	IPI00328319.7	5
Hsc70-interacting protein	IPI00032826.1	11

Hsp90 co-chaperone Cdc37	IPI00013122.1	7
Hypothetical protein DKFZp313B047	IPI00013452.8	3
Hypothetical protein DKFZp686P03159	IPI00418169.1	5
Hypothetical protein DKFZp761K0511	IPI00334775.5	21
Hypothetical protein LRRC59	IPI00396321.1	7
IARS protein	IPI00013234.2	3
Importin alpha-2 subunit	IPI00002214.1	8
Importin beta-1 subunit	IPI00001639.2	9
Importin beta-2 subunit	IPI00024364.2	4
Importin beta-3	IPI00329200.5	3
Inorganic pyrophosphatase	IPI00015018.1	9
Inosine-5'-monophosphate dehydrogenase 2	IPI00291510.3	8
Inosine-5'-monophosphate dehydrogenase 2	IPI00291510.3	8
Interleukin enhancer-binding factor 2	IPI00005198.2	9
Junction plakoglobin	IPI00554711.1	4
Keratin, type I cytoskeletal 10	IPI00009865.1	44
Keratin, type I cytoskeletal 14	IPI00384444.4	23
Keratin, type I cytoskeletal 16	IPI00217963.2	20
Keratin, type I cytoskeletal 9	IPI00019359.3	46
Keratin, type II cytoskeletal 1	IPI00220327.2	51
Keratin, type II cytoskeletal 2 epidermal	IPI00021304.1	45
Keratin, type II cytoskeletal 2 oral	IPI00008359.1	1
Keratin, type II cytoskeletal 5	IPI00009867.2	21
Keratin, type II cytoskeletal 6B	IPI00293665.6	9
Kinesin heavy chain	IPI00012837.1	9
L-lactate dehydrogenase B chain	IPI00219217.2	34
LAP3 protein	IPI00419237.2	10
Leucine zipper-EF-hand containing transmembrane protein 1,	IPI00017592.1	6
Leucyl-tRNA synthetase, cytoplasmic	IPI00103994.4	2
Lon protease homolog, mitochondrial precursor	IPI00005158.1	4
Lupus La protein	IPI00009032.1	12
Lysyl-tRNA synthetase	IPI00014238.2	5
Malate dehydrogenase, cytoplasmic	IPI00291005.7	14
Malate dehydrogenase, mitochondrial precursor	IPI00291006.1	20
Methionine adenosyltransferase II, beta, isoform 1	IPI00002324.3	15
Methionyl-tRNA synthetase	IPI00008240.2	3
Mitochondrial 28S ribosomal protein S29	IPI00018120.1	10
Mitochondrial import receptor subunit TOM34	IPI00009946.4	11
Mitochondrial-processing peptidase alpha subunit, mitochond	IPI00166749.3	5
Mitotic checkpoint protein BUB3	IPI00013468.1	7
Multifunctional protein ADE2	IPI00217223.1	10
Myosin-9	IPI00019502.2	6
NAD-dependent malic enzyme, mitochondrial precursor	IPI00011201.1	4
NADH-ubiquinone oxidoreductase 49 kDa subunit, mitochondria	IPI00025239.2	6
NCL protein	IPI00183526.5	7

Neuroblast differentiation-associated protein AHNAK (Fragme	IPI00021812.1	3
Niban-like protein	IPI00456750.2	3
Nuclear migration protein nudC	IPI00550746.4	8
Nucleosome assembly protein 1-like 4	IPI00017763.3	7
ORF protein	IPI00171903.1	7
Ornithine aminotransferase, mitochondrial precursor	IPI00022334.1	7
PREDICTED: KIAA1765 protein	IPI00028196.4	2
PREDICTED: heat shock 90kDa protein 1, alpha-like 3	IPI00031523.2	17
PREDICTED: similar to 40S ribosomal protein SA	IPI00398958.1	18
PREDICTED: similar to ATP-dependent DNA helicase II, 70 kDa	IPI00412259.2	7
PREDICTED: similar to Serine/threonine-protein kinase Nek4	IPI00455635.1	14
Peroxiredoxin-1	IPI00000874.1	13
Peroxiredoxin-6	IPI00220301.4	44
Phenylalanyl-tRNA synthetase beta chain	IPI00300074.3	4
Phosphoglycerate kinase 1	IPI00169383.2	37
Phosphoribosylformylglycinamide synthase	IPI00004534.3	4
Plastin-2	IPI00010471.3	23
Poly(rC)-binding protein 1	IPI00016610.2	15
Probable ATP-dependent RNA helicase DDX5	IPI00017617.1	10
Probable ATP-dependent RNA helicase DDX6	IPI00030320.3	5
Profilin-1	IPI00216691.4	20
Programmed cell death 6-interacting protein	IPI00246058.4	4
Prohibitin	IPI00017334.1	28
Prohibitin-2	IPI00027252.6	8
Proliferating cell nuclear antigen	IPI00021700.3	22
Proliferation-associated protein 2G4	IPI00299000.3	16
Proliferation-inducing gene 21	IPI00552496.1	38
Proteasome 26S non-ATPase subunit 11 variant (Fragment)	IPI00105598.3	9
Proteasome activator complex subunit 1	IPI00030154.1	9
Proteasome subunit alpha type 4	IPI00299155.5	7
Protein disulfide-isomerase A3 precursor	IPI00025252.1	26
Protein disulfide-isomerase A4 precursor	IPI00009904.1	16
Protein disulfide-isomerase precursor	IPI00010796.1	21
Purine nucleoside phosphorylase	IPI00017672.3	25
Rab GDP dissociation inhibitor beta	IPI00031461.1	9
Ras GTPase-activating-like protein IQGAP1	IPI00009342.1	5
Ras-GTPase-activating protein binding protein 1	IPI00012442.1	14
RcTPI1 (Fragment)	IPI00383071.1	11
Ribonuclease inhibitor	IPI00550069.2	6
RuvB-like 1	IPI00021187.3	15
RuvB-like 2	IPI00009104.6	10
S-adenosylmethionine synthetase isoform type-2	IPI00010157.1	7
S-methyl-5-thioadenosine phosphorylase	IPI00011876.1	14
Serine hydroxymethyltransferase, mitochondrial precursor	IPI00002520.1	12
Serine-threonine kinase receptor-associated protein	IPI00294536.1	14

Signal recognition particle receptor beta subunit	IPI00295098.3	24
Similar to Clathrin heavy chain	IPI00024067.2	6
Similar to Eukaryotic translation initiation factor 4GI	IPI00220365.3	4
Similar to heterogeneous nuclear ribonucleoprotein A1 isofo	IPI00042578.5	10
Splice Isoform 1 of Acyl-CoA dehydrogenase, very-long-chain	IPI00028031.2	6
Splice Isoform 1 of Clathrin heavy chain 2	IPI00022881.1	1
Splice Isoform 1 of Cullin-associated NEDD8-dissociated pro	IPI00100160.3	5
Splice Isoform 1 of DNA replication licensing factor MCM7	IPI00299904.3	4
Splice Isoform 1 of Elongation factor Ts, mitochondrial pre	IPI00021016.3	14
Splice Isoform 1 of F-actin capping protein beta subunit	IPI00026185.5	12
Splice Isoform 1 of Filamin-B	IPI00289334.1	6
Splice Isoform 1 of Filamin-C	IPI00178352.3	1
Splice Isoform 1 of Heat shock cognate 71 kDa protein	IPI00003865.1	36
Splice Isoform 1 of Heterogeneous nuclear ribonucleoprotein	IPI00216049.1	25
Splice Isoform 1 of Importin-alpha re-exporter	IPI00022744.5	7
Splice Isoform 1 of Isocitrate dehydrogenase [NAD] subunit	IPI00030702.1	11
Splice Isoform 1 of Keratin, type I cytoskeletal 13	IPI00009866.6	7
Splice Isoform 1 of Kinectin	IPI00328753.1	3
Splice Isoform 1 of Mitochondrial inner membrane protein	IPI00009960.6	5
Splice Isoform 1 of Plectin 1	IPI00014898.1	1
Splice Isoform 1 of Polyadenylate-binding protein 1	IPI00008524.1	17
Splice Isoform 1 of Probable ATP-dependent RNA helicase DDX	IPI00023785.5	7
Splice Isoform 1 of Programmed cell death protein 8, mitoch	IPI00000690.1	6
Splice Isoform 1 of Proteasome activator complex subunit 3	IPI00030243.1	8
Splice Isoform 1 of Protein KIAA1967	IPI00182757.9	4
Splice Isoform 1 of Protein arginine N-methyltransferase 1	IPI00018522.3	7
Splice Isoform 1 of Serine hydroxymethyltransferase, cytos	IPI00002519.1	3
Splice Isoform 1 of Spectrin alpha chain, brain	IPI00413728.2	2
Splice Isoform 1 of Transcription intermediary factor 1-bet	IPI00438229.1	15
Splice Isoform 1 of Uridine-cytidine kinase 2	IPI00065671.1	10
Splice Isoform 1 of Voltage-dependent anion-selective chann	IPI00031804.1	9
Splice Isoform 2 of Microtubule-associated protein 4	IPI00220113.1	3
Splice Isoform 2 of Neutral alpha-glucosidase AB precursor	IPI00011454.1	3
Splice Isoform 3 of Ribosome-binding protein 1	IPI00215743.2	3
Splice Isoform 4 of Heterogeneous nuclear ribonucleoprotein	IPI00106509.2	7
Splice Isoform 5 of Dynamin-1-like protein	IPI00037283.2	3
Splice Isoform A of Phosphate carrier protein, mitochondria	IPI00022202.3	6
Splice Isoform AGX2 of UDP-N-acetylhexosamine pyrophosphory	IPI00000684.4	11
Splice Isoform Beta of Heat-shock protein 105 kDa	IPI00218993.1	5
Splice Isoform Beta-1C of Integrin beta-1 precursor	IPI00217561.1	4
Splice Isoform DUT-M of Deoxyuridine 5'-triphosphate nucleo	IPI00013679.1	10
Splice Isoform GAC of Glutaminase kidney isoform, mitochond	IPI00215687.1	6

Splice Isoform Long of Delta 1-pyrroline-5-carboxylate synt	IPI00008982.1	13
Splice Isoform Long of Double-stranded RNA-binding protein	IPI00000001.1	5
Splice Isoform Long of Heterogenous nuclear ribonucleoprote	IPI00025054.1	3
Splice Isoform Long of Sodium/potassium-transporting ATPase	IPI00006482.1	3
Splice Isoform Short of Proteasome subunit alpha type 1	IPI00016832.1	10
Spliceosome RNA helicase BAT1	IPI00328343.7	8
Splicing factor 3B subunit 3	IPI00300371.3	3
Staphylococcal nuclease domain-containing protein 1	IPI00140420.4	10
Stress-70 protein, mitochondrial precursor	IPI00007765.5	30
Stress-induced-phosphoprotein 1	IPI00013894.1	10
Succinyl-CoA:3-ketoacid-coenzyme A transferase 1, mitochond	IPI00026516.1	4
Synaptic vesicle membrane protein VAT-1 homolog	IPI00156689.3	8
T-complex protein 1 subunit alpha	IPI00290566.1	11
T-complex protein 1 subunit beta	IPI00297779.6	27
T-complex protein 1 subunit delta	IPI00302927.5	12
T-complex protein 1 subunit epsilon	IPI00010720.1	8
T-complex protein 1 subunit eta	IPI00018465.1	18
T-complex protein 1 subunit theta	IPI00302925.3	21
T-complex protein 1 subunit zeta	IPI00027626.2	5
TUBA6 protein	IPI00166768.2	22
Talin-1	IPI00298994.4	3
Thioredoxin domain-containing protein 5 precursor	IPI00171438.2	10
Thioredoxin-dependent peroxide reductase, mitochondrial pre	IPI00024919.3	15
Threonyl-tRNA synthetase, cytoplasmic	IPI00329633.5	3
Transferrin receptor protein 1	IPI00022462.1	16
Transketolase	IPI00021716.1	13
Translocated promoter region	IPI00022970.3	2
Trifunctional enzyme alpha subunit, mitochondrial precursor	IPI00031522.2	13
Trifunctional enzyme beta subunit, mitochondrial precursor	IPI00022793.4	12
Tubulin alpha-1 chain	IPI00007750.1	33
Tubulin beta-1 chain	IPI00006510.1	4
Tubulin beta-2 chain	IPI00011654.2	13
Tubulin beta-2C chain	IPI00007752.1	46
Tubulin--tyrosine ligase-like protein 12	IPI00029048.2	3
Tubulin-specific chaperone B	IPI00293126.1	8
Tyrosine-protein phosphatase non-receptor type 1	IPI00297261.3	5
Tyrosyl-tRNA synthetase, cytoplasmic	IPI00007074.4	10
UDP-glucose 6-dehydrogenase	IPI00031420.2	4
Ubiquinol-cytochrome-c reductase complex core protein 2, mi	IPI00305383.1	17
Ubiquinol-cytochrome-c reductase complex core protein I, mi	IPI00013847.3	6
Ubiquitin-activating enzyme E1	IPI00026119.6	16
Ubiquitin-activating enzyme E1	IPI00645078.1	6

WUGSC:H_RG054D04.1 protein	IPI00011457.1	10
Zyxin	IPI00020513.2	10
chaperonin containing TCP1, subunit 3 isoform b	IPI00290770.3	17
heterogeneous nuclear ribonucleoprotein H1	IPI00013881.5	10
lactate dehydrogenase A	IPI00217966.6	22
poly(rC)-binding protein 2 isoform b	IPI00012066.1	19
pyrroline-5-carboxylate reductase 1 isoform 2	IPI00376503.1	8
pyruvate kinase 3 isoform 2	IPI00220644.6	47

Peptide adduction with HNE and analogs.

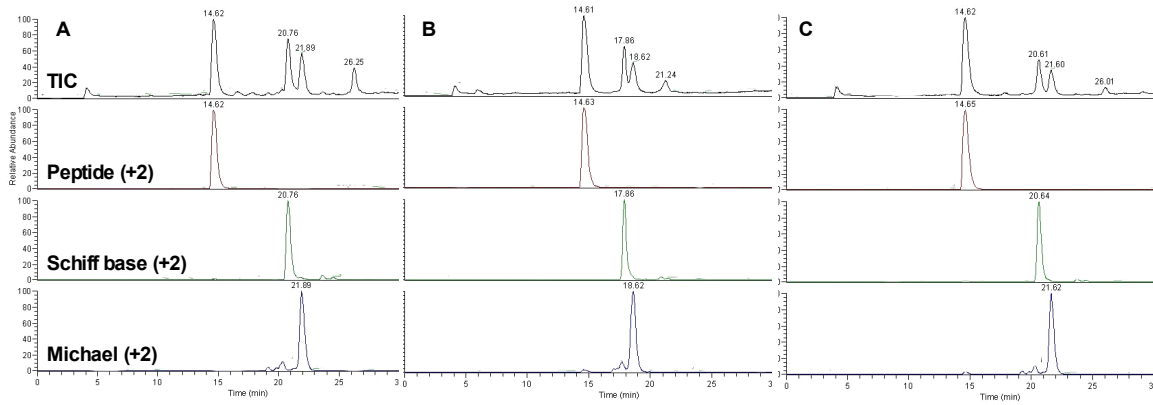


Figure S1. Incubation of Angiotensin (1 mM) with A) 5 mM HNE, B) 5 mM AI-HNE, or C) 5 mM Az-HNE. From top to bottom are the TIC, unreacted peptide, Schiff base, and Michael adducts. Samples were incubated at 37 °C for 1 h, reduced with NaBH₄ and analyzed by reverse-phase LC-MS.

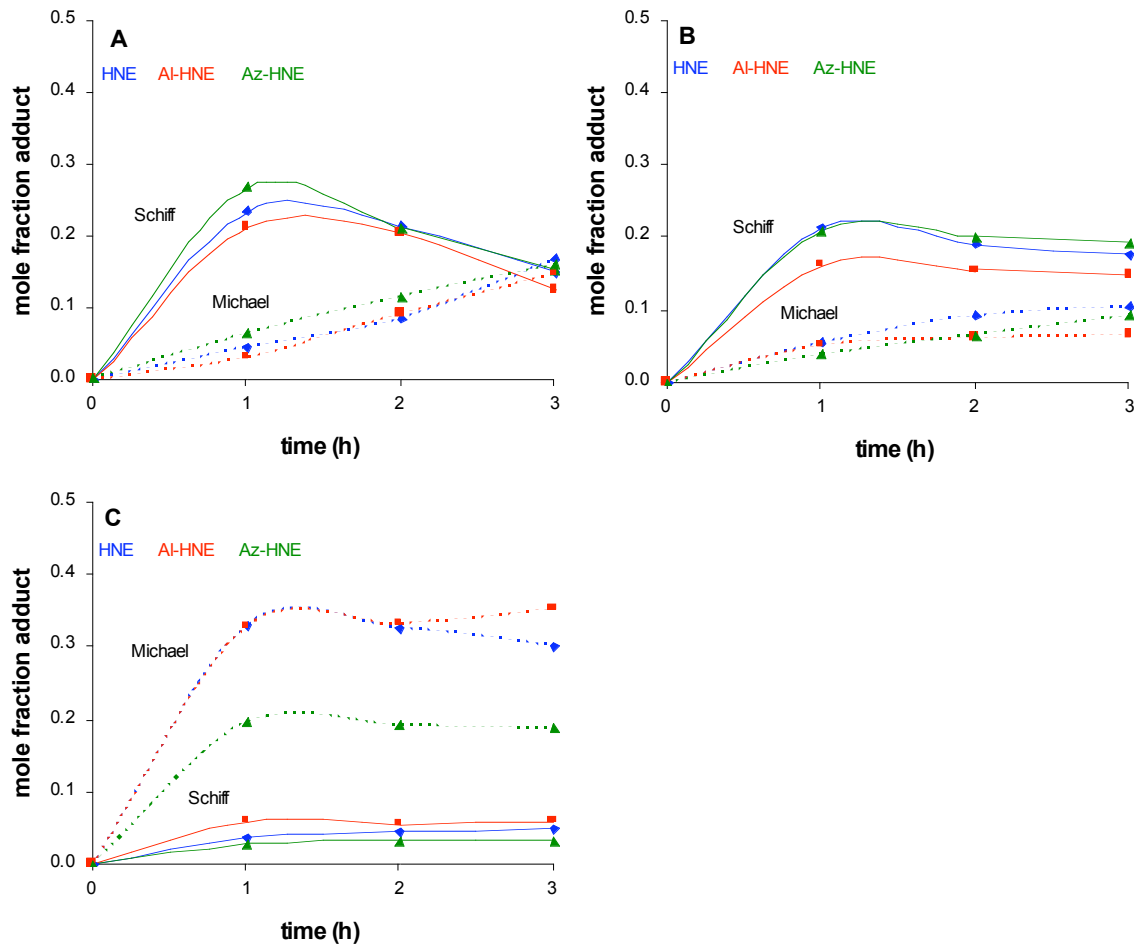


Figure S2. Incubation of A) Angiotensin (His), B) Gamma 2 factor (Lys) and C) ANP (Cys) with an equimolar mixture of **1-3**. HNE is shown in blue, AI-HNE in red and Az-HNE in green. Solid and dashed lines represent Schiff base and Michael adducts, respectively. Samples were incubated at 37 °C, reduced with NaBH₄ and analyzed by reverse-phase LC-MS.

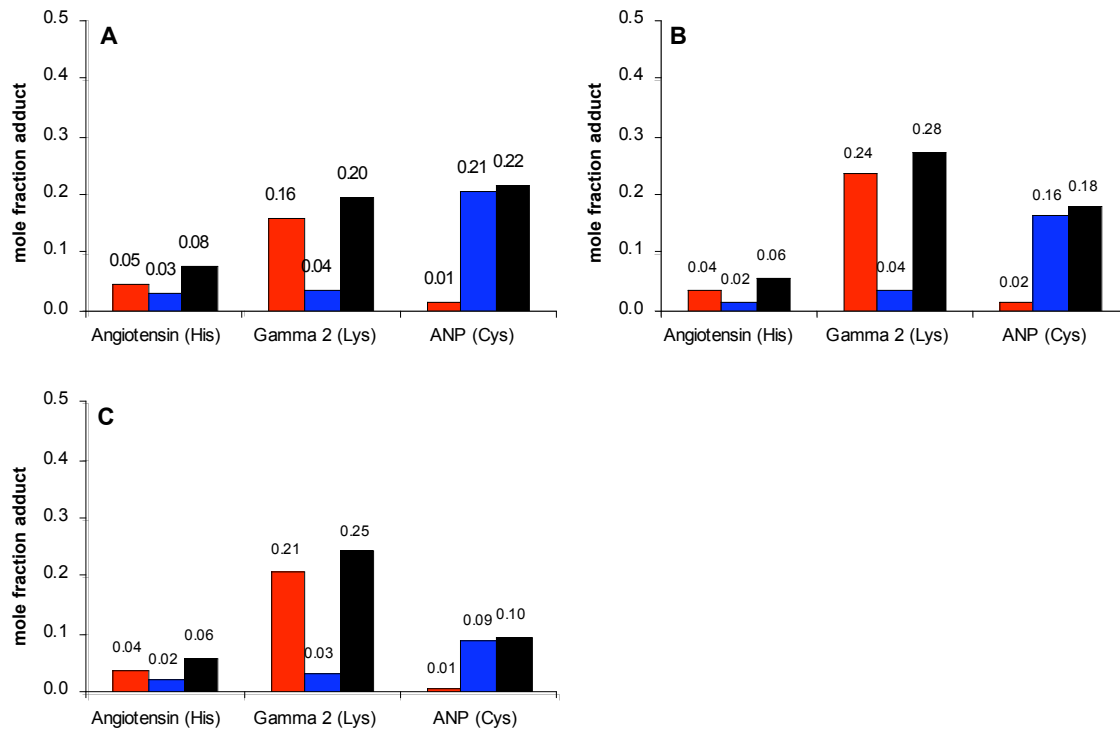


Figure S3. Incubation of an equimolar mixture of Angiotensin (His), Gamma 2 factor (Lys) and ANP (Cys) with A) HNE, B) Al-HNE and C) Az-HNE. Schiff base adducts are shown in red, Michael adducts in blue and total adduct formation in black. Samples were incubated at 37 °C for 1 h, reduced with NaBH₄ and analyzed by reverse-phase LC-MS.