Defining Efficient Enzyme-Cofactor Pairs for Bioorthogonal Profiling of Protein Methylation

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Supplementary Materials

1. Supplementary Materials and Methods:

General. Chemicals were obtained from Aldrich Chemical or Acros Organics and used without further purification. HPLC grade solvents were purchased from Fisher Scientific and purified on a solvent drying system. Optima grade acetonitrile was degassed under vacuum and used for HPLC purification. Reactions were performed in cleaned round bottom flask, fitted with rubber septum. Thin layer chromatography (TLC) was performed using Whatman 250 micron aluminum backed UV F_{254} pre-coated silica gel flexible plates and visualized under UV light (254 nm) or by staining with potassium permanganate ($KMnO_4$). Flash chromatography was performed on Merck 230–400 mesh silica gel 60 under positive pressure of nitrogen. Solvents were removed by rotary evaporation using a Büchi rotary evaporator, equipped with a dry ice-acetone condenser. Analytical HPLC was carried out on a Waters 600 Controller HPLC/2998 diode array detector using XBridge™ Prep C18 5μm 4.6×150mm reverse phase column with UV detection at 260 nm. Preparative HPLC purification was carried out on the same HPLC using XBridge™ Prep C18 5μm OBD™ 19×150mm reverse phase column with UV detection at 260 nm. Concentration and subsequent lyophilization of aqueous samples were performed using Savant Sc210A SpeedVac Concentrator (Thermo and Flexi-Dry™ μP Freeze-Dryer (FTS™ System), respectively. Proton nuclear magnetic resonance spectra (^{1}H-NMR) were recorded on Bruker Avance III 500 MHz instrument at 24 ^oC. Chemical shifts for ^{1}H-NMR spectra are reported as δ in units of parts per million (ppm) relative to tetramethylsilane (δ 0.0) or using residual solvent signals: chloroform-*d* (δ 7.26, singlet) and deuterium oxide-d_2 (δ 4.80, singlet). Coupling constants are expressed in Hz. Mass spectra were collected at the MSKCC Analytical Core Facility on a PE SCIEX API 100 or Waters Acuity SQD LC-MS with electron spray ionization (ESI) probe.

Synthesis and characterization of SAM analogues. SAM analogues **2**, **3**, **5** and **6** were synthesized as described previously (S1-S4). Compounds **4** and **7** were synthesized as the following: into a solution of *S*-adenosyl-*L*-homocystine (15 mg, 0.039 mM) in formic and acetic acids (1:1, 1 mL) was added (*E*)-1-bromopent-2-ene (288 mg, 1.95 mM) or (*E*)-7-bromohept-5-en-1-yne (335 mg, 1.95 mM) and $AgClO_4$ (8 mg, 0.039 mM) and stirred at ambient temperature (22 ^oC). Reaction progress was monitored by analytical reversed-phase HPLC (XBridge™ C18 5μm 4.6×150mm) at 260nm. After 4 hrs, an additional batch of $AgClO_4$ and the bromides were

added to drive the reactions to completion. The reactions were then quenched by distilled water containing 0.01% TFA (v/v). The aqueous phase was washed three times with diethyl ether (3×15 mL) and then passed through Nalgene 0.2 μM syringe filter. Compound **4** and **7** were purified with preparative reversed-phase HPLC (XBridge™ Prep C18 5μm OBD™ 19×150mm). Diastereomeric mixture of the SAM analogues was collected, concentrated and then lyophilized overnight. The resultant compounds were re-dissolved in water containing 0.01% TFA (v/v) and stored at –80 ^{o}C before use. The concentrations of SAM analogues were determined by the UV absorption with ε_{260}=15400 L mol^{-1} cm^{-1}. Compounds **4** and **7** were isolated in ~55% and ~40% yield, respectively. Analytical and spectral data are described below.

SAM analugue 4: ***^{1}H-NMR (600 MHz, D_2O):*** δ 8.35 (s, 1H), 8.34 (s, 0.5H), 8.33 (s, 0.5H), 6.08-6.03 (m, 1.5H), 5.94-5.89 (m, 0.5H), 5.37 (q, 0.5H, J=7.56 Hz), 5.25 (q, 0.5H, J=7.56 Hz), 4.55 (t, 0.5H, J=6.18 Hz), 4.51 (t, 0.5H, J=5.82Hz), 4.43-4.40 (m, 1H), 4.0 (d, 1H, J=7.56 Hz), 3.96 (d, 1H, J=7.56 Hz), 3.85-3.80 (m, 1H), 3.77-3.65 (m, 2H), 3.44-3.38 (m, 1H), 3.36-3.28 (m, 1H), 2.02 (q, 1H, J=7.02 Hz), 1.93 (q, 1H, J=6.6 Hz), 0.86 (t, 1.5H, J=7.44 Hz), 0.78 (t, 1.5H, J=7.44 Hz). ***^{13}C-NMR (150 MHz, D_2O):*** δ 171.20, 171.14, 150.02, 148.70, 148.66, 147.94, 147.92,144.54, 144.48, 143.45, 143.41, 117.22, 115.28, 113.35, 112.11, 111.81, 90.02, 89.99, 78.61, 78.46, 73.0, 72.8, 72.6, 51.81, 51.76, 42.93, 42.23, 40.76, 40.40, 35.20, 34.93, 25.23, 25.15, 25.12, 25.03, 20.3, 11.96, 11.83. Total 38 peaks for two diastereomers. ***ESI-MS (m/z):*** 453.2[M]$^{+}$, 351.9 [5′-((*E*)-pent-2-enyl)thio-5′-deoxyadenosine+H]$^{+}$, 250.2 [5′-deoxyadenosine]$^{+}$, 135.8 [adenosine+H]$^{+}$. ***HRMS:*** Calculated for $C_{19}H_{29}N_6O_5S$: 453.1920; obtained: 453.1913. **SAM analogue 7:** ***^{1}H-NMR (600 MHz, D_2O):*** δ 8.37 (s, 0.5H), 8.35 (s, 1H), 8.34 (s, 0.5H), 6.06 (dd, 1H, J=3.18, 8.22 Hz), 6.04-6.0 (m, 0.5H), 5.85-5.81 (m, 0.5H), 5.49 (q, 0.5H, J=7.56 Hz), 5.32 (q, 0.5H, J=7.56 Hz), 4.58 (t, 0.5H, J=6.54 Hz), 4.55 (t, 0.5H, J=6.12 Hz), 4.44-4.41 (m, 1H), 4.03 (d, 1H, J=7.62 Hz), 3.99 (d, 1H, J=7.92 Hz), 3.81-3.64 (m, 3H), 3.46-3.39 (m, 1H), 3.35-3.30 (m, 1H), 2.25-2.21 (m, 5H), 2.12-2.09 (m, 2H). ***^{13}C-NMR (150 MHz, D_2O):*** δ 171.85, 171.75, 150.32, 150.24, 147.97, 147.95, 145.01, 144.84, 144.34, 144.26, 143.47, 143.38, 117.23, 115.29, 115.0, 114.67, 113.36, 90.08, 90.06, 84.93, 84.77, 78.69, 78.34, 72.99, 72.94, 72.66, 70.06, 70.04, 52.32, 52.29, 42.10, 41.34, 40.64, 40.24, 35.23, 35.02, 30.65, 30.59, 25.30, 25.12, 16.94, 16.76. Total 42 peaks for two diastereomers. ***ESI-MS (m/z):*** 477.2[M]$^{+}$, ***HRMS:*** Calculated for $C_{21}H_{29}N_6O_5S$: 477.1920; obtained: 477.1903.

Synthesis of H3K9 peptide. Histone H3 peptide ARTKQTARKSTGGKAPRKQLA (amino acids 1-21) for single-point and steady-state kinetic measurements was obtained from Proteomics Resource Center of the Rockefeller University. TKQTAR$\mathbf{K_9^{(allyl)}}$STGG peptide used for crystallographic experiments was synthesized as described before (S5).

Protein expression and *in vitro* methyltransferase assay. Native EuHMT1/2 and their variants were expressed and purified as described previously (3, 6). For the initial screening, reactions were initialized by adding 1.0 μM enzymes (EuHMT1/2 and their variants) into 10 μM histone H3 peptide and 50 μM of cofactors (**1**–**7**) in 50 mM Tris-HCl buffer (pH=8.0) with the final volume of 20-μL. The reaction mixture was incubated at 25^{o}C for 30 min. The products were then subject to MALDI mass analysis as described before (3, 6).

Autoradiography assay for histone and non-histone substrates of EuHMT1/2. A 20-μL reaction was carried out at ambient temperature (22 ^{o}C) for overnight in the buffer containing 50 mM Tris-HCl pH 8.0 with 2.25 μM of [methyl-^{3}H]-*S*-adenosylmethionine and 2 μM of *E. Coli*-expressed EuHMT1 or EuHMT2 (the SET domain constructs) (3, 6) in the presence of 2-4 μg of various substrates. After the reactions, the samples were solved by SDS-PAGE and subsequently analyzed by autoradiography. The non-histone human recombinant substrates used in the current study were obtained either as generous gifts (C-terminal domain of POLR2A from Dr. Martin Walsh and PARP1 form Dr. Hening Lin) or purchased from Origene Technologies Inc (ACLY, PRMT5, IDH1) and Abnova (TARS, PKIM1/2, Nucleolin, HAT1, EEF1A1, HNRPK).

General method to measure steady-state kinetics. The reactions for steady-state kinetics were initialized by adding 1.0 μM enzymes (EuHMT1/2 and their variants) into 25 μM histone H3 peptide and various concentrations of cofactors (**1**–**7**) in 50 mM Tris-HCl buffer (pH=8.0) at 25^{o}C (the final volume of 10-μL). MALDI matrix solution of 1 μL (10 mg/mL of cyano-4-hydroxycinnamic acid in 1:1 acetonitrile and water with 0.1% TFA) was spotted on a MALDI plate prior to each measurement. At each time interval, 1 μL of the assayed reactions was applied to the MALDI plate on top of the previously-spotted matrix solution. An additional 1.5 μL acetonitrile containing 0.1% TFA was added to each sample to ensure the complete quenching of the reactions. The resultant samples were dries at ambient temperature (22 ^{o}C) and quantified by

MALDI-TOF mass spectrometry as described before (3, 6). See below for data processing and calculation of kinetic parameters.

Cloning, expression and purification of the EuHMT1 Y1211A mutant for crystallization. The expression construct of EuHMT1 methyltransferase domain was generated according to the protocol described previously (S7). The Y1211A mutation was introduced by QuikChange Site-directed mutagenesis kit (Agilent technologies). The EuHMT1 variant was overexpressed in *E. coli* BL21 (DE3) pRAREV2R induced by 1 mM isopropyl-1-thio-D-galactopyranoside (IPTG) at 15^{o}C for overnight. The cells were harvested and then resuspended in lysis buffer containing 50mM Tris-HCl (pH=8.0), 0.25 M NaCl, 2 mM β-mercaptoethanol, 5% glycerol, 0.1% Igepal, and protease inhibitor (1 mM phenylmethyl sulfonyl fluoride, PMSF). The cells were lysed by passing through a microfluidizer (Microfluidics Corp.) at 20,000 psi (Microfluidics Corp.). The cleared lysate was loaded onto a 5 ml HiTrap Chelating column (GE Healthcare), charged with Ni^{2+} on an AKTA FPLC system (GE Healthcare). The column was washed with 10 CV of 20 mM Tris-HCl (pH=8.0) containing 250 mM NaCl and 50 mM imidazole, 5% glycerol. The desired protein was eluted with the elution buffer containing 20 mM Tris-HCl (pH=8.0), 250 mM NaCl, 250 mM imidazole, and 5% glycerol. The eluted protein was loaded on a Superdex200 column (GE Healthcare), equilibrated with 20 mM Tris-HCl buffer, (pH=8.0) and 150 mM NaCl and was further purified to homogeneity by a Q-type ion-exchange chromatography.

Crystallization. Purified EuHMT1 Y1211A protein (10 mg/mL) was complexed with *S*-adenosyl-*L*-homocysteine (SAH) and H3K9 N^{ε}-allyl peptide at 1:5:5 molar ratio of protein:SAH:peptide and crystallized using hanging drop vapor diffusion method at 20 °C by mixing 1 µl of the protein solution with 1 µl of the reservoir solution containing 20% PEG 4,000, 10% isopropanol and 0.1 M HEPES (pH=7.5).

Data collection and structure determination. X-ray diffraction data of the complex of the EHMT1 Y1211A mutant with SAH and the H3K9 allyl peptide were collected at 100K at beamline23ID of Advanced Photon Source (APS), Argonne National Laboratory. Data were processed using the HKL-2000 suite (S8). The structure was solved by molecular replacement using MOLREP (S9). The crystal structure of human EHMT1 (PDB code 2IGQ) was used as the search model (S7). ARP/wARP was used for automatic model building (S10). REFMAC was

used for structure refinement (S11). Graphics program COOT was used for model building and visualization (S12). Crystal diffraction data and refinement statistics for the structure are given in Table S1.

Transient transfection, cell lysis and Western blot. Human embryonic kidney (HEK) 293T cells were grown, transfected and lysed for Western blot as well as for target labeling and mass spectroscopic analysis. Details were similar to what were described before (S6).

In-gel labeling of proteome-wide substrates of EuHMT1/2. HEK293T cell lysates (40 μg) of mock-, Y1211A-, and Y1154A-transfected were incubated with 50 μM of Hey-SAM for 1 h at ambient temperature (22 °C) with the final volume of 20 μL. After quenching the enzymatic reactions, the cellular lysates were passed through a detergent removal spin column and eluted with the Tris buffer (pH=8.0) containing 50 mM Tris-HCl, 10% glycerol, 2 mM TCEP, and 1×Roche protease inhibitor (S6). The resultant samples were then subject to CuAAC with 100 μM Az-Rho, 100 μM TBTA, 1 mM $CuSO_4$ and 2.5 mM TCEP for 1 hr at dark. After the CuAAC ligation, the cellular lysates were washed and subject to in-gel fluorescence as described before (S6).

Pull-down and mass spectroscopic analysis of proteome-wide substrates of EuHMT1/2. HEK293T cell lysates of 10 mg from mock-, Y1211A-, and Y1154A-transfeted cells were incubated with 50 μM Hey-SAM **6** in a total 5 mL volume for 2 hrs at ambient temperature (22 °C). Methanol of 25 mL was then added into each sample and kept at −80 ^{o}C overnight. The resultant samples were centrifuged for 30 min at 4,000 rpm. Supernatant was removed and protein pallets were washed with 15 mL cold methanol. , The pallets were air-dried for 25 min and re-dissolved with 4.5 mL SDS buffer containing 50 mM triethanolamine (pH=7.4), 150 mM NaCl, 4% SDS and 1×Roche protease inhibitor. Into the samples were added 0.5 mL click cocktail (100 μL of 5 mM azido-diazo-biotin in DMSO, 100 μL of 100 mM TCEP, 250 μL of 2 mM of TBTA in DMSO, and 100 μL of 50 mM of $CuSO_4$). The click reaction was performed for 1.5 hrs and the samples were mixed with 25 mL methanol and kept at −80 ^{o}C overnight. The samples were re-dissolved in 1 mL SDS buffer (50 mM triethanolamine, pH=7.4, 150 mM NaCl, 4% SDS, 1×Roche protease inhibitor and 10 mM EDTA), followed by the addition of 2 mL of the dilution buffer (50 mM triethanolamine, pH=7.4, 150 mM NaCl, 1% Brij97, and 1×Roche protease inhibitor). Streptavidin bead of 100 μL in the dilution buffer was mixed with the protein

samples and rotated end-over-end at ambient temperature (22 °C) for 1 h. The resultant mixture was further diluted with 10 mL PBS buffer supplemented with 0.2% SDS and centrifuged at 2,000 rpm for 2 min. The streptavidin beads were washed with the buffer containing 10 mL PBS and 250 mM ammonium bicarbonate buffer (ABC) and then transferred into 1.5 mL micro centrifuge tubes. The resultant streptavidin beads were treated with the freshly-prepared reduction buffer (500 μL of 8 M urea, 25 μL of 200 mM TCEP, and 25 μL of 400 mM iodoacetamide) for 40 min in dark, followed by the washing with 250 mM ammonium bicarbonate buffer. The bead-immoblized proteins were discharged twice with 250 μL of the elusion buffer (25 mM $Na_2S_2O_4$, 1% SDS and 250 mM ABC) for 30 min. Eluted proteins were subject to mass spectroscopic analysis as described before (S6).

Tandem Mass Tagging (TMT) for quantitative MS analysis of proteome-wide substrates of EuHMT1/2. For quantitative comparison of BPPM-revealed target proteins, samples were prepared as described above. Briefly, Hey-SAM incubated HEK293T cell lysates (either mock-, Y1211A-, or Y1154A-transfeted) were precipitated using methanol. Precipitated proteins were redissolved in SDS buffer and subjected to 'click' chemistry with azido-diazo-biotin. The ligated proteins were further precipitated using methanol and subsequently enriched with streptavidin beads and eluted with 25 mM $Na_2S_2O_4$ as detailed in the preceding section. Eluted proteins were first separated on 1D SDS PAGE. The gel bands of corresponding molecular weights were excised, reduced with 10 mM of DTT and alkylated with 55 mM iodoacetamide. In gel digestion was then carried out with the sequence grade modified trypsin (Promega, Fitchburg, WI) in 50 mM ammonium bicarbonate at 37 °C overnight. The peptides were extracted twice with 1% trifluoroacetic acid in 50% acetonitrile aqueous solution for 30 min. The extractions were centrifuged in a Speedvac to reduce the volume. Peptides from different samples were labeled with TMT reagents (Thermo, Pierce Biotechnology, Rockford, IL) according to the manufacture's instruction. Briefly, the TMT label reagents were dissolved by anhydrous acetonitrile, carefully added to each digestion products (126, 128 and 131 mass tagging were used for control vector-, EuHMT1- and 2-transfetcted samples, respectively). The reaction mixtures were incubated for 1 h at ambient temperature (22 ^{o}C) and then quenched by hydroxylamine. The TMT-labeled peptides were deslated using the stage tips.

For the subsequent LC-MS/MS analysis, the TMT-labeled peptides were separated by a 65 min gradient elution at a flow rate 0.250 μL/min with the EASY-nLCII™ integrated nano-HPLC

system (Proxeon, Denmark), which is directly interfaced with the Thermo LTQ-Orbitrap mass spectrometer. The analytical column was a home-made fused silica capillary column (75 μm ID, 150 mm length; Upchurch, Oak Harbor, WA) packed with C-18 resin (300 A, 5 μm, Varian, Lexington, MA). Mobile phase A consisted of 0.1% formic acid, and mobile phase B consisted of 100% acetonitrile and 0.1% formic acid. The LTQ-Orbitrap mass spectrometer was operated in the data-dependent acquisition mode using the Xcalibur 2.0.7 software and there is a single full-scan mass spectrum in the Orbitrap QE (400-1800 m/z, 30,000 resolution) followed by 10 MS/MS scans in the quadrupole collision cell using the higher energy collision dissociation (HCD). The MS/MS spectra from each LC-MS/MS run were searched against the selected database using an in-house Mascot or Proteome Discovery (Version 1.3) searching algorithm.

2. Supplementary Figures and Tables:

Figure S1. Schematic description of BPPM technology. Functional cofactor-mutant pairs are evolved by engineering the SAM-binding site of a PMT to accommodate bulky SAM analogues. Efficient cofactor-mutant pairs can be applied for substrate labeling in native cellular milieu. The labeled substrates are enriched and subject to MS-based proteomic and functional analysis. Analogues **2**–**7** of SAM **1** were systemically evaluated in the current work.

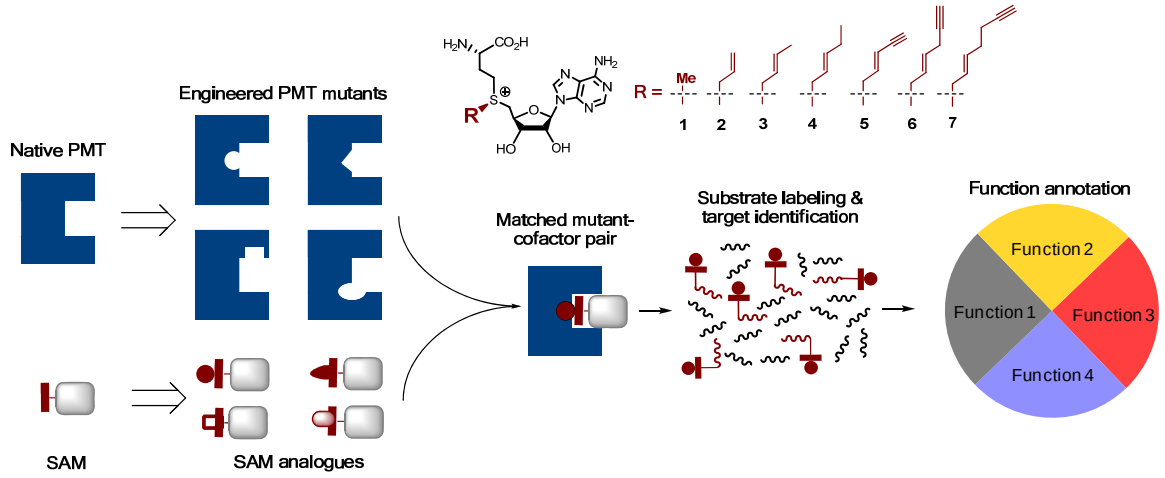


Figure S2. Heat-map representation of the extent of modification (%) of H3K9 peptide by SAM or SAM analogues with native and mutated EuHMT2. The sites of mutation are highlighted for EuHMT2 (PDB code 2O8J).

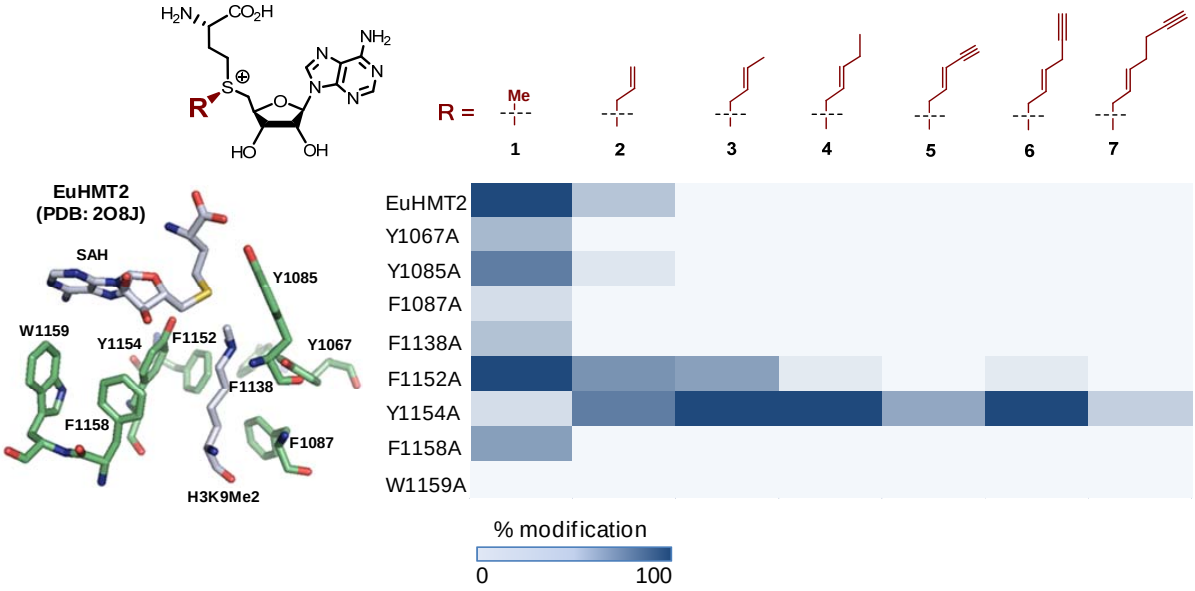


Figure S3. MALDI-based quantification of the activities of EuHMT1 and its mutants on SAM analogue cofactors. Only positive hits were shown here. In the set of screening, 1 μM enzyme (native/mutants) was added into the reaction mixture containing 10 μM of H3K9 peptide and 50 μM of SAM/SAM analogues for 30 min at ambient temperature (22 ^{o}C). The samples were then subject to MALDI-MS analysis as described above.

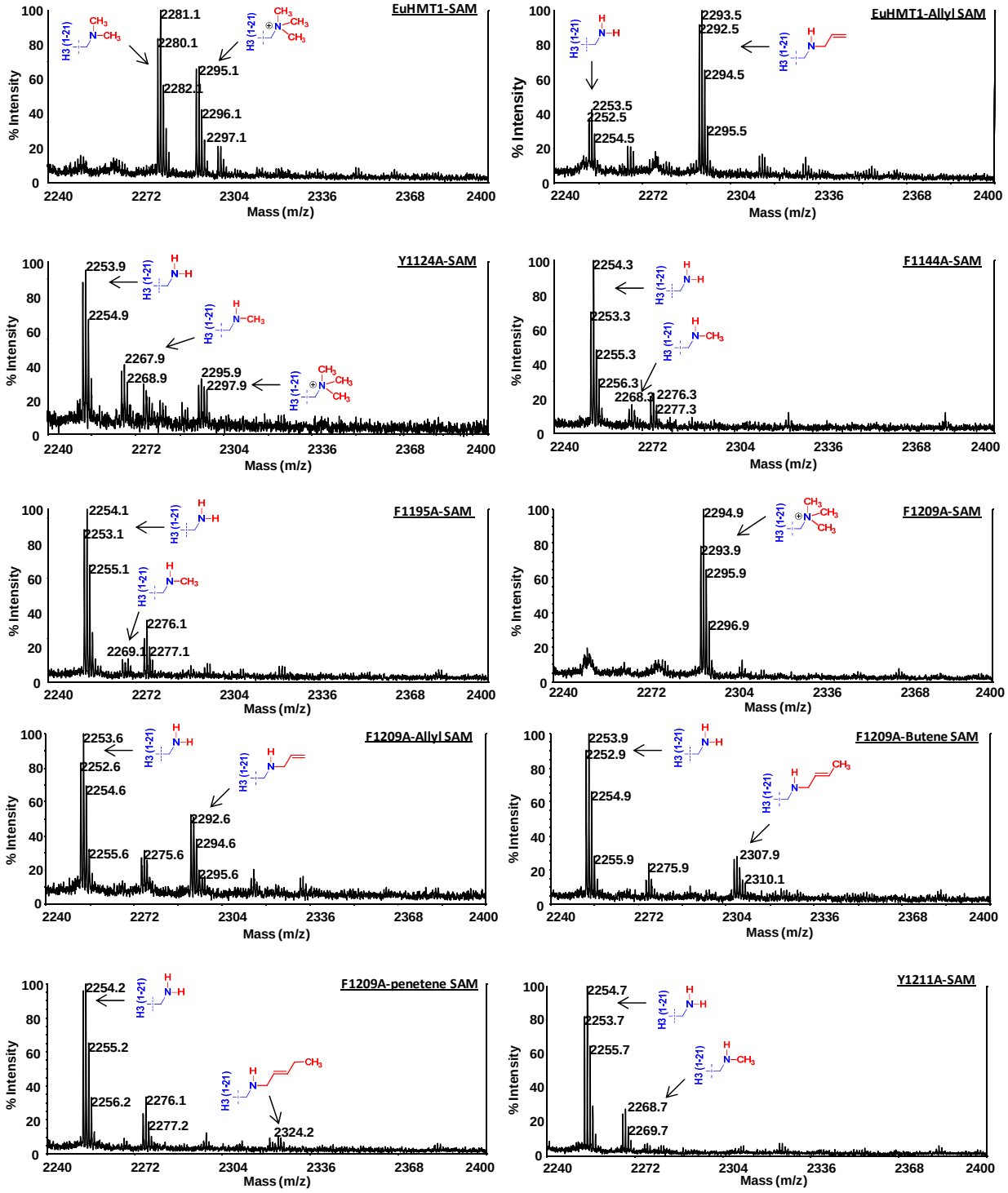


Figure S3 continued.

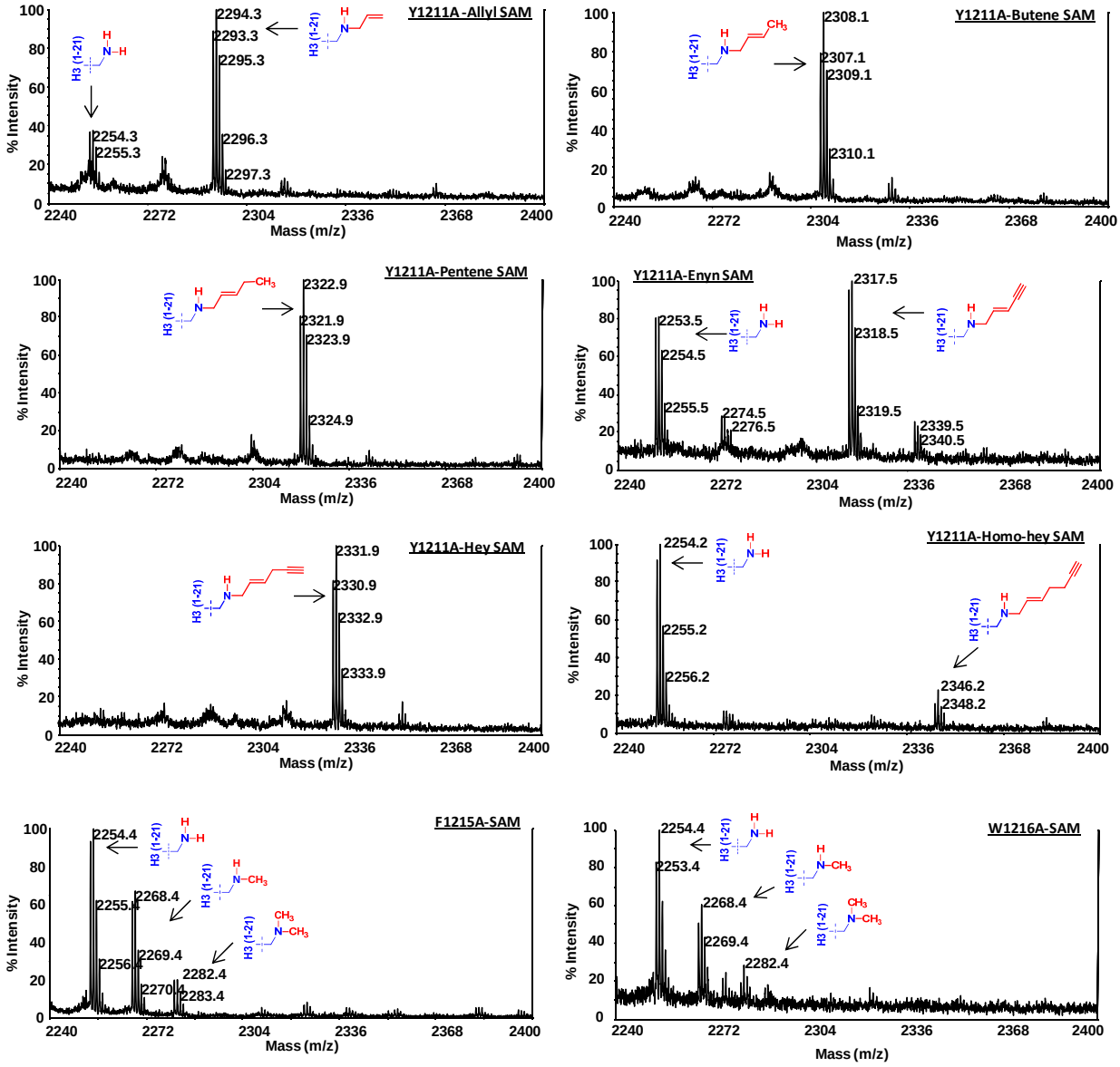


Figure S4. MALDI-based quantification of the activities of EuHMT2 and its mutants on SAM analogue cofactors **1**−**7**. Only positive hits were shown here. In the set of screening, 1 μM enzyme (native/mutants) was added into the reaction mixture containing 10 μM of H3K9 peptide and 50 μM of SAM/SAM analogues for 30 min at ambient temperature (22 °C). The samples were then subject to MALDI-MS analysis as described above.

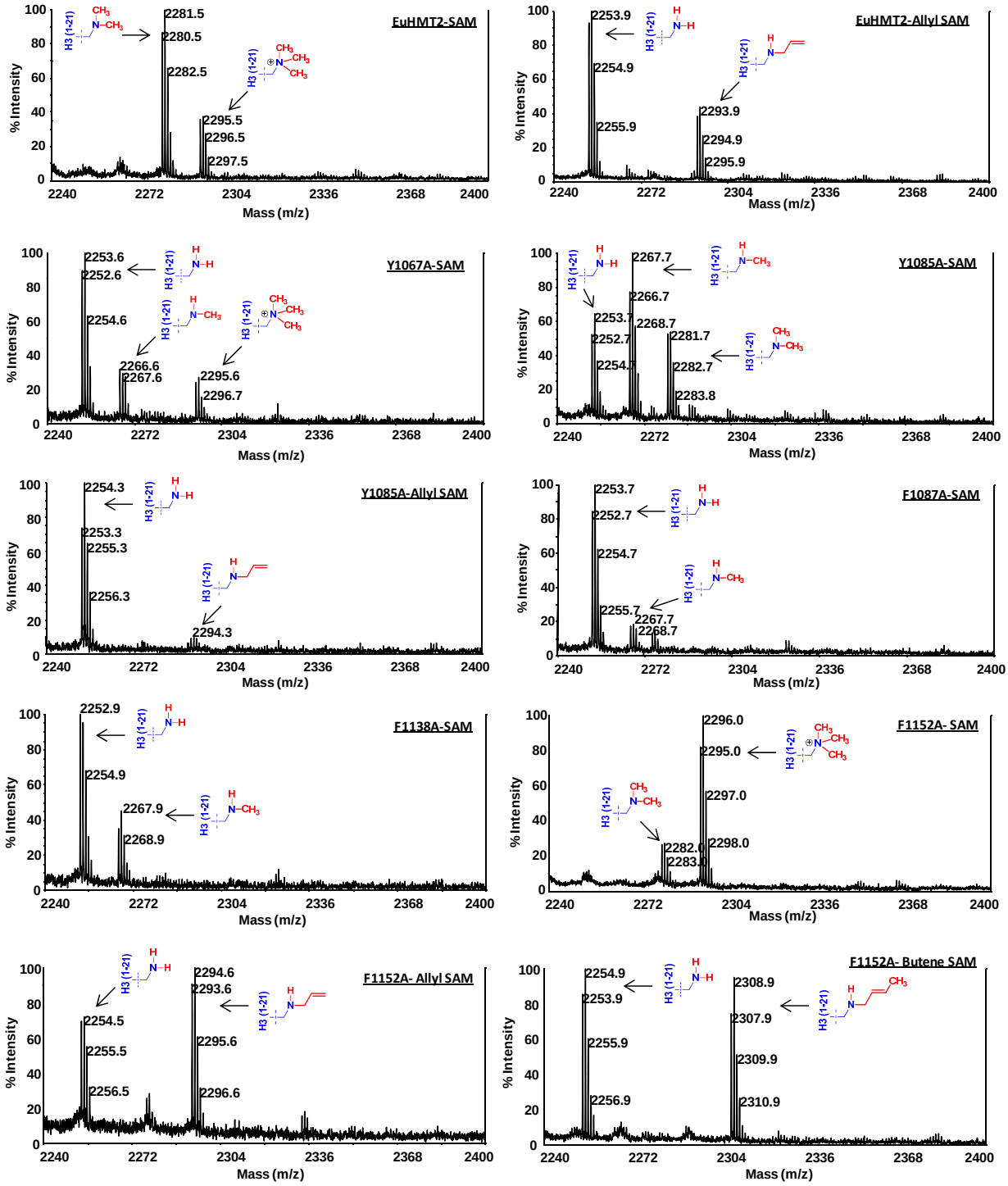


Figure S4 continued.

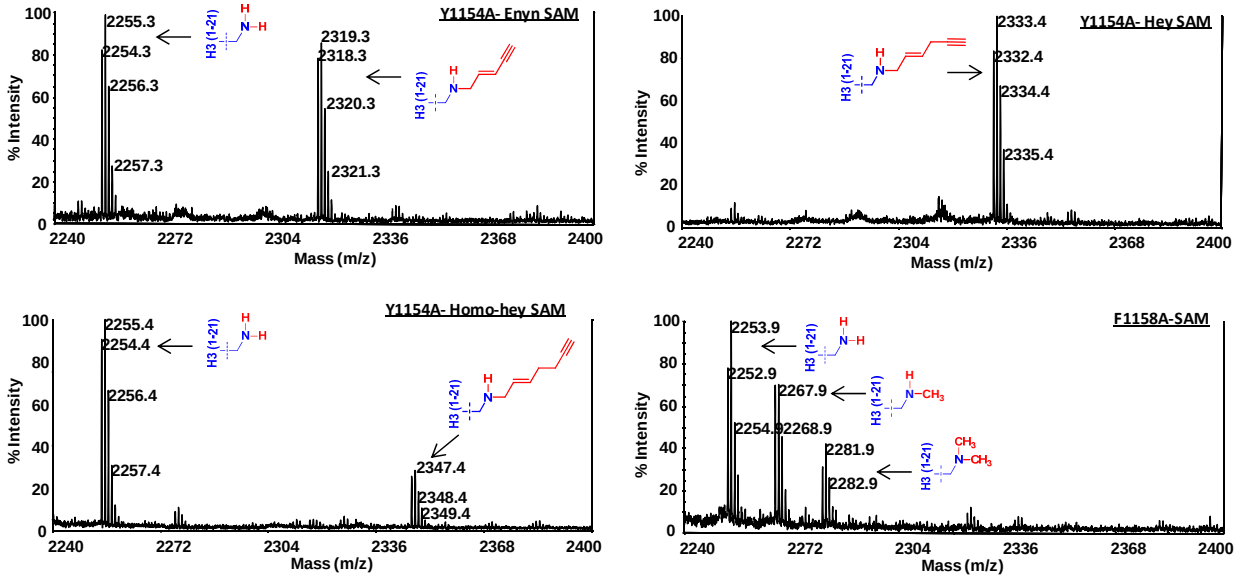


Figure S5. Overlaid structures of representative SET-domain containing PMTs EuHMT1, EuHMT2, Dim5, and SETMAR (PDB codes: 2RFI, 2O8J, 1PEG and 3BO5 respectively).

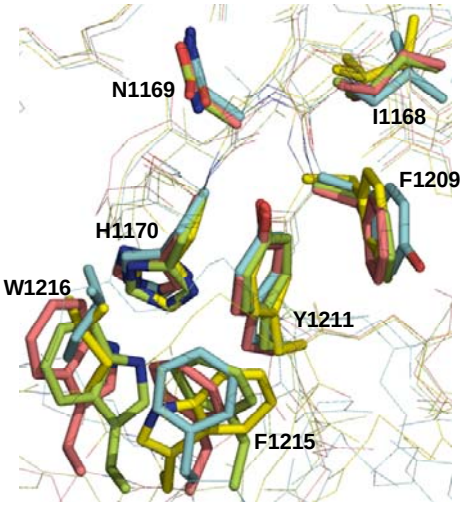


Figure S6. Superimposed structure of native EuHMT1 (PDB: 2RFI) and its Y1211A mutant (PDB: 4H4H).

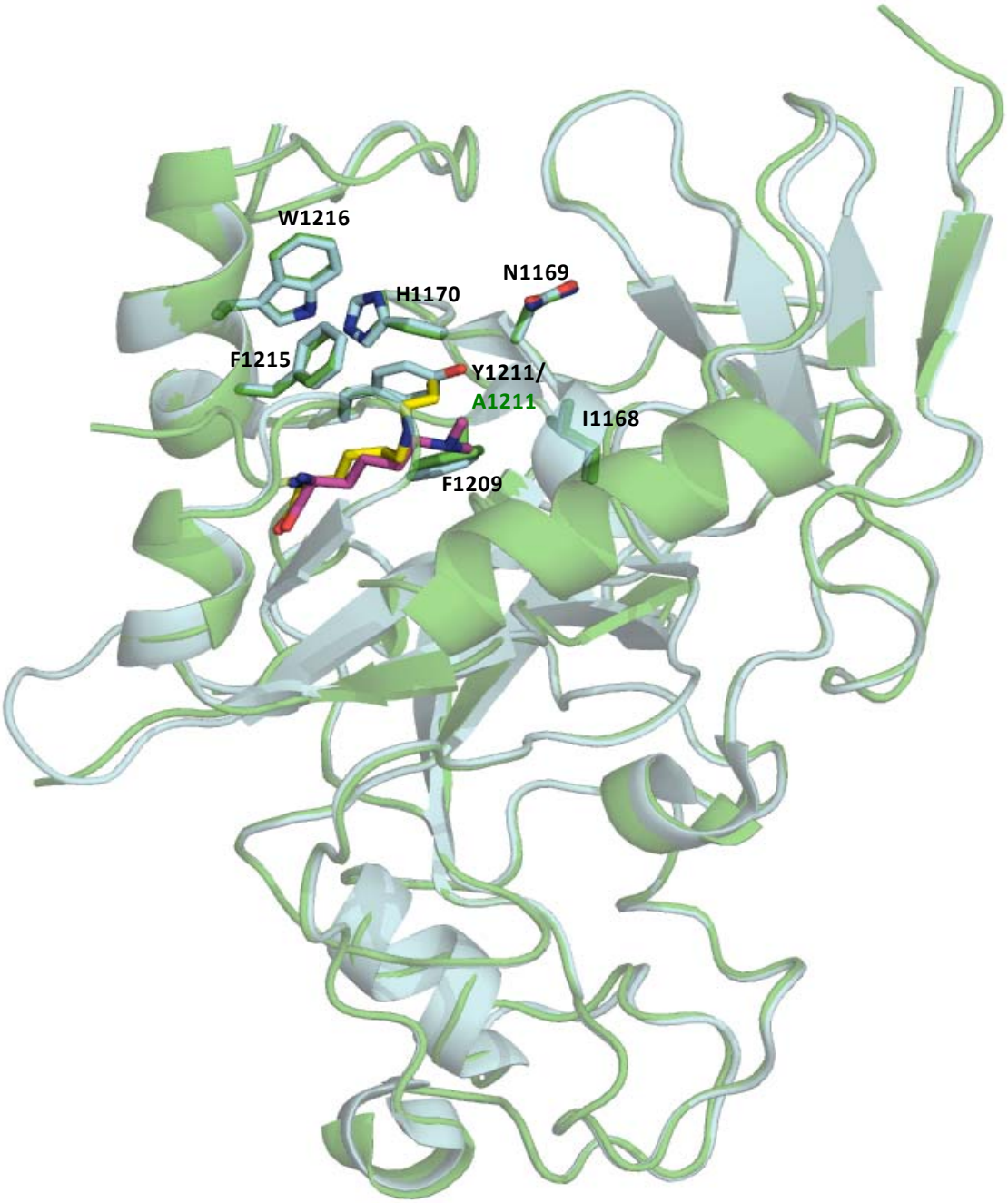


Figure S7. Structural characterization of EuHMT1-Y1211A mutant in complex with SAH and the allylated histone H3K9 peptide. Superimposed interactions of EuHMT1 and its Y1211A mutant with the H3K9 and H3K9(allyl) peptide, respectively.

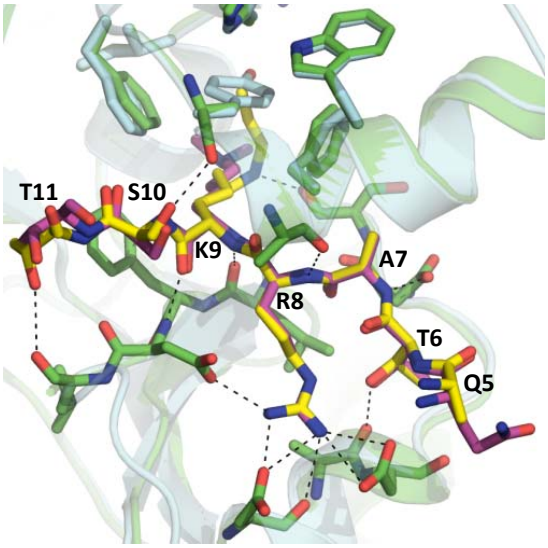


Figure S8. Kinetic analysis of active enzyme-cofactor pairs. Here a fixed concentration of H3K9 peptide (25 μM) was used as substrate in these experiments. In contrast, the amounts of the enzymes, cofactors and incubation time varied case by case as will be detailed below. %Modification.time^{-1} of the time-dependent experiments (slopes in the left panel) was then converted into Rate (min^{-1}) by multiplying a factor of 0.25 (conversion of %Modification to μM of modified peptide) and then dividing by the concentrations of enzymes. These rates were plotted against the concentrations of cofactors (right panel) with apparent k_{cat} and K_m calculated according to a standard Michaelis-Menten equation (right panel). Here, 0.5 μM and 1 μM of native EuHMT1 were used with SAM **1** (S13) and allyl-SAM **2** as cofactors, respectively.

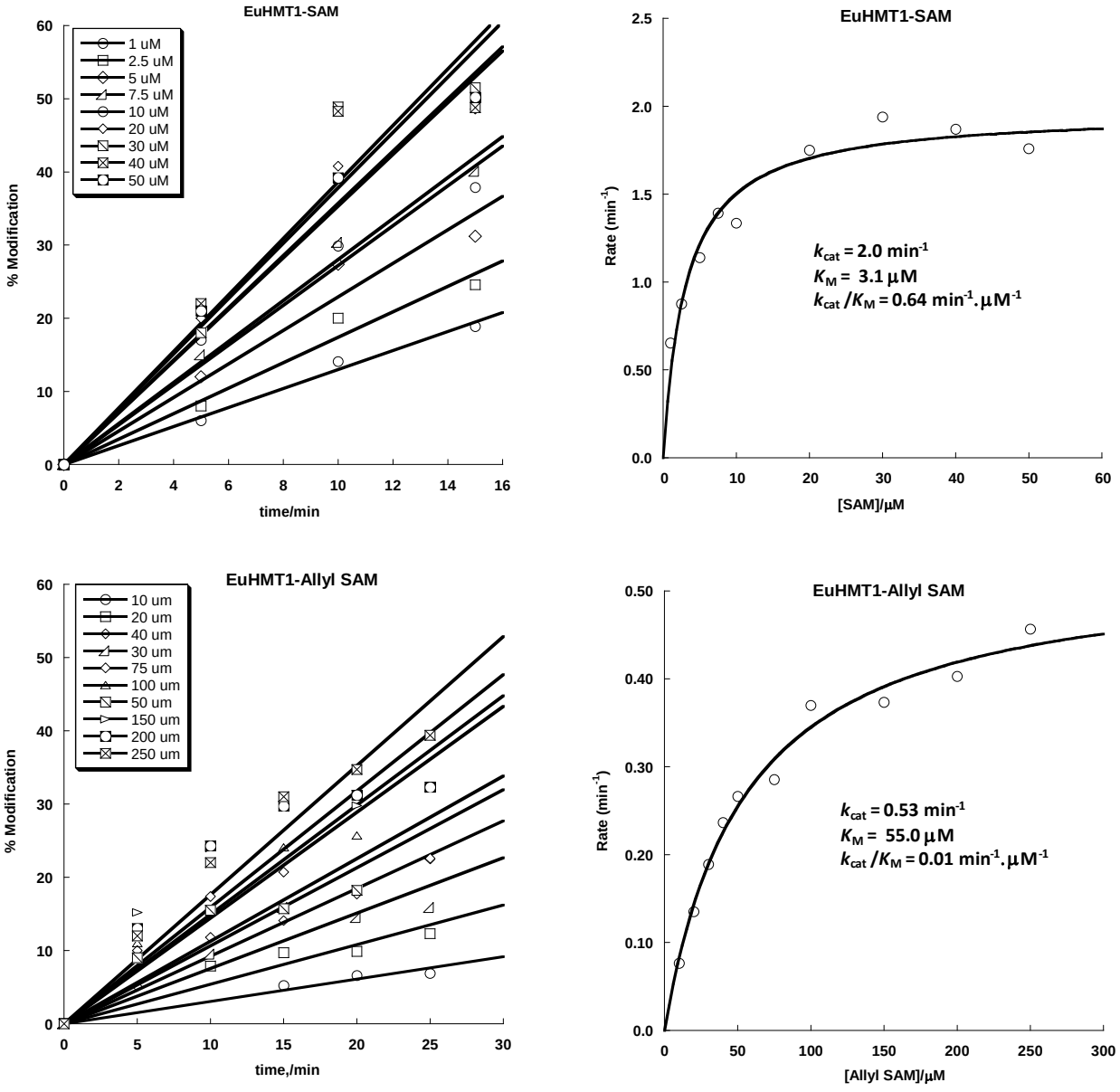


Figure S8 continued. Here 0.5 μM and 1 μM of native EuHMT2 were used when SAM and allyl-SAM **2** were used as cofactors, respectively.

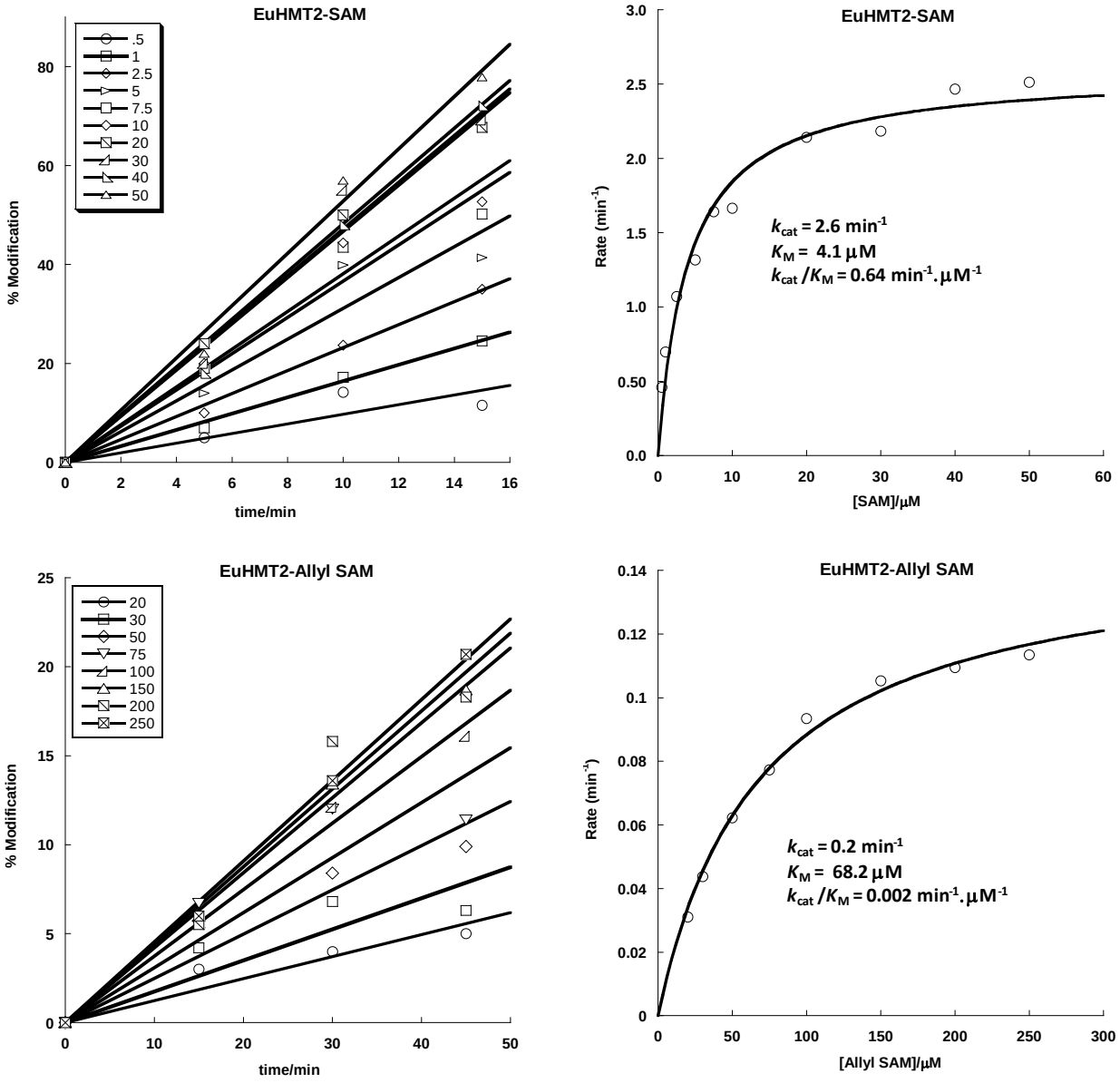


Figure S8 continued. In the following experiments, 2 μM of Y1211A and Y1154A mutants were used with SAM and allyl-SAM **2** as cofactors, respectively.

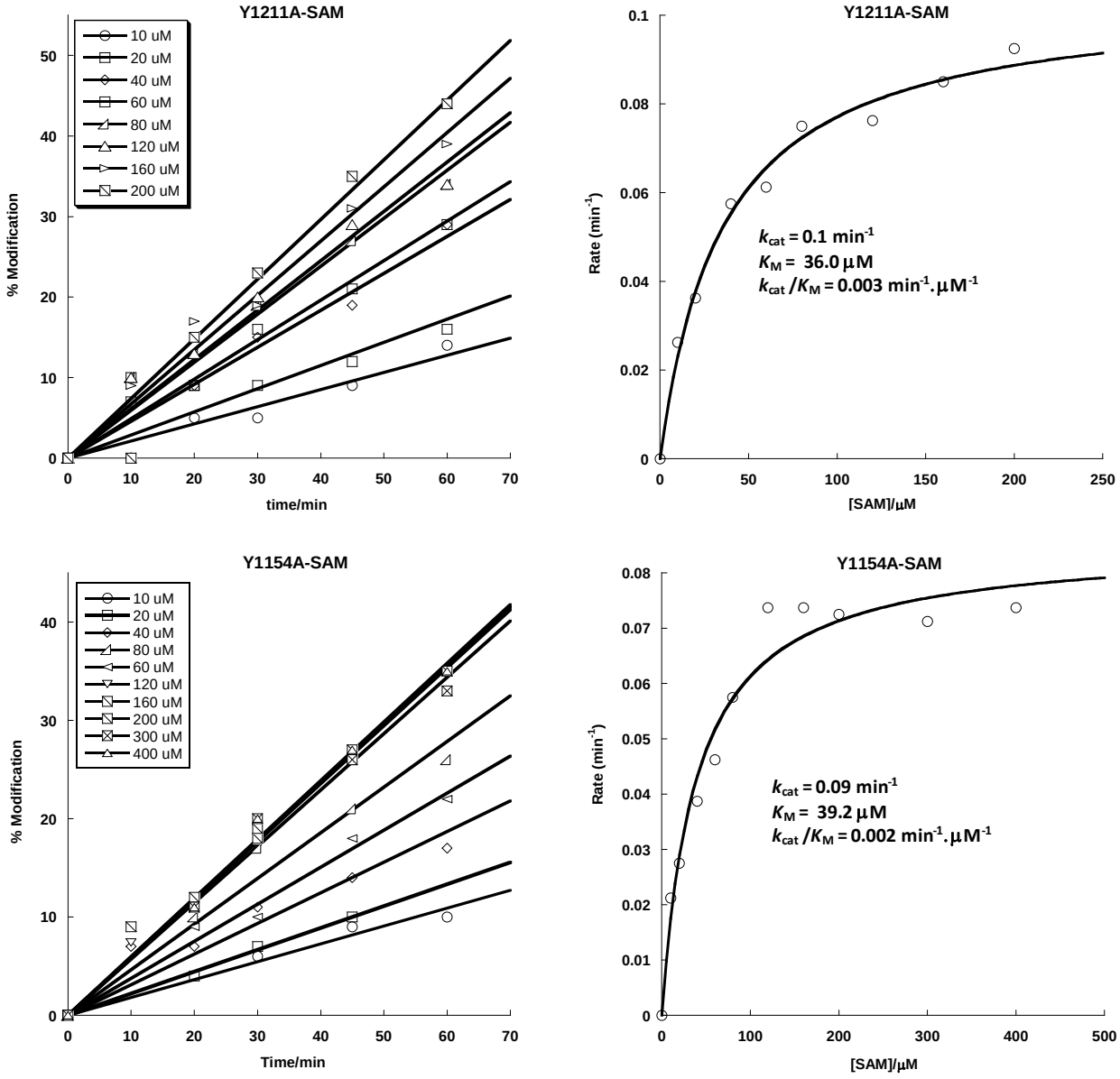
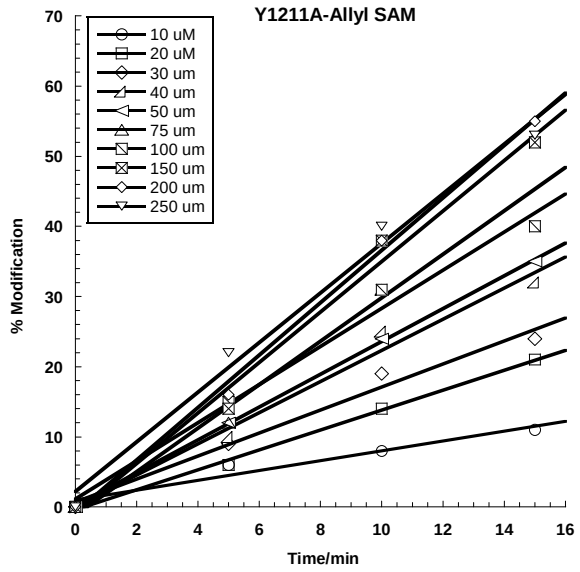
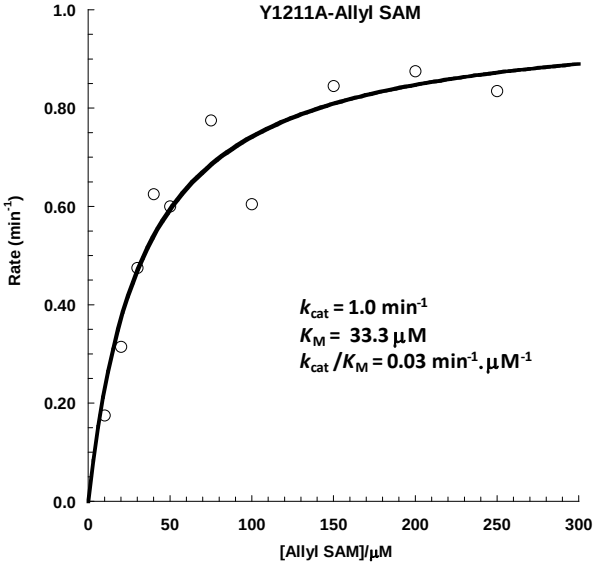
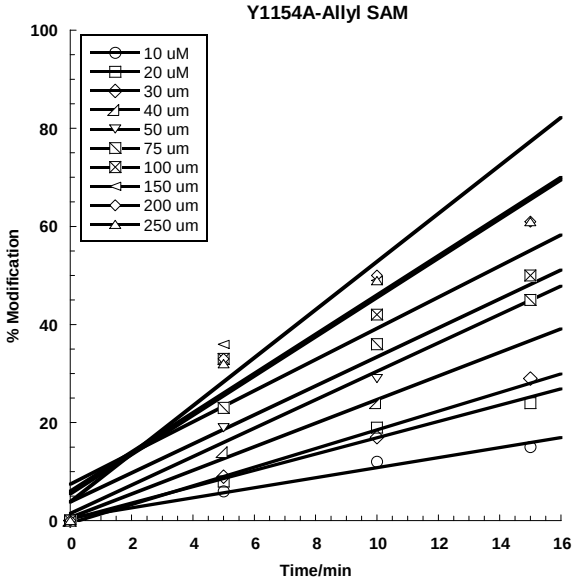


Figure S8 continued. In the following figures, 2 μM of Y1211A and Y1154A mutants were used with allyl-SAM **2** as a cofactor.







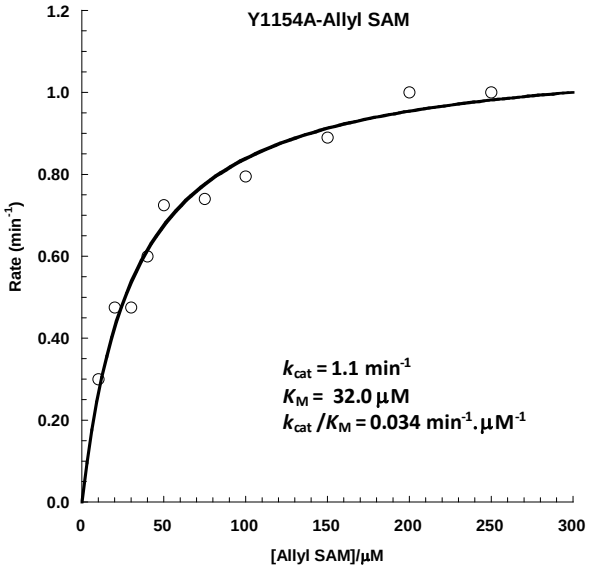


Figure S8 continued. In the following figures, 0.75 μM of Y1211A and Y1154A mutants were used with butene-SAM 3 as a cofactor.

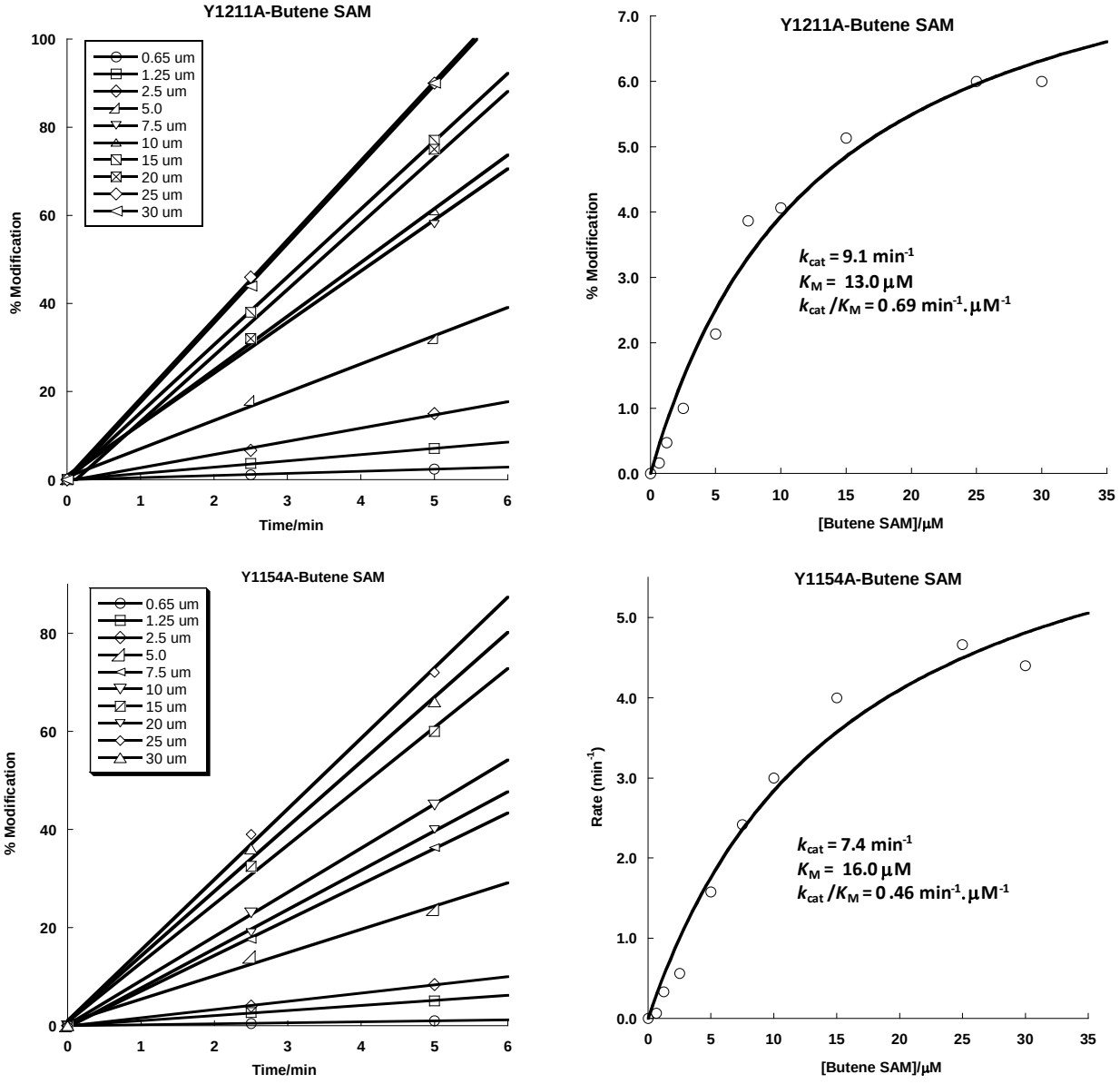
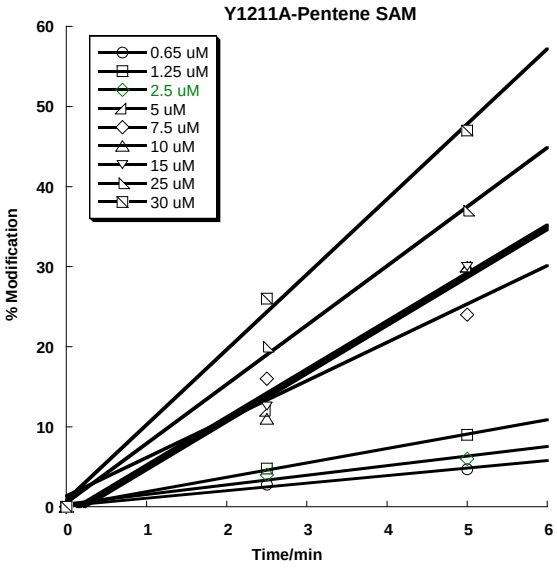
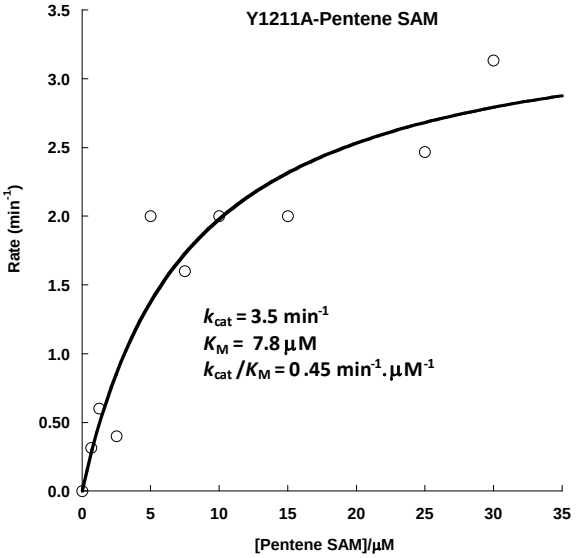
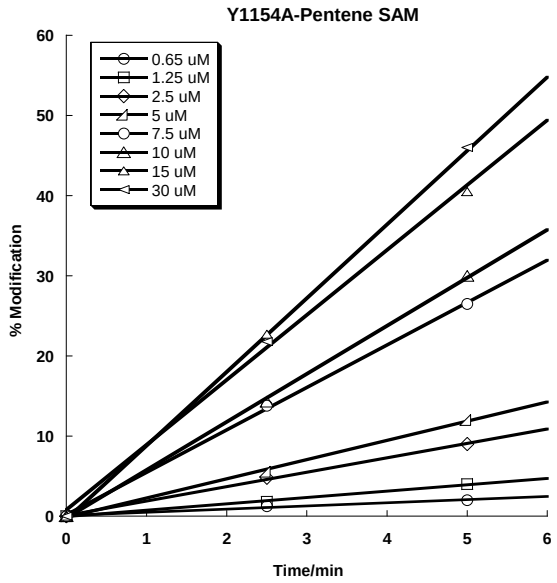


Figure S8 continued. In the following figures, 0.75 μM of Y1211A and Y1154A mutants were used with pentene-SAM **4** as a cofactor.







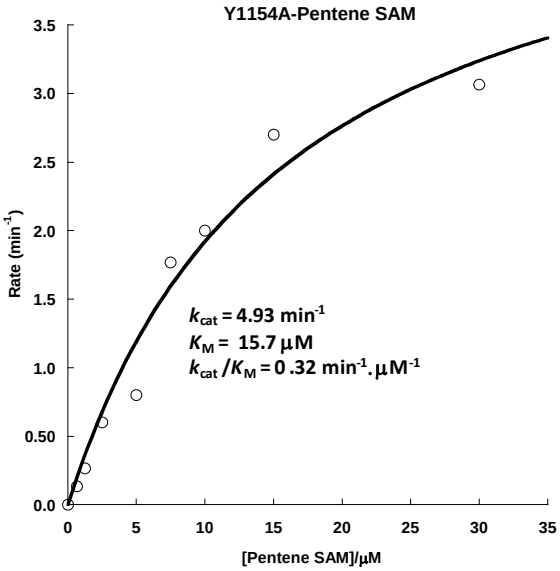
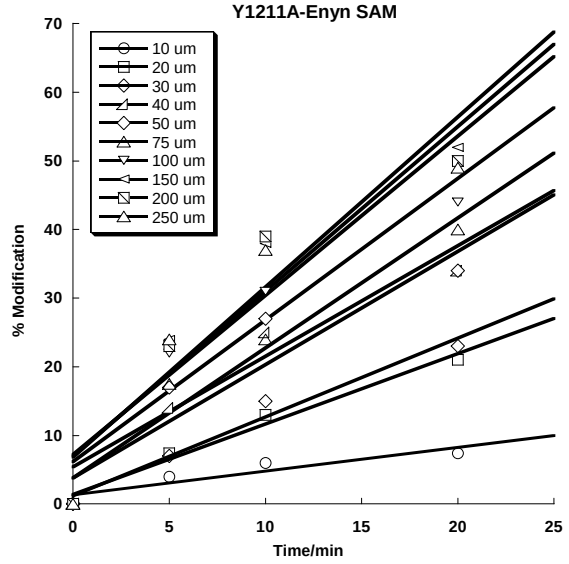
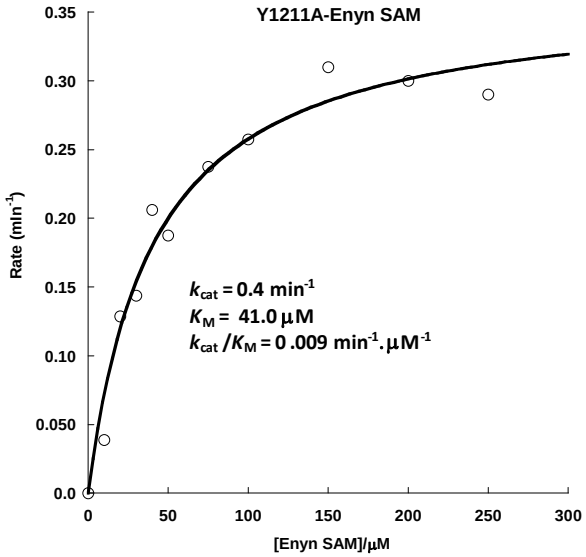
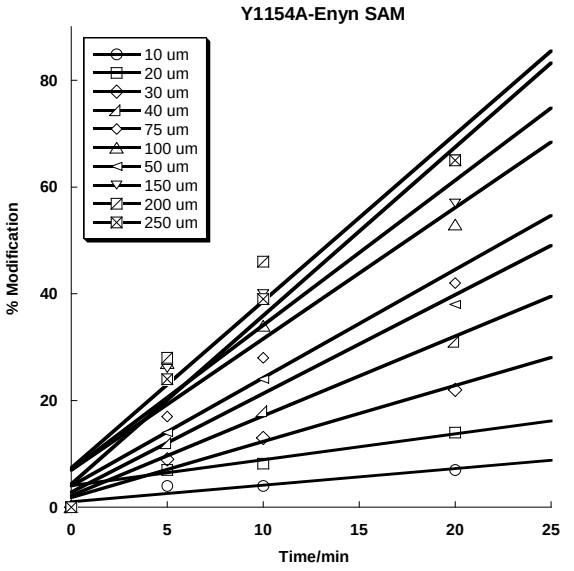


Figure S8 continued. In the following figures, 2 μM of Y1211A and Y1154A mutants were used with enyn-SAM **5** as a cofactor.







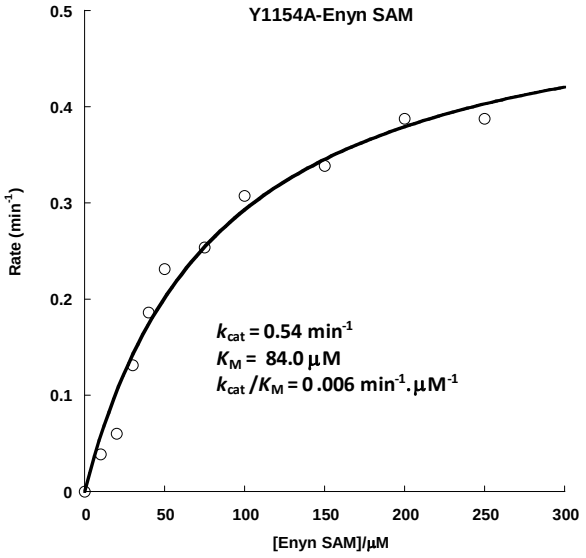
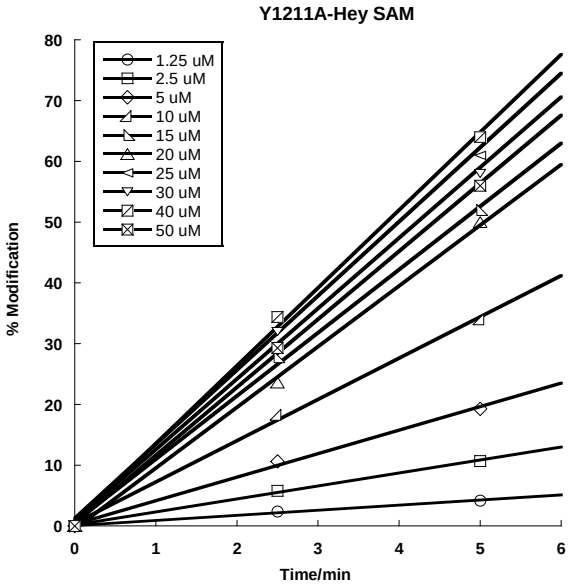
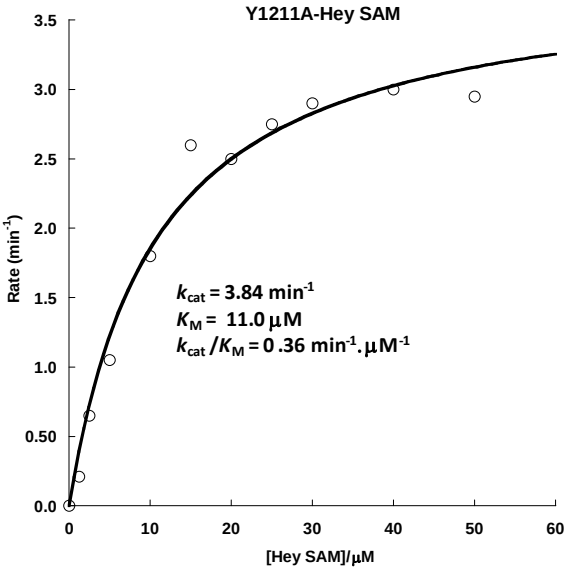
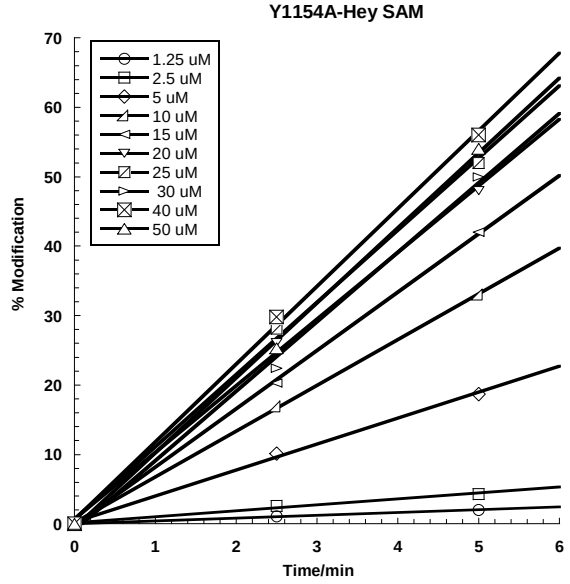


Figure S8 continued. In the following figures, 1 μM of Y1211A and Y1154A mutants were used with Hey-SAM **6** as a cofactor.







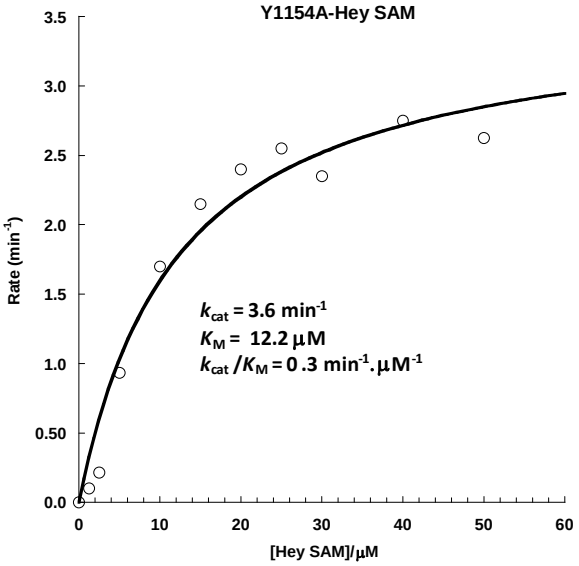
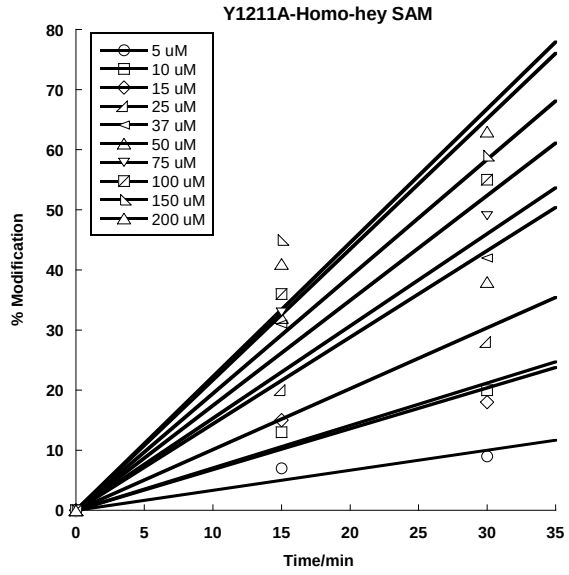
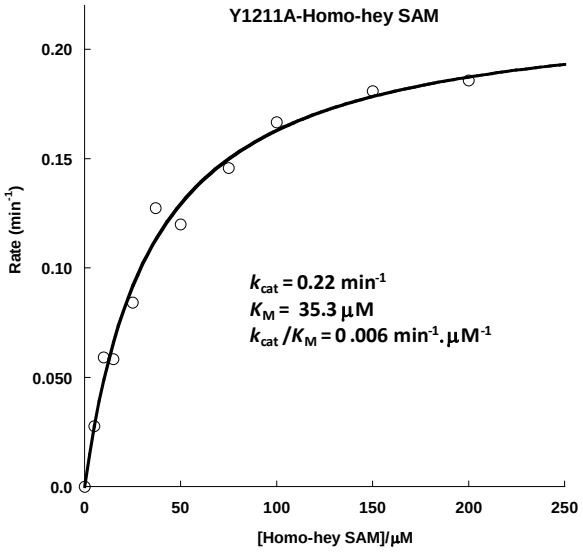
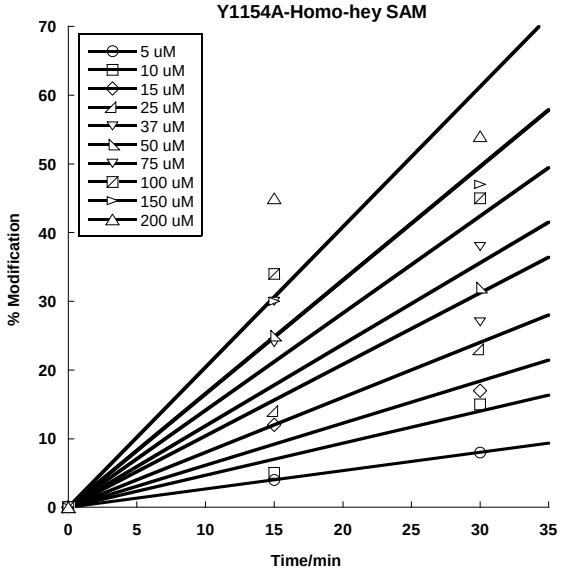


Figure S8 continued. In the following figures, 3 μM of Y1211A and Y1154A mutants were used with SAM analogue **7** as a cofactor.







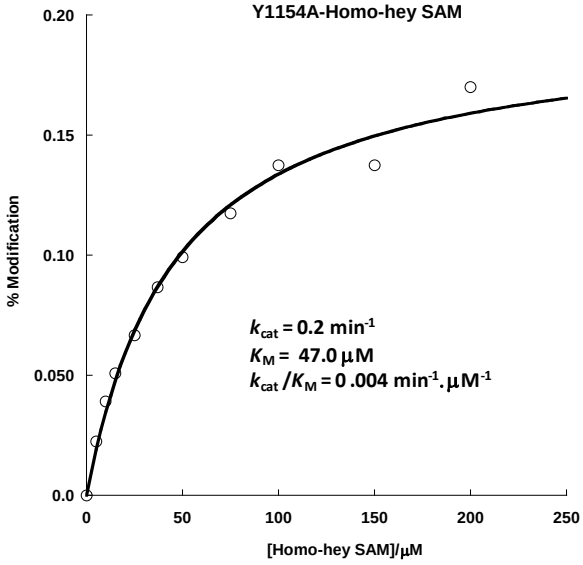
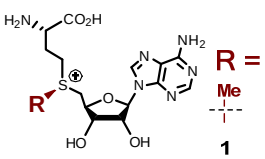


Figure S9. Steady-state kinetic analysis of native EuHMT1/2 and Y1211A/Y1154A mutants with SAM **1** and its analogues **2–7** as cofactors. Apparent k_{cat} and K_m of native EuHMT1/2 and the most promiscuous Y1211A/Y1154A variants on **1**–**7** were obtained with the fixed concentration of H3K9 peptide substrate (25 μM) and the varied concentration of cofactors.



	1	**2**	**3**	**4**	**5**	**6**	**7**
Native EuHMT1	k_{cat}=2.0 K_m=3.1 k_{cat}/K_m=0.64	k_{cat}=0.53 K_m=55 k_{cat}/K_m=0.010	–	–	–	–	–
EuHMT1 Y1211A	k_{cat}=0.10 K_m=36 k_{cat}/K_m=0.003	k_{cat}=1.0 K_m=33 k_{cat}/K_m=0.03	k_{cat}=9.1 K_m=13 k_{cat}/K_m=0.69	k_{cat}=3.5 K_m=7.8 k_{cat}/K_m=0.45	k_{cat}=0.36 K_m=41 k_{cat}/K_m=0.009	k_{cat}=3.8 K_m=11 k_{cat}/K_m=0.36	k_{cat}=0.22 K_m=35 k_{cat}/K_m=0.006
Native EuHMT2	k_{cat}=2.6 K_m=4.0 k_{cat}/K_m=0.64	k_{cat}=0.15 K_m=68 k_{cat}/K_m=0.002	–	–	–	–	–
EuHMT2 Y1154A	k_{cat}=0.08 K_m=39 k_{cat}/K_m=0.002	k_{cat}=1.1 K_m=32 k_{cat}/K_m=0.034	k_{cat}=7.4 K_m=16 k_{cat}/K_m=0.46	k_{cat}=4.9 K_m=16 k_{cat}/K_m=0.32	k_{cat}=0.54 K_m=84 k_{cat}/K_m=0.006	k_{cat}=3.6 K_m=12 k_{cat}/K_m=0.30	k_{cat}=0.20 K_m=46 k_{cat}/K_m=0.004

k_{cat} is expressed in min^{-1} and K_m is in μM.

Figure S10. Labeling of proteome-wide substrates of EuHMT1/2. (**A**) Visualization of putative substrates of EuHMT1/2 via in-gel fluorescence. Lysates of 40 μg from the empty-vector-transfected cells (control) and EuHMT1/2 mutants-transfected cells were subject to enzymatic modification with Hey-SAM **6** followed by in-gel fluorescence visualization. **(B)** Coomassie staining of the SDS-PAGE showed that equal amount of proteins was loaded. **(C)** Heat-map analysis of EuHMT-1/2's targets revealed by BPPM. The substrates are organized on the basis of their MS score with a range of ≥2 and ≤100 (see table S2-S4). The proteins with score < 2 were excluded and with score >100 were normalized to 100.

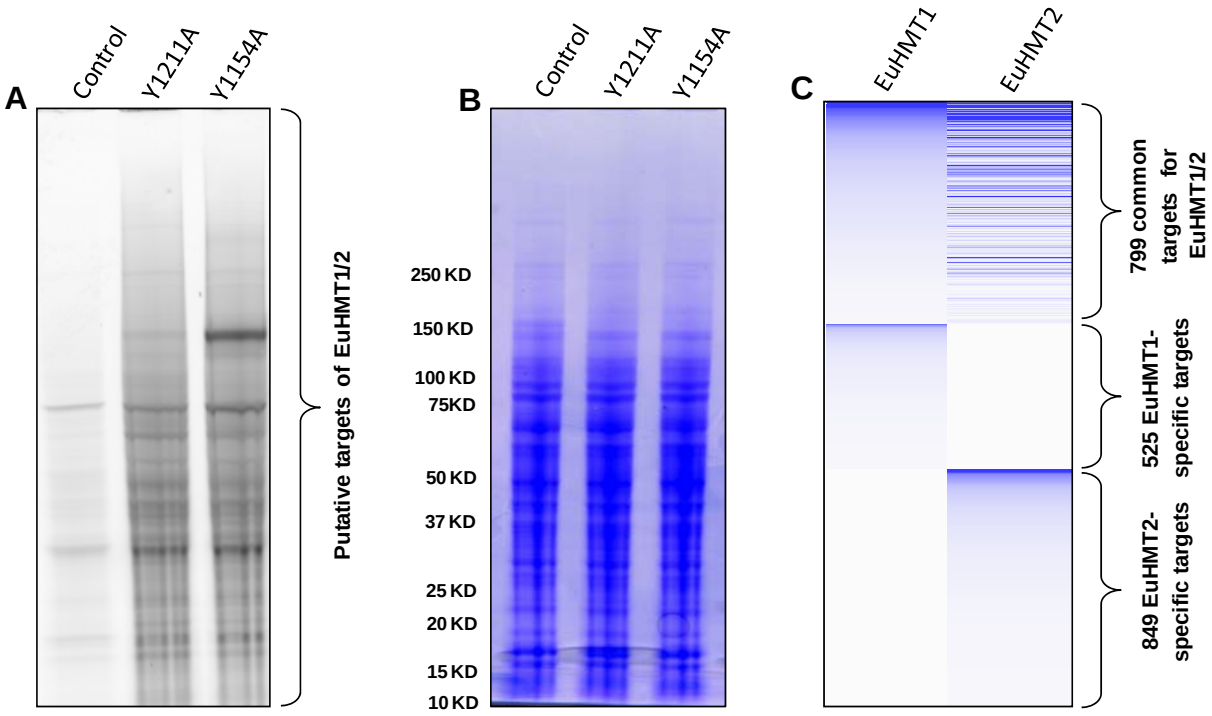


Figure S11. Demonstration of *in vitro* methylation activities of EuHTM1/2 using the native enzyme-cofactor pairs (EuHTM1/2 and 3H-SAM) via autoradiography assay. Examined were a panel of BPPM-revealed, commercially available non-histone substrates of EuHMT1/2: TARS, threonyl-tRNA synthetase (IPI00329633.5); ACLY, ATP citrate synthase/lyase (IPI00021290.5); IDH1, soluble isocitrate dehydrogenase 1 (NADP+, IPI01015385.1); PRMT5, protein arginine N-methyltransferase 5 (IPI00064328.3); EEF1A1, eukaryotic translation elongation factor 1 alpha 1 (IPI00940393.3); POLR2A, DNA-directed RNA polymerase II subunit RPB1 (IPI00031627.4, in the current study C-terminal domain was used); HAT1, histone acetyltransferase 1; PARP1, poly-[ADP-ribose] polymerase 1 (IPI00449049.5); PKIM1/2, pyruvate kinase isozymes M1/M2 (IPI00220644.8); HNRPK, heterogeneous nuclear ribonucleoprotein K (IPI00216049.1).

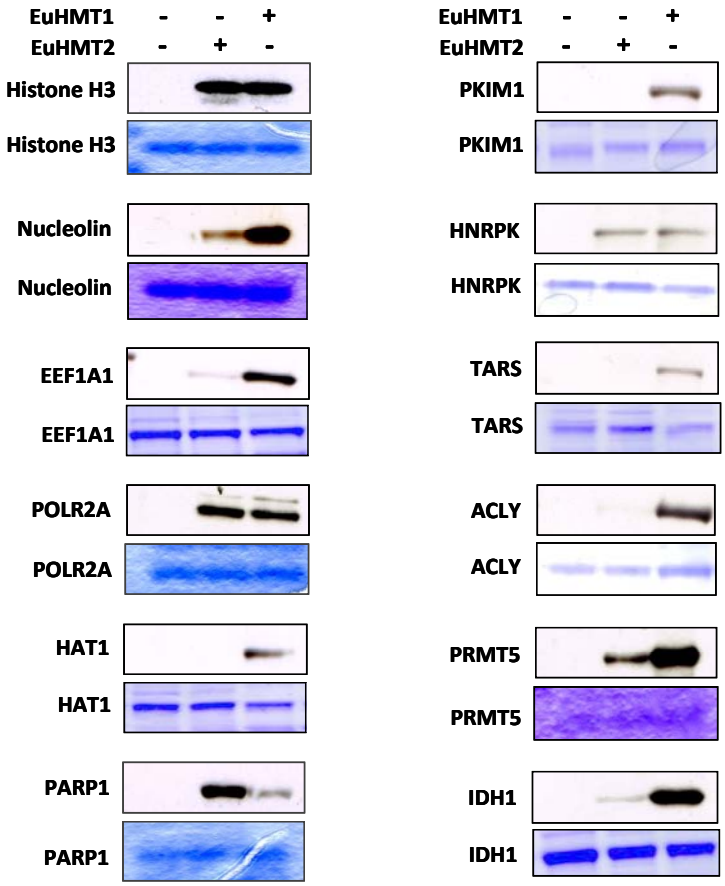


Figure S12. Functional annotation of EuHMT1/2's nonhistone targets. (**A**) Subcellular localization of the BPPM-revealed EuHMT1/2 substrates of high confidence (present in the mutant- but not in empty vector-transfected cells) analyzed by Proteome Discover software. (**B**) Cellular and molecular functions of EuHMT1/2 substrates of high confidence analyzed by IPA. (**C**) Physiological functions of the BPPM-revealed EuHMT1/2 substrates of high confidence.

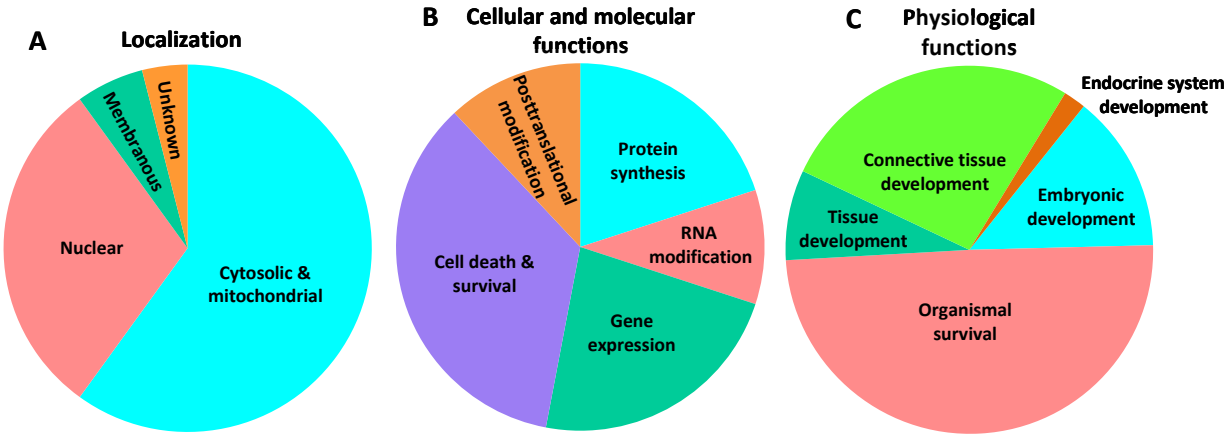


Figure S13. Proposed model to accommodate bulky SAM analogues by removing the conserved gatekeeper Tyr. (B-D) Proposed transition states (TS) of native EuHMT1 and its Y1211A with H3K9 substrate and SAM/SAM analogue cofactors.

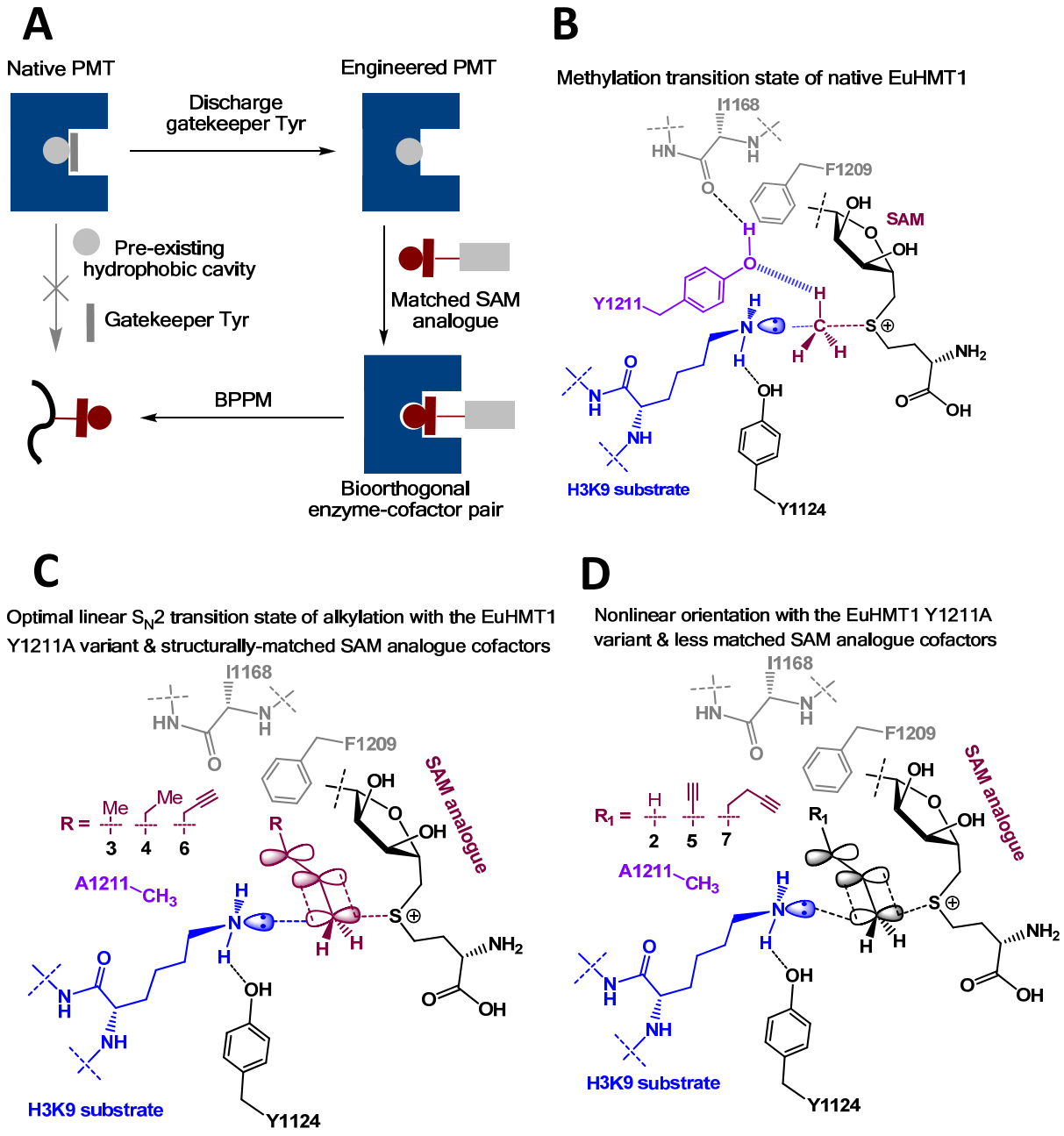


Figure S14. Structure-based multiple sequence alignment of representative SET-domain-containing PMTs. Identical residues, highly similar, and similar residues are highlighted in red, green, and blue, respectively. Secondary structure elements of human EuHMT1 are assigned by the PROCHECK program (S14) and shown above the aligned sequences. Here the helices are designed as cylinders and the strands as arrow bars. The highly-conserved gatekeeper tyrosine is marked with a green triangle and the residues to form the nearby hydrophobic cavity (EuHMT1's I1168/N1169/H1170/F1209/F1215/W1216 residues as an example) are marked with asterisks. The hydrophobic residues corresponding to F1215/W1216 are shown in blue boxes.

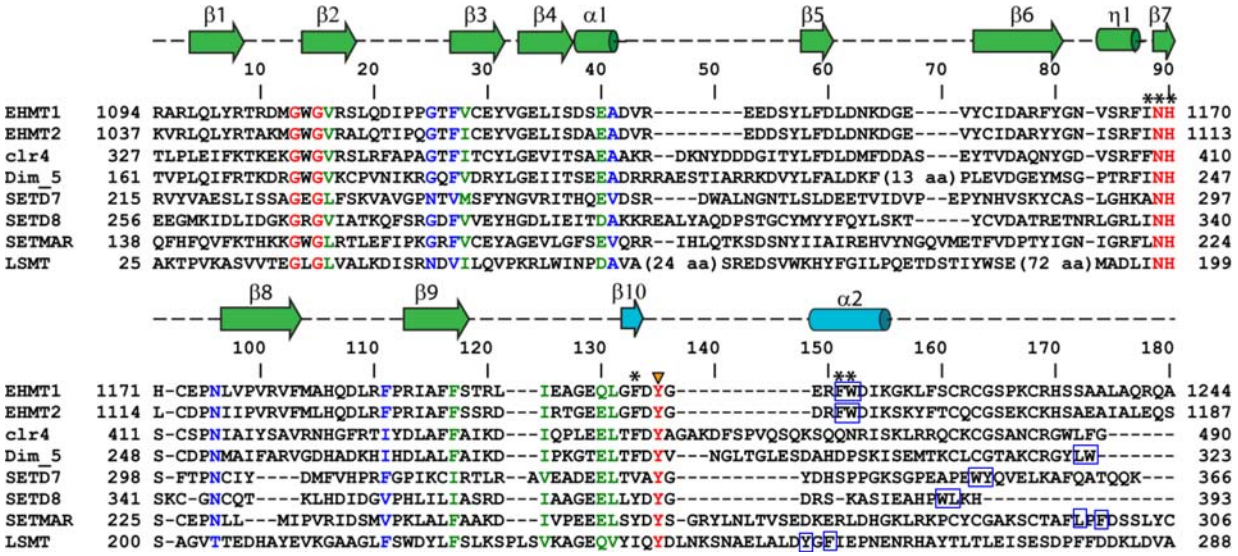


Table S1. Crystallographic data and refinement statistics.

	Y1211A+ H3K9(allyl)
PDB Code	4H4H
Data collection	
Space group	$P2_12_12_1$
Cell dimensions	
a, *b*, *c* (Å)	83.50, 83.80, 95.05
α, β, γ (°)	90, 90, 90
Resolution (Å) (highest resolution shell)	50.00-1.90 (1.95-1.90)
R_{merge}	7.2 (56.1)
$I/\sigma I$	31.6 (2.2)
Completeness(%)	98.6 (83.0)
Redundancy	7.9 (5.2)
Refinement	
Resolution (Å)	50.00-1.90
No. reflections	50,279
R_{work}/ R_{free}	0.179/0.224
No. atoms	
Protein	4,334
Cofactor	52
Water	518
Peptide	118
B-factors (Å^2)	30.4
Protein	18.9
Cofactor	24.9
Peptide	27.7
Water	27.0
RMSD	
Bond lengths (Å)	0.008
Bond angles (º)	1.145
Ramachandran plot % residues	
Favored	98.0
Additional allowed	2.0
Generously allowed	None
Disallowed	None

Table S2. BPPM-revealed potential nonhistone targets of EuHMT1 in HEK293T cells with the EuHMT1-Y1211A mutant and Hey-SAM **6** as BPPM reagents. These proteins are not present in the control (empty-vector transfected HEK293T cells).

Serial	Accession	Description	Score of EuHMT1
1	IPI00376215.2	Isoform 2 of DNA-dependent protein kinase catalytic subunit	208.3085556
2	IPI00793119.2	cDNA FLJ56274, highly similar to Transketolase	79.90027404
3	IPI00218319.3	Isoform 2 of Tropomyosin alpha-3 chain	70.50005794
4	IPI00007423.1	Isoform 1 of Acidic leucine-rich nuclear phosphoprotein 32 family member B	63.75586653
5	IPI00419373.1	Isoform 1 of Heterogeneous nuclear ribonucleoprotein A3	56.75522494
6	IPI00640006.1	rab GDP dissociation inhibitor beta isoform 2	53.96958017
7	IPI00965327.1	succinate dehydrogenase complex, subunit A, flavoprotein (Fp)	52.61379075
8	IPI00419880.6	40S ribosomal protein S3a	48.47704196
9	IPI00513955.1	cDNA FLJ55283, moderately similar to Protein mago nashi homolog	45.6518743
10	IPI00419258.4	High mobility group protein B1	43.15532923
11	IPI00219097.4	High mobility group protein B2	38.17082167
12	IPI00032158.3	Isoform 2 of N-alpha-acetyltransferase 15, NatA auxiliary subunit	37.94827914
13	IPI01015565.1	ubiquitin C	33.89626837
14	IPI00552715.1	T-complex protein 1 subunit gamma isoform c	33.83686447
15	IPI00375127.4	eukaryotic translation initiation factor 4H	33.41157961
16	IPI00552190.1	Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 10	32.44333482
17	IPI00007797.3	Fatty acid-binding protein, epidermal	32.30974603
18	IPI00788942.1	Isoform 2 of RuvB-like 1	28.92567086
19	IPI00414696.1	Isoform A2 of Heterogeneous nuclear ribonucleoproteins A2/B1	28.35218573
20	IPI00018534.4	Histone H2B type 1-L	26.84758949
21	IPI00783118.2	5'-nucleotidase domain-containing protein 2 isoform 1	26.36745024
22	IPI00032140.4	Serpin H1	26.17618561
23	IPI00915869.3	malate dehydrogenase, cytoplasmic isoform 3	26.06665564
24	IPI01011970.1	phosphogluconate dehydrogenase	25.76162124
25	IPI01015355.1	aconitase 2, mitochondrial	25.55280709
26	IPI00984060.1	glutathione S-transferase Mu 2 isoform 2	25.12881255
27	IPI00980749.1	heat shock 70kDa protein 8	24.39236546
28	IPI00885057.1	Isoform 2 of Cysteine and histidine-rich domain-containing protein 1	24.32220984
29	IPI00909453.2	heat shock 27kDa protein 1	24.1226244
30	IPI01011083.1	cDNA FLJ55960, highly similar to Protein transport protein Sec23A	23.34211493
31	IPI00926815.1	ribosomal protein L37a	23.03368974
32	IPI00293305.4	Isoform Beta-1B of Integrin beta-1	22.0308578
33	IPI00793677.1	chromosome 21 open reading frame 33	21.87474656
34	IPI00815732.1	Isoform 2 of Multifunctional protein ADE2	21.49055624
35	IPI00027485.3	Eukaryotic translation initiation factor 4E	21.47505403
36	IPI00937278.2	26S proteasome non-ATPase regulatory subunit 8	21.38628244
37	IPI00945233.1	mitochondrial 2-oxoglutarate/malate carrier protein isoform 2	21.03095818
38	IPI00916818.1	Phosphoglycerate kinase	20.46259642
39	IPI00023086.3	39S ribosomal protein L15, mitochondrial	20.1815536
40	IPI00219065.2	Isoform 5 of Glycogen debranching enzyme	19.81091595
41	IPI00294159.3	Tricarboxylate transport protein, mitochondrial	19.68325853
42	IPI00984887.1	ribosomal protein S3	19.53965378
43	IPI00470674.5	NADH-cytochrome b5 reductase 1	19.51842237
44	IPI01011090.1	lactate dehydrogenase B	19.31844187
45	IPI00023530.7	Cyclin-dependent kinase 5	19.30037332
46	IPI00215884.4	Isoform ASF-1 of Serine/arginine-rich splicing factor 1	17.89297962

47	IPI00019927.2	26S proteasome non-ATPase regulatory subunit 7	17.84248114
48	IPI01015264.1	eukaryotic translation initiation factor 2B, subunit 1 alpha, 26kDa	17.81041503
49	IPI01013355.1	cDNA FLJ54349, highly similar to Vesicle-fusing ATPase	17.5288763
50	IPI00976247.1	peptidyl-prolyl cis-trans isomerase A-like, partial	17.42233348
51	IPI00386751.2	Isoform 2 of HD domain-containing protein 2	17.40248156
52	IPI00978313.2	cDNA FLJ53638, highly similar to Annexin A6	17.3944788
53	IPI00719549.2	RBM14-RBM4 protein isoform 1	17.1049633
54	IPI00217168.1	Isoform ZK of Plasma membrane calcium-transporting ATPase 4	16.99586105
55	IPI00015905.1	Exosome complex component RRP4	16.95224094
56	IPI00927114.1	ras homolog family member A	16.75960922
57	IPI00291922.2	Proteasome subunit alpha type-5	16.51718521
58	IPI00032955.1	Isoform 1 of RING finger protein 114	16.17715096
59	IPI00910270.1	PITH (C-terminal proteasome-interacting domain of thioredoxin-like) domain co	16.03422451
60	IPI00554742.3	Isoform 2 of Apoptosis inhibitor 5	15.79603648
61	IPI00411816.3	39S ribosomal protein L2, mitochondrial	15.5231719
62	IPI00011274.3	Isoform 1 of Heterogeneous nuclear ribonucleoprotein D-like	15.15570092
63	IPI00419802.4	Isoform 1 of 3-hydroxyisobutyryl-CoA hydrolase, mitochondrial	15.12682176
64	IPI00748145.2	Isoform 1 of Guanine nucleotide-binding protein G(i) subunit alpha-2	15.10663915
65	IPI00745568.2	Isoform 1 of TIP41-like protein	14.99305558
66	IPI00022314.1	Superoxide dismutase [Mn], mitochondrial	14.97399402
67	IPI00026519.1	Peptidyl-prolyl cis-trans isomerase F, mitochondrial	14.72927189
68	IPI00974011.1	inositol(myo)-1(or 4)-monophosphatase 1	14.70692635
69	IPI00473085.3	Isoform 3 of Dynamin-1-like protein	14.49450064
70	IPI00013184.1	N-alpha-acetyltransferase 10, NatA catalytic subunit	14.38066006
71	IPI00643459.1	mitochondrial ribosomal protein S16	14.00365901
72	IPI00830052.9	heat shock 70kDa protein 1-like	13.92066193
73	IPI01012108.1	ubiquitin-conjugating enzyme E2D 4 (putative)	13.79680896
74	IPI00793137.2	Uncharacterized protein	13.71066475
75	IPI00879451.2	cDNA FLJ61051, highly similar to HpaII tinys locus 9c protein	13.69041753
76	IPI00924536.1	eukaryotic translation initiation factor 4A2	13.61659217
77	IPI00032823.1	Exosome complex component CSL4	13.57395387
78	IPI00940872.2	Titin, isoform CRA_a	13.55056572
79	IPI00791634.5	prohibitin	13.17864013
80	IPI00917733.1	cDNA FLJ10185 fis, clone HEMBA1004509, highly similar to U4/U6.U5 tri-snRNP-ass	13.05751348
81	IPI00797969.1	guanine nucleotide binding protein (G protein), beta polypeptide 2	12.9626801
82	IPI01011952.1	cDNA FLJ59659, highly similar to Vinculin	12.95064139
83	IPI00789842.3	zinc phosphodiesterase ELAC protein 2 isoform 3	12.88316751
84	IPI01013371.1	cDNA FLJ58569, highly similar to Nucleosome assembly protein 1-like 1	12.66269946
85	IPI00385834.3	Isoform 2 of KH domain-containing, RNA-binding, signal transduction-associate	12.61974573
86	IPI00024662.1	Chromobox protein homolog 5	12.54557896
87	IPI00015869.2	Trichohyalin	12.49780846
88	IPI00925126.1	protein kinase, cAMP-dependent, regulatory, type II, alpha	12.47497773
89	IPI01011589.1	cDNA FLJ10484 fis, clone NT2RP2000161, highly similar to Exosome complex exonu	12.44991589
90	IPI01010049.1	ubiquitin specific peptidase 28	12.18280959
91	IPI00384122.5	cDNA FLJ55034, highly similar to Dihydrolipoyllysine-residue succinyltransferase	12.10097122
92	IPI00470503.2	Isoform 3 of Inorganic pyrophosphatase 2, mitochondrial	11.5182457
93	IPI00909437.1	Ribosomal protein L15	11.42085123
94	IPI00643324.1	Four and a half LIM domains 1	11.34323096

95	IPI01011965.1	Iron regulatory protein 1	11.27859068
96	IPI00892863.1	Isoform 2 of Collagen alpha-5(VI) chain	11.220891
97	IPI00978728.1	NADH dehydrogenase (ubiquinone) flavoprotein 1, 51kDa	11.14177203
98	IPI00059718.3	TRMT61A protein (Fragment)	11.04034781
99	IPI00946597.1	acylglycerol kinase	10.86086345
100	IPI01011463.1	cDNA FLJ40890 fis, clone UTERU2001024, highly similar to SPLICING FACTOR, ARGIN	10.85630155
101	IPI00186460.7	Isoform 1 of Collagen alpha-1(II) chain	10.79398465
102	IPI00793985.2	N(alpha)-acetyltransferase 50, NatE catalytic subunit	10.7655735
103	IPI00413214.3	importin subunit alpha-6	10.75346398
104	IPI00910176.1	cDNA FLJ57995, moderately similar to Ubiquitin-conjugating enzyme E2-25 kDa	10.74681306
105	IPI00976899.1	ribosomal protein L8	10.72774029
106	IPI00978608.1	cold shock domain containing E1, RNA-binding	10.65494323
107	IPI00915872.2	Trinucleotide repeat containing 6B (Fragment)	10.33702445
108	IPI00217519.3	Ras-related protein Ral-A	10.23424554
109	IPI00384061.2	Isoform 5 of Methyltransferase-like protein 13	10.20179272
110	IPI00983162.1	poly(A) binding protein, cytoplasmic 1	10.14514899
111	IPI00879783.1	metastasis associated 1 family, member 3	10.06823587
112	IPI01015038.1	T-complex protein 1 subunit delta	9.967740536
113	IPI00073779.1	Isoform 1 of 28S ribosomal protein S35, mitochondrial	9.904862165
114	IPI00005707.7	C-type mannose receptor 2	9.816804647
115	IPI00022316.3	28S ribosomal protein S18b, mitochondrial	9.807150364
116	IPI00016077.1	Protein NipSnap homolog 2	9.705330372
117	IPI00165393.1	Acidic leucine-rich nuclear phosphoprotein 32 family member E	9.69942975
118	IPI00910437.1	cDNA FLJ52417, highly similar to 3'(2'),5'-bisphosphate nucleotidase 1	9.686202049
119	IPI01009205.1	RAD23 homolog B (S. cerevisiae)	9.626133442
120	IPI00643915.1	Peptidyl-prolyl cis-trans isomerase	9.595445633
121	IPI00301518.6	Isoform 1 of Mps one binder kinase activator-like 1B	9.466370106
122	IPI01011967.1	cDNA FLJ54535, highly similar to Ribosomal protein S6 kinase alpha-1	9.457336903
123	IPI00910255.1	tRNA-yW synthesizing protein 3 homolog (S. cerevisiae)	9.457071781
124	IPI00798272.2	branched-chain-amino-acid aminotransferase, cytosolic isoform 2	9.186050892
125	IPI01015230.1	cDNA FLJ53354, highly similar to Puromycin-sensitive aminopeptidase	9.174034595
126	IPI01010261.1	cDNA FLJ30173 fis, clone BRACE2000969, highly similar to 6-phosphofructokinase,	9.135075808
127	IPI00922039.1	cDNA FLJ57628, highly similar to Homo sapiens membrane-associated ring finge	9.084560871
128	IPI00646978.4	lysophospholipase II	9.084253073
129	IPI00027096.2	39S ribosomal protein L19, mitochondrial	9.016253471
130	IPI00908791.2	L-lactate dehydrogenase	8.970396996
131	IPI01014610.1	tRNA methyltransferase 11-2 homolog (S. cerevisiae)	8.936521769
132	IPI00946498.1	stem-loop binding protein	8.920324326
133	IPI00643370.1	Tropomyosin 3	8.840212822
134	IPI00926959.1	asparagine synthetase (glutamine-hydrolyzing)	8.833948374
135	IPI00980330.1	RAP2A, member of RAS oncogene family	8.804337502
136	IPI00304082.8	Isochorismatase domain-containing protein 1	8.798935413
137	IPI00297089.4	A-kinase anchor protein 6	8.718411922
138	IPI00553138.4	Vesicle-associated membrane protein 2	8.685631752
139	IPI00643317.3	high mobility group box 3	8.609049082
140	IPI00399375.2	Isoform 2 of Thymocyte nuclear protein 1	8.576127291

141	IPI01011917.1	prohibitin 2	8.569286823
142	IPI00180128.4	Isoform 2 of Basic leucine zipper and W2 domain-containing protein 1	8.532663822
143	IPI00642864.2	Isoform 2 of FAD synthase	8.518769503
144	IPI01015433.1	Glutamate dehydrogenase	8.490028381
145	IPI01015600.1	CIP29 protein	8.445426226
146	IPI00893470.2	diffuse panbronchiolitis critical region 1	8.3966887
147	IPI00942050.2	Major histocompatibility complex, class I, C	8.314289093
148	IPI00383078.5	melanoma antigen family D, 1	8.299733639
149	IPI00016346.2	Proline synthetase co-transcribed homolog (Bacterial), isoform CRA_b	8.297941685
150	IPI00219421.3	Isoform 2 of Ephrin type-B receptor 2	8.289919376
151	IPI00914971.1	farnesyl pyrophosphate synthase isoform b	8.275914669
152	IPI00455457.4	Histone H3	8.2287395
153	IPI00647504.2	Isoform 2 of Protein FAM184A	8.141638517
154	IPI00000335.1	Histidine triad nucleotide-binding protein 2, mitochondrial	8.135605812
155	IPI00305887.1	Kinetochore protein Nuf2	8.077617884
156	IPI00940685.1	U5 small nuclear ribonucleoprotein 40 kDa protein	8.068724632
157	IPI00290184.4	tRNA (guanine-N(7)-)-methyltransferase	8.065582037
158	IPI00963822.1	septin 11	8.061227322
159	IPI00967259.1	glucosamine-6-phosphate deaminase 1	8.058110237
160	IPI00000940.1	Parathyroid hormone	8.038056374
161	IPI00784990.2	Ubiquitin C splice variant	8.036742687
162	IPI00012535.1	DnaJ homolog subfamily A member 1	8.005677223
163	IPI00219613.6	cDNA FLJ54537, highly similar to Homo sapiens pitrilysin metallopeptidase 1 (PI	8.003607035
164	IPI00012369.1	Mitotic spindle assembly checkpoint protein MAD2A	7.727428675
165	IPI00552360.2	Isoform 1 of Fumarylacetoacetate hydrolase domain-containing protein 1	7.611097336
166	IPI00012491.2	Heat-stable enterotoxin receptor	7.599328995
167	IPI00911081.2	glutaryl-CoA dehydrogenase	7.570792198
168	IPI00936634.1	Isoform 3 of SH2 domain-containing protein 2A	7.549822807
169	IPI00302176.5	Isoform 1 of H/ACA ribonucleoprotein complex subunit 1	7.544974566
170	IPI00400975.1	Conserved hypothetical protein	7.460657597
171	IPI00329352.4	Nodal modulator 1	7.442754984
172	IPI00935307.2	diaphanous homolog 1 (Drosophila)	7.417745352
173	IPI00514944.5	Uroporphyrinogen decarboxylase	7.410956621
174	IPI01014611.1	cDNA, FLJ79139, highly similar to Alkyldihydroxyacetonephosphate synthase, per	7.407764673
175	IPI01009451.1	MYC-associated zinc finger protein (purine-binding transcription factor)	7.374407053
176	IPI00908803.1	cDNA FLJ59584, highly similar to Mitochondrial-processing peptidase alpha subu	7.355117321
177	IPI01013039.1	proteasome (prosome, macropain) 26S subunit, non-ATPase, 9	7.351754189
178	IPI00302673.3	ATP synthase mitochondrial F1 complex assembly factor 1	7.347349405
179	IPI01008914.1	eukaryotic initiation factor 4A-I isoform 2	7.327119589
180	IPI00903226.1	cDNA FLJ46359 fis, clone TESTI4049786, highly similar to Hexokinase-1	7.286429644
181	IPI00749044.2	Similar to IQ motif and Sec7 domain 3	7.284358501
182	IPI01011924.1	ubiquitin specific peptidase 7 (herpes virus-associated)	7.239362478
183	IPI00219793.1	Isoform 2 of Suppressor of SWI4 1 homolog	7.234596014
184	IPI00001618.2	Ras-related protein Rab-39A	7.229089737
185	IPI00005573.3	Isoform 1 of 5'(3')-deoxyribonucleotidase, cytosolic type	7.172768831
186	IPI00940894.1	DNA polymerase	7.069058895
187	IPI00556204.1	Eukaryotic translation elongation factor 1 alpha 2 variant (Fragment)	7.016174316

188	IPI00552198.1	Phosphoprotein enriched in astrocytes 15	7.014993906
189	IPI00877618.1	mercaptopyruvate sulfurtransferase	7.01315403
190	IPI00177965.5	5'-nucleotidase domain-containing protein 1	7.002598286
191	IPI00019385.4	Translocon-associated protein subunit delta	6.980569601
192	IPI00646415.1	20 kDa protein	6.970712662
193	IPI00020771.3	microtubule-associated protein 7	6.955245972
194	IPI00043678.3	dedicator of cytokinesis 7	6.885029078
195	IPI00646459.1	Nuclear autoantigenic sperm protein	6.882386684
196	IPI00645630.2	enoyl-CoA hydratase domain-containing protein 1 isoform 3	6.879080772
197	IPI01009725.1	cDNA FLJ58302, highly similar to Importin-4	6.818561792
198	IPI00789806.2	Isoform 2 of Cytosol aminopeptidase	6.78508997
199	IPI00910150.1	cDNA FLJ60107, highly similar to DNA replication complex GINS protein PSF1	6.754507303
200	IPI00925176.1	trafficking protein, kinesin binding 1	6.746781588
201	IPI00743775.1	Isoform 2 of Coiled-coil domain-containing protein 47	6.72347331
202	IPI00010157.1	S-adenosylmethionine synthase isoform type-2	6.712624788
203	IPI00171844.3	COP9 signalosome complex subunit 4	6.679496765
204	IPI00549307.3	Isoform 3 of MOSC domain-containing protein 1, mitochondrial	6.634622574
205	IPI00157928.2	maleylacetoacetate isomerase isoform 2	6.594398022
206	IPI00894205.2	protein NipSnap homolog 1 isoform 2	6.587986231
207	IPI00922265.1	Isoform 1 of Membrane magnesium transporter 1	6.58423233
208	IPI00645291.1	Isoform 2 of Phosphoribosyltransferase domain-containing protein 1	6.583433151
209	IPI00296999.9	ATP synthase mitochondrial F1 complex assembly factor 2	6.480558157
210	IPI00292168.3	Histone chaperone ASF1A	6.463583946
211	IPI00291093.3	DNA-directed RNA polymerases I, II, and III subunit RPABC1	6.424916029
212	IPI00447177.1	Antigen MLAA-23	6.394483566
213	IPI00744932.1	Similar to Zinc finger, DHHC-type containing 1	6.381577492
214	IPI01013870.1	N(alpha)-acetyltransferase 40, NatD catalytic subunit, homolog (S. cerevisiae)	6.381153107
215	IPI00878669.2	chromobox homolog 1	6.380673409
216	IPI00007676.3	Estradiol 17-beta-dehydrogenase 12 (present in G9a with azido)	6.362389326
217	IPI00797738.1	Cytochrome c oxidase subunit 6B1	6.351295471
218	IPI00221222.7	Activated RNA polymerase II transcriptional coactivator p15	6.34903574
219	IPI00908651.1	cDNA FLJ57726, highly similar to Heterogeneous nuclear ribonucleoprotein H3	6.290336847
220	IPI00552365.7	EF-hand domain family, member D2	6.279866457
221	IPI00004454.3	Isoform 1 of Dolichol-phosphate mannosyltransferase subunit 3	6.272236586
222	IPI00936328.2	MARCKS-related protein-like, partial	6.246054411
223	IPI01013456.1	lactate dehydrogenase A	6.22026968
224	IPI00023748.3	Nascent polypeptide-associated complex subunit alpha	6.20839119
225	IPI00964587.1	DTW domain containing 2	6.206987619
226	IPI00013946.1	Synaptogyrin-2	6.194886208
227	IPI00514049.1	Cytidine monophosphate (UMP-CMP) kinase 1, cytosolic	6.14833951
228	IPI00797616.2	Isoform 3 of BRCA1-associated ATM activator 1	6.118052006
229	IPI00024524.4	RNA-binding protein PNO1	6.095901728
230	IPI01015706.1	tumor protein, translationally-controlled 1	6.084853888
231	IPI00916572.1	ribosomal protein L31	6.073718309
232	IPI00644020.1	Sterol O-acyltransferase 1	6.061112404
233	IPI00513717.3	Isoform 2 of Chromodomain-helicase-DNA-binding protein 6	6.06077528
234	IPI00031032.1	Musculin	6.05892539

235	IPI00917386.1	Sjogren syndrome antigen B (autoantigen La)	6.055042982
236	IPI00908843.1	cDNA FLJ53857, highly similar to Interferon-induced protein with tetratricopeptid	5.990872145
237	IPI00006408.4	Nitric oxide synthase-interacting protein	5.941011667
238	IPI00294486.1	Dual specificity protein phosphatase 9	5.81464982
239	IPI00063903.5	Up-regulated during skeletal muscle growth protein 5	5.796951056
240	IPI01011610.1	cDNA FLJ51181, highly similar to 7-dehydrocholesterol reductase	5.796531439
241	IPI00470515.7	chromosome 1 open reading frame 173	5.771541834
242	IPI01015586.1	glucosamine (N-acetyl)-6-sulfatase	5.769265652
243	IPI00889171.1	Isoform 2 of Junction-mediating and -regulatory protein	5.738581657
245	IPI00007019.1	Peptidyl-prolyl cis-trans isomerase-like 1	5.570055485
246	IPI00011898.3	Translation initiation factor eIF-2B subunit epsilon	5.532426834
247	IPI00008437.7	Probable ribosome biogenesis protein RLP24	5.482391119
248	IPI01011224.1	REX2, RNA exonuclease 2 homolog (S. cerevisiae)	5.463126659
249	IPI01015916.1	RNA-binding region (RNP1, RRM) containing 2, isoform CRA_b	5.447995663
250	IPI00643288.1	Pyrophosphatase (Inorganic) 1	5.435631037
251	IPI00980505.1	copper chaperone for superoxide dismutase	5.379751444
252	IPI00514094.3	serine/threonine kinase 32C	5.335237026
253	IPI00018691.1	Isoform 1 of 28S ribosomal protein S18a, mitochondrial	5.301540852
254	IPI00017972.3	Zinc finger protein 703	5.284733772
255	IPI01009339.1	paraspeckle component 1	5.243271112
256	IPI00008436.4	DNA polymerase epsilon subunit 4	5.213436604
257	IPI00513941.3	SAR1 homolog A (S. cerevisiae)	5.192499161
258	IPI01010811.1	ATP synthase, H+ transporting, mitochondrial Fo complex, subunit F2	5.147957802
259	IPI01014702.1	isovaleryl-CoA dehydrogenase	5.099872589
260	IPI00643597.2	Isoform 2 of Transmembrane channel-like protein 2	5.091242552
261	IPI00982452.1	sortilin-related receptor, L(DLR class) A repeats containing	5.085541248
262	IPI00909685.1	cDNA FLJ58965, highly similar to Nonspecific lipid-transfer protein	5.044857502
263	IPI00027729.1	Casein kinase I isoform epsilon	5.033119917
264	IPI00985162.1	nucleoporin 160kDa	4.960441113
265	IPI00926401.1	N-acylaminoacyl-peptide hydrolase	4.955853939
266	IPI00645702.1	CTP synthase 2	4.95538187
267	IPI00646381.1	mitochondrial ribosomal protein L24	4.934664011
268	IPI00746752.2	Isoform C of Bromodomain and WD repeat-containing protein 1	4.899923325
269	IPI01010215.1	lysine (K)-specific demethylase 2B	4.898071289
270	IPI00640671.3	Isoform 2 of Protein fantom	4.881556988
271	IPI00244111.10	Isoform 3 of Type II inositol-1,4,5-trisphosphate 5-phosphatase	4.875109196
272	IPI00967388.1	ribosomal protein S3A	4.861042738
273	IPI00977873.1	cDNA FLJ61146, highly similar to Cellular nucleic acid-binding protein	4.855553627
274	IPI00014301.3	Oxidase (Cytochrome c) assembly 1-like	4.830379963
275	IPI00644993.1	AMT protein	4.754335403
276	IPI00978059.1	chromosome 11 open reading frame 83	4.688630581
277	IPI00642016.1	crystallin, zeta (quinone reductase)	4.556134224
278	IPI00926007.2	FLJ00144 protein (Fragment)	4.520941734
279	IPI00220358.1	Isoform 2 of Cas scaffolding protein family member 4	4.520151138
280	IPI01013546.1	Hydroxymethylbilane synthase	4.499036312
281	IPI00218946.2	Potassium/sodium hyperpolarization-activated cyclic nucleotide-gated channel	4.445723534
282	IPI00902977.1	Isoform 6 of Oxidation resistance protein 1	4.443925381

283	IPI00180408.8	Myosin-15	4.442148209
284	IPI00026516.1	Succinyl-CoA:3-ketoacid-coenzyme A transferase 1, mitochondrial	4.442061901
285	IPI00983321.1	SOGA family member 3	4.439264774
286	IPI01009113.1	polymerase (RNA) II (DNA directed) polypeptide A, 220kDa	4.437465191
287	IPI00946286.1	collagen alpha-3(VI) chain isoform 4 precursor	4.436850071
288	IPI01015357.1	ATP-binding cassette, sub-family B (MDR/TAP), member 9	4.430781841
289	IPI00032900.1	BolA-like protein 1	4.410545349
290	IPI01010160.1	UPP1 protein	4.40027523
291	IPI00061987.4	uncharacterized LOC113230	4.396100521
292	IPI00976931.1	apoptosis-inducing factor, mitochondrion-associated, 1	4.378081322
293	IPI00797067.2	U2 snRNP-specific A' protein	4.372718811
294	IPI00976917.1	hypothetical protein LOC144481 isoform 1	4.371304512
295	IPI00646919.1	transmembrane protein 38B	4.367688656
296	IPI00795241.1	Isoform 2 of Enolase-phosphatase E1	4.339342117
297	IPI00291669.3	Ubiquitin-like domain-containing CTD phosphatase 1	4.331799507
298	IPI00964697.1	adrenoceptor alpha 2C	4.331721783
299	IPI00926562.1	wingless-type MMTV integration site family, member 10A	4.290638924
300	IPI00929228.1	Isoform 2 of Tudor domain-containing protein 3	4.273125172
301	IPI00333126.1	Leucine-rich repeat-containing protein 56	4.271798134
302	IPI00965978.1	Uncharacterized protein	4.250235081
303	IPI00978253.1	indoleamine 2,3-dioxygenase 1	4.244541645
304	IPI00942036.1	centrosomal protein 170B	4.241065502
305	IPI00793594.1	mediator complex subunit 24	4.21948576
306	IPI00300408.3	Copper homeostasis protein cutC homolog	4.212116718
307	IPI00909705.1	cDNA FLJ57896, highly similar to Arylsulfatase A	4.211012363
308	IPI00978643.1	transmembrane protein 41B isoform 2	4.194047928
309	IPI00186395.11	Putative methyltransferase-like protein LOC121952	4.174588203
310	IPI01011139.1	golgi transport 1B	4.172591209
311	IPI00894231.1	CAP-GLY domain containing linker protein family, member 4	4.172104359
312	IPI00169400.1	Isoform 1 of 28S ribosomal protein S5, mitochondrial	4.169184685
313	IPI00925074.1	BC1 (ubiquinol-cytochrome c reductase) synthesis-like	4.164148331
314	IPI00418599.2	Arachidonate 5-lipoxygenase variant (Fragment)	4.131789207
315	IPI00220716.2	Isoform 2 of Putative RNA-binding protein 15	4.124369621
316	IPI00973891.1	NudC domain containing 2	4.124117374
317	IPI00847423.1	Similar to Hematopoietic signal peptide-containing isoform 1	4.120315075
318	IPI01012850.1	cDNA FLJ58265, highly similar to Ubiquitin-protein ligase BRE1B	4.11916256
319	IPI00976464.1	Sjogren syndrome/scleroderma autoantigen 1	4.115839005
320	IPI00796662.2	cDNA FLJ57580, highly similar to Zinc finger protein 485	4.115236282
321	IPI00009111.1	Trophoblast glycoprotein	4.105669975
322	IPI00908950.1	Ribosomal protein L18	4.073968887
323	IPI01014744.1	microsomal glutathione S-transferase 1	4.063024998
324	IPI00942440.2	cDNA FLJ53389, highly similar to Homo sapiens RAB GTPase activating protein 1 (	4.048054695
325	IPI00017630.6	Nuclear fragile X mental retardation-interacting protein 1	4.046810627
326	IPI00103471.3	Selenoprotein M	4.043367386
327	IPI00024976.5	Mitochondrial import receptor subunit TOM22 homolog	4.042171001
328	IPI00917391.1	Uncharacterized protein	4.041543961
329	IPI00785127.1	Gm127 (Fragment)	4.038759232

330	IPI00454905.4	cDNA FLJ42124 fis, clone TESTI2009477, weakly similar to TRICHOHYALIN	4.021264553
331	IPI00879096.1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, sul	4.01543808
332	IPI00973955.1	voltage-dependent anion channel 3	3.995401144
333	IPI00171123.4	GATA zinc finger domain-containing protein 1	3.985080719
334	IPI00947213.1	phosphoribosyl pyrophosphate synthetase 2	3.976323605
335	IPI00555927.2	nudix (nucleoside diphosphate linked moiety X)-type motif 6	3.956722021
336	IPI00910237.1	proteasome subunit beta type-5 isoform 2	3.952091217
337	IPI00976591.1	chromosome 8 open reading frame 82	3.939365864
338	IPI00925558.1	CCR4-NOT transcription complex, subunit 10	3.932148218
339	IPI00909361.1	solute carrier family 35, member F6	3.895539284
340	IPI00910780.1	cDNA FLJ56706, highly similar to Bcl-2 homologous antagonist/killer	3.895368576
341	IPI00884448.1	Isoform 1 of Zinc finger protein 862	3.870273113
342	IPI00947310.1	single-stranded DNA binding protein 1, mitochondrial	3.845179558
343	IPI00945908.1	nitrilase family, member 2	3.827937365
344	IPI00925482.1	cleavage and polyadenylation specific factor 4, 30kDa	3.797110558
345	IPI00217949.12	Ubiquitin-conjugating enzyme E2 S	3.775313377
346	IPI00647050.1	RNA 3'-terminal phosphate cyclase	3.746369123
347	IPI00014539.2	Homeobox protein Hox-B9	3.746046543
348	IPI01015921.1	cDNA FLJ55361, highly similar to Nucleolar protein 11	3.741353989
349	IPI00922900.1	cDNA FLJ50656, highly similar to Surfeit locus protein 4	3.731828213
350	IPI00978191.1	catenin (cadherin-associated protein), alpha 1, 102kDa	3.726494074
351	IPI00926978.1	solute carrier family 25 (carnitine/acylcarnitine translocase), member 20	3.700134039
352	IPI00329742.2	Fumarylacetoacetate hydrolase domain-containing protein 2A	3.688626528
353	IPI00927280.1	Sin3A-associated protein, 18kDa	3.676407814
354	IPI00555624.2	RAB3GAP1 protein	3.675404549
355	IPI00449201.2	Isoform 2 of Ubiquitin-like-conjugating enzyme ATG3	3.65760088
356	IPI00922359.1	Protein-L-isoaspartate O-methyltransferase	3.632962704
357	IPI00305423.6	Charged multivesicular body protein 6	3.618782759
358	IPI00909111.1	cDNA FLJ59179, highly similar to 39S ribosomal protein L9, mitochondrial	3.615469456
359	IPI00908627.1	cDNA FLJ59271, highly similar to Component of gems 4	3.610473156
360	IPI00984850.1	Activation-induced cytidine deaminase	3.605342865
361	IPI00031022.2	Heat shock protein, 110 kDa	3.593075514
362	IPI00006092.1	Phosphomannomutase 2	3.558265448
363	IPI00640997.1	isopentenyl-diphosphate delta isomerase 1	3.542179108
364	IPI00893179.1	X-ray repair complementing defective repair in Chinese hamster cells 6	3.53842473
365	IPI00983931.1	non-SMC condensin II complex, subunit D3	3.53430891
366	IPI00909384.1	cDNA FLJ53505, highly similar to Chaperone-activity of bc1 complex-like, mitocho	3.516098738
367	IPI01012335.1	TatD DNase domain containing 1	3.515783548
368	IPI00009466.9	coiled-coil-helix-coiled-coil-helix domain-containing protein 2, mitochondrial-li	3.490503073
369	IPI00926034.1	coiled-coil domain containing 12	3.489398479
370	IPI00645836.1	esterase D	3.473929644
371	IPI00792109.1	coiled-coil domain containing 43	3.465866327
372	IPI00964365.1	Annexin A5	3.459147692
373	IPI00909718.1	cDNA FLJ59809, highly similar to Bone marrow stromal antigen 2	3.450926065
374	IPI00009659.3	Regulation of nuclear pre-mRNA domain-containing protein 1B	3.447496653
375	IPI00028376.1	Mitochondrial import inner membrane translocase subunit Tim8 A	3.438120604
376	IPI00908328.1	cDNA FLJ51585, moderately similar to Homo sapiens spindle pole body compone	3.432426691

377	IPI00478062.2	transducin-like enhancer of split 2 (E(sp1) homolog, Drosophila)	3.425706387
378	IPI00964581.3	cDNA FLJ53827, highly similar to Speckle-type POZ protein	3.420134544
379	IPI00967045.1	basic transcription factor 3	3.417832136
380	IPI00001632.4	Isoform 2 of Uncharacterized protein KIAA1522	3.405859947
381	IPI00396617.1	cDNA FLJ11699 fis, clone HEMBA1005047, highly similar to RAS-RELATED PROTEIN F	3.378495932
382	IPI00412272.2	SH3 domain-binding glutamic acid-rich-like protein 2	3.369605064
383	IPI00384116.3	Isoform 2 of Phosphoenolpyruvate carboxykinase [GTP], mitochondrial	3.349629402
384	IPI01011706.1	Superoxide dismutase 1 (Fragment)	3.342024565
385	IPI00871391.3	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-	3.335588455
386	IPI00302674.3	coiled-coil domain containing 134	3.335077763
387	IPI00644866.1	cDNA FLJ12775 fis, clone NT2RP2001677	3.332522869
388	IPI00549413.2	Annexin A1	3.3319695
389	IPI00304163.5	cDNA FLJ57902, highly similar to Protein MYG1	3.321031094
390	IPI01018329.1	cDNA FLJ57316, highly similar to DNA mismatch repair protein Msh2	3.316637516
391	IPI00385751.6	cDNA FLJ52780, highly similar to Tissue alpha-L-fucosidase	3.296418428
392	IPI00965308.1	GTPase activating protein (SH3 domain) binding protein 2	3.28204298
393	IPI00161196.3	F-box/LRR-repeat protein 8	3.275252819
394	IPI00385021.1	ubiquinol-cytochrome c reductase complex chaperone	3.269675016
395	IPI01015633.1	ADP-ribosylation factor-like 6 interacting protein 1	3.264163017
396	IPI00903277.1	cDNA FLJ32474 fis, clone SKNMC2000593, highly similar to Tumor necrosis factor r	3.251574993
397	IPI00023939.1	Guanine nucleotide exchange factor MSS4	3.248258591
398	IPI00976381.1	casein kinase 1, alpha 1	3.242902279
399	IPI01011217.1	Full-length cDNA clone CS0DC001YO07 of Neuroblastoma of Homo sapiens	3.239886045
400	IPI00790053.1	RFT1 homolog (S. cerevisiae)	3.237701178
401	IPI00015806.3	Isoform 1 of General transcription factor 3C polypeptide 3	3.234821081
402	IPI01013001.1	G protein-coupled receptor 89C	3.234705448
403	IPI00925720.1	cleavage and polyadenylation specific factor 4, 30kDa	3.232334614
404	IPI00847495.2	cDNA FLJ55640, highly similar to Coiled-coil domain-containing protein 21	3.232254744
405	IPI00981963.1	FSHD region gene 1	3.232080936
406	IPI00892665.1	guanine nucleotide binding protein-like 1	3.211884499
407	IPI00903024.1	methylthioadenosine phosphorylase	3.206659317
408	IPI00852874.1	SEC13 homolog (S. cerevisiae)	3.198170185
409	IPI00640938.1	RNA binding protein, autoantigenic	3.198057652
410	IPI00027487.3	Creatine kinase M-type	3.193926573
411	IPI00879828.1	Isoform 2 of DIS3-like exonuclease 1	3.189982891
412	IPI00384120.1	Full-length cDNA 5-PRIME end of clone CS0DI052YD12 of Placenta of Homo sapier	3.184959173
413	IPI00332071.4	Isoform 1 of Tether containing UBX domain for GLUT4	3.180494785
414	IPI00940222.2	Isoform 3 of A-kinase anchor protein 12	3.180082798
415	IPI00917463.1	Isoform 3 of Ancient ubiquitous protein 1	3.17835784
416	IPI00217465.5	Histone H1.2	3.168960571
417	IPI00911013.1	cDNA FLJ57175, moderately similar to Pituitary tumor-transforming gene 1 protei	3.165185452
418	IPI00106491.3	mRNA turnover protein 4 homolog	3.163933516
419	IPI00925162.1	transferrin receptor (p90, CD71)	3.161654949
420	IPI00909338.2	lysosome membrane protein 2	3.15091753
421	IPI00155466.7	succinate-CoA ligase, GDP-forming, beta subunit	3.147031069
422	IPI01014601.1	aminopeptidase puromycin sensitive	3.144531012
423	IPI00878073.1	migration and invasion enhancer 1	3.144301653

424	IPI00413614.3	Isoform 2 of Symplekin	3.137643576
425	IPI00446667.1	cDNA FLJ41384 fis, clone BRCAN2014602, moderately similar to DIACYLGLYCEROL KI	3.132920265
426	IPI00183065.6	coiled-coil and C2 domain containing 1A	3.12879324
427	IPI00894209.1	Isoform 8 of Inhibitor of growth protein 4	3.127731085
428	IPI01018135.1	cDNA FLJ39696 fis, clone SMINT2011033, highly similar to Sorting and assembly m	3.12726903
429	IPI00012313.3	Golgi phosphoprotein 3-like	3.105096102
430	IPI00916612.1	gamma-glutamylcyclotransferase isoform 4	3.096665859
431	IPI00328390.2	Isoform 1 of Polycomb group RING finger protein 5	3.09583354
432	IPI00383290.1	leucyl-tRNA synthetase	3.094269037
433	IPI00332157.2	39S ribosomal protein L54, mitochondrial	3.093358755
434	IPI00966017.1	chromosome 5 open reading frame 24	3.079425335
435	IPI00922210.1	cDNA FLJ52564, moderately similar to Zinc finger protein 346	3.079051018
436	IPI01011569.1	cDNA, FLJ78951, highly similar to Creatine kinase, ubiquitous mitochondrial	3.063862324
437	IPI00019269.3	WD repeat-containing protein 61	3.061416388
438	IPI00983408.1	transforming growth factor, beta receptor III	3.056727171
439	IPI00927046.1	epithelial cell transforming sequence 2 oncogene	3.054199457
440	IPI00910126.1	cDNA FLJ59119, highly similar to Receptor expression-enhancing protein 6	3.046956062
441	IPI00935818.1	adenosylhomocysteinase isoform 2	3.045629501
442	IPI00797997.2	5-formyltetrahydrofolate cyclo-ligase isoform b	3.045045376
443	IPI00980553.1	cDNA FLJ50204, highly similar to 2,4-dienoyl-CoA reductase, mitochondrial	3.035377979
444	IPI00908957.1	cDNA FLJ61419, highly similar to RalA-binding protein 1	3.023126841
445	IPI00395401.3	Isoform 3 of Cdc42-interacting protein 4	3.016060829
446	IPI00216508.3	Isoform 2 of Sorting nexin-3	3.014677763
447	IPI00019487.3	Probable 7,8-dihydro-8-oxoguanine triphosphatase NUDT15	3.005639315
448	IPI00927053.2	26S protease regulatory subunit 7 2	3.003509283
449	IPI00168442.5	FAM75-like protein C9orf79	3.003401756
450	IPI00954159.1	Isoform 1 of Protein ELYS	2.998862505
451	IPI00970906.1	Isoform 1 of Transcription elongation factor A N-terminal and central domain-co	2.997951031
452	IPI00644228.1	cDNA FLJ52965, highly similar to Uridine-cytidine kinase 1	2.992982388
453	IPI00878538.1	signal transducer and activator of transcription 5A	2.991655588
454	IPI00001835.3	Zinc finger and BTB domain-containing protein 4	2.986486912
455	IPI00030296.6	Eukaryotic translation initiation factor 4A, isoform 2, isoform CRA_b	2.980415583
456	IPI00292393.5	Sodium channel protein type 4 subunit alpha	2.980061769
457	IPI01011145.1	OTU domain, ubiquitin aldehyde binding 1	2.975468874
458	IPI00983405.1	lin-7 homolog C (C. elegans)	2.975069761
459	IPI00910998.1	cDNA FLJ51306, highly similar to Homo sapiens citrate lyase beta like (CLYBL), tra	2.962366104
460	IPI00397801.4	Filaggrin-2	2.959728479
461	IPI00926172.1	WD repeat domain 12	2.95571661
462	IPI00298139.5	cDNA FLJ39639 fis, clone SMINT2003340	2.954498768
463	IPI00748303.3	zinc finger RNA binding protein	2.952274323
464	IPI00001830.1	Heterochromatin-specific nonhistone protein (Fragment)	2.950314045
465	IPI00908894.1	cDNA FLJ57473, highly similar to Ribonuclease P protein subunit p29	2.948116064
466	IPI01009115.1	N-acetylglucosamine kinase	2.947503805
467	IPI00556611.1	39S ribosomal protein L22, mitochondrial isoform b	2.935769081
468	IPI00449669.2	Isoform 2 of Translocon-associated protein subunit alpha	2.932744741
469	IPI00967585.1	guanine nucleotide binding protein (G protein), beta polypeptide 2-like 1	2.930656672
470	IPI00791495.2	HLA-B associated transcript 1	2.927881479

471	IPI00785036.8	nuclear GTPase, germinal center associated	2.927058935
472	IPI00216529.1	Isoform E of Plasma membrane calcium-transporting ATPase 1	2.924975872
473	IPI00219669.5	Carbonic anhydrase-related protein	2.921352863
474	IPI00480049.2	Isoform B of Inositol polyphosphate 5-phosphatase OCRL-1	2.917422295
475	IPI00641749.2	Isoform 1 of Janus kinase and microtubule-interacting protein 3	2.914739132
476	IPI00946474.1	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 5, 13kDa	2.913308382
477	IPI00977662.1	Parkinson disease 7 domain containing 1	2.913131475
478	IPI00307665.4	Isoform 1 of Zinc finger protein 518A	2.90212512
479	IPI00975554.1	protein tyrosine phosphatase type IVA, member 2	2.90075922
480	IPI00977503.1	midline-1 isoform 5	2.899876595
481	IPI00981929.2	cDNA FLJ33978 fis, clone DFNES2004354, highly similar to Inhibitor of nuclear fact	2.894971848
482	IPI00022426.1	Protein AMBP	2.892508745
483	IPI00797343.2	coiled-coil domain containing 117	2.888273001
484	IPI00296219.4	Glutaminase liver isoform, mitochondrial	2.885802031
485	IPI00894139.1	golgi to ER traffic protein 4 homolog (S. cerevisiae)	2.883171082
486	IPI00910017.1	cDNA FLJ54153, weakly similar to Homo sapiens Mof4 family associated protein	2.88300252
487	IPI00220147.1	Isoform 3 of Pantothenate kinase 1	2.88271594
488	IPI00031650.3	Isoform 1 of Protein syndesmos	2.873019934
489	IPI00298409.3	Phosducin-like protein	2.870197058
490	IPI00910019.2	Major vault protein	2.869003296
491	IPI01009997.1	cDNA FLJ51981, highly similar to Histone deacetylase 1	2.865437031
492	IPI00985171.1	proteoglycan 4	2.86326766
493	IPI00028078.1	Isoform A of Potassium channel subfamily K member 10	2.862164259
494	IPI01013425.1	cDNA FLJ45045 fis, clone BRAWH3021580, highly similar to Restin	2.858755589
495	IPI00643380.2	chromosome 18 open reading frame 8	2.857409954
496	IPI00893403.1	exportin 1 (CRM1 homolog, yeast)	2.856910229
497	IPI00179408.3	Tetratricopeptide repeat protein 9C	2.856591225
498	IPI00005740.1	Neighbor of COX4	2.854933977
499	IPI00908538.1	arginine and glutamate rich 1	2.851033449
500	IPI00922399.1	cDNA FLJ57937, highly similar to DNA-directed RNA polymerase II 33 kDa polypep	2.848650932
501	IPI00384047.1	Isoform 1 of Trafficking protein particle complex subunit 6B	2.843178988
502	IPI00894369.1	neuroblastoma amplified sequence	2.830990076
503	IPI00927360.1	nuclear receptor subfamily 4, group A, member 2	2.830797911
504	IPI00432753.2	Isoform 1 of Torsin-2A	2.830038071
505	IPI00011865.2	Isoform 2 of Platelet-derived growth factor D	2.824905634
506	IPI00946064.1	geranylgeranyl diphosphate synthase 1	2.824784279
507	IPI01011129.1	cDNA FLJ38453 fis, clone FEBRA2019663, highly similar to Homo sapiens DEAD (As	2.811005831
508	IPI01012915.1	cDNA FLJ53462, highly similar to Transcription intermediary factor 1-alpha	2.80894351
509	IPI00651702.1	SATB2 protein	2.80437851
510	IPI00909427.1	cDNA FLJ59384, highly similar to Striatin-4	2.804109097
511	IPI00103004.4	Isoform 2 of Intracellular hyaluronan-binding protein 4	2.80377388
512	IPI00307805.5	Growth arrest and DNA damage-inducible protein GADD45 beta	2.800504923
513	IPI00219898.1	Isoform 2 of Nephrin	2.794588804
514	IPI00894394.1	Isoform 4 of Immunoglobulin-like and fibronectin type III domain-containing pr	2.789975643
515	IPI00013706.5	39S ribosomal protein L20, mitochondrial	2.773723125
516	IPI00290764.5	Isoform 2 of Chronic lymphocytic leukemia deletion region gene 6 protein	2.770787239
517	IPI00748058.1	Isoform 2 of SH3 and cysteine-rich domain-containing protein 3	2.77041173

518	IPI00396551.3	Isoform 2 of RAD51-associated protein 1	2.768308878
519	IPI00552983.6	Protein of unknown function DUF634 family protein	2.762229204
520	IPI00002535.2	Peptidyl-prolyl cis-trans isomerase FKBP2	2.761423111
521	IPI00554560.4	chromosome 16 open reading frame 88	2.757285118
522	IPI00646520.1	non-POU domain containing, octamer-binding	2.753503561
523	IPI00984596.1	leucine-rich repeats and IQ motif containing 1	2.752708912
524	IPI01011419.1	ATP9B protein	2.711783409
525	IPI00966190.2	SFRS protein kinase 1	2.696774483

Table S3. BPPM-revealed potential nonhistone targets of EuHMT2 in HEK293T cells with the EuHMT21-Y1154A mutant and Hey-SAM **6** as BPPM reagents. These proteins are not present in the control (empty-vector transfected HEK293T cells).

Serial	Accession	Description	Score of EuHMT2
1	IPI00296337.2	Isoform 1 of DNA-dependent protein kinase catalytic subunit	683.7383871
2	IPI00220795.4	Isoform 2 of Histone-lysine N-methyltransferase EHMT2	466.1512184
3	IPI00302592.2	Isoform 2 of Filamin-A	207.2757595
4	IPI00909140.9	cDNA FLJ56903, highly similar to Tubulin beta-7 chain	134.9918664
5	IPI00024279.4	HEAT repeat-containing protein 1	120.841238
6	IPI00883857.2	Isoform Long of Heterogeneous nuclear ribonucleoprotein U	118.6945181
7	IPI00006482.1	Isoform Long of Sodium/potassium-transporting ATPase subunit alpha-1	108.9071741
8	IPI00414482.3	Isoform 1 of General transcription factor 3C polypeptide 1	108.9063585
9	IPI00893062.1	X-ray repair complementing defective repair in Chinese hamster cells 6	98.84765005
10	IPI00790636.1	HLA-B associated transcript 1	91.60756612
11	IPI01018179.1	Isoform 4 of Interleukin enhancer-binding factor 3	91.36282182
12	IPI00216049.1	Isoform 1 of Heterogeneous nuclear ribonucleoprotein K	88.98906755
13	IPI00293464.5	DNA damage-binding protein 1	81.18342185
14	IPI00402182.2	Isoform 2 of Heterogeneous nuclear ribonucleoprotein Q	74.11966062
15	IPI00026202.1	60S ribosomal protein L18a	70.69340944
16	IPI00010204.1	Serine/arginine-rich splicing factor 3	66.33425546
17	IPI00894141.2	DNA-directed RNA polymerase	65.24241805
18	IPI00030275.5	Heat shock protein 75 kDa, mitochondrial	59.69980907
19	IPI01015236.1	cDNA FLJ52378, highly similar to Tubulin beta-7 chain	58.46184039
20	IPI01014074.1	cDNA FLJ53296, highly similar to Serine/threonine-protein phosphatase 2A 65 kDa	58.19350886
21	IPI00745272.3	Isoform 2 of Glyoxalase domain-containing protein 4	57.74798656
22	IPI00646899.2	ribosomal protein L10	57.57459235
23	IPI00892976.1	Euchromatic histone-lysine N-methyltransferase 2	57.4455924
24	IPI00550451.1	Serine/threonine-protein phosphatase PP1-alpha catalytic subunit	56.66304755
25	IPI00301109.4	Isoform 1 of Inorganic pyrophosphatase 2, mitochondrial	54.79612994
26	IPI00026625.1	Isoform 1 of Nuclear pore complex protein Nup155	53.59179616
27	IPI00299608.3	Isoform 1 of 26S proteasome non-ATPase regulatory subunit 1	52.03631973
28	IPI00017617.1	Probable ATP-dependent RNA helicase DDX5	51.95726752
29	IPI00003348.3	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-2	50.74977994
30	IPI00939492.2	HLA-B associated transcript 8 BAT8 isoform a variant (Fragment)	50.66032219
31	IPI00003964.4	Isoform 2 of Probable ubiquitin carboxyl-terminal hydrolase FAF-X	50.29524088
32	IPI00291755.6	Isoform 1 of Nuclear pore membrane glycoprotein 210	49.22668934
33	IPI01015522.1	cDNA FLJ55253, highly similar to Actin, cytoplasmic 1	47.32136416
34	IPI00784332.4	Similar to Tubulin alpha-3C/D chain	47.26412559
35	IPI00064328.3	protein arginine N-methyltransferase 5 isoform b	46.35761309
36	IPI00647102.4	cDNA FLJ42590 fis, clone BRACE3009708, highly similar to Sodium/potassium-transp	45.72382426
37	IPI00604620.3	Nucleolin	45.58505511
38	IPI00216530.1	Isoform K of Plasma membrane calcium-transporting ATPase 1	45.45633245
39	IPI00940257.2	cDNA FLJ52362, highly similar to T-complex protein 1 subunit epsilon	45.03963923
40	IPI00793930.1	TUBA1B protein	44.1114819
41	IPI00642042.3	Putative uncharacterized protein DKFZp686J1372	43.91723847
42	IPI00965271.1	small subunit processome component 20 homolog	42.85621881
43	IPI00983023.1	phosphoglycerate mutase 1-like	42.1787138
44	IPI00964983.1	ribosomal protein S3A	41.65900421
45	IPI00796337.1	poly(rC)-binding protein 2 isoform a	41.27402925
46	IPI01013547.1	cystathionine-beta-synthase	40.56543255

47	IPI00472939.3	Signal peptidase complex subunit 2	40.41459775
48	IPI00171438.2	Thioredoxin domain-containing protein 5	39.3563168
49	IPI00456429.3	Ubiquitin-60S ribosomal protein L40	38.90302277
50	IPI00013891.1	Isoform Long of Transformer-2 protein homolog alpha	37.85644484
51	IPI00903323.1	cDNA FLJ38640 fis, clone HHDPC2003472, highly similar to CHLORIDE INTRACELLULAR	35.82258964
52	IPI00646721.1	Ubiquitin carboxyl-terminal hydrolase	35.46411991
53	IPI00787827.1	Isoform 2 of Presequence protease, mitochondrial	33.91579771
54	IPI00446235.2	Isoform 2 of NADH-cytochrome b5 reductase 3	33.31059861
55	IPI00166293.5	Histone H2B type 3-B	32.30172586
56	IPI00304417.7	Isocitrate dehydrogenase [NAD] subunit beta, mitochondrial precursor	32.26378059
57	IPI01014975.1	Talin 1	31.65581322
58	IPI01018004.1	3'(2'), 5'-bisphosphate nucleotidase 1	31.31366825
59	IPI00099986.5	Ketosamine-3-kinase	31.07059574
60	IPI00005719.1	Isoform 1 of Ras-related protein Rab-1A	30.42552304
61	IPI00306048.5	Isoform 1 of ATPase family AAA domain-containing protein 3B	30.22437739
62	IPI00220487.4	Isoform 1 of ATP synthase subunit d, mitochondrial	29.69207406
63	IPI00294701.1	CDK-activating kinase assembly factor MAT1	28.72710562
64	IPI00297492.2	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit STT3A	28.56105924
65	IPI00154473.5	Isoform 1 of Elongation factor G, mitochondrial	28.23124099
66	IPI00031627.4	DNA-directed RNA polymerase II subunit RPB1	27.87834454
67	IPI00908647.1	cDNA FLJ59942, highly similar to Prostaglandin E synthase 3	27.80573511
68	IPI00011307.4	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase, mitochon	27.65156341
69	IPI00008485.1	Cytoplasmic aconitate hydratase	27.61344528
70	IPI00328985.1	Isoform 1 of THO complex subunit 6 homolog	27.59589958
71	IPI00384456.4	Isoform GTBP-N of DNA mismatch repair protein Msh6	27.50466967
72	IPI00032304.2	Plastin-1	27.36275649
73	IPI00335130.5	mitochondrial ribosomal protein L37	27.21831703
74	IPI00018288.1	DNA-directed RNA polymerase II subunit RPB3	26.89926624
75	IPI01010848.1	Methionine aminopeptidase	26.41838145
76	IPI00946054.3	Isoform 3 of Histone-lysine N-methyltransferase EHMT1	25.92109776
77	IPI00472054.2	Isoform A of Constitutive coactivator of PPAR-gamma-like protein 1	25.78061318
78	IPI00924935.1	cDNA FLJ57106, highly similar to Transferrin receptor protein 1	24.9913497
79	IPI00168209.3	DTW domain-containing protein 2	24.76762366
80	IPI00032849.2	Nucleolar protein 16	24.5403409
81	IPI00983716.1	ubiquitin protein ligase E3 component n-recognin 5	24.53851151
82	IPI00418202.2	pyridoxal (pyridoxine, vitamin B6) kinase	24.44453502
83	IPI00305978.4	Aflatoxin B1 aldehyde reductase member 2	24.39702511
84	IPI00217975.4	Lamin-B1	24.35361624
85	IPI00010845.3	NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial	24.22619653
86	IPI00926412.1	Transformation/transcription domain-associated protein variant	23.87043071
87	IPI00032872.3	28S ribosomal protein S16, mitochondrial	23.81681204
88	IPI00843975.1	Ezrin	23.72064447
89	IPI00915022.2	Isoform 1 of THO complex subunit 2	23.37501526
90	IPI00909083.1	eukaryotic peptide chain release factor GTP-binding subunit ERF3A isoform 2	23.2077117
91	IPI00927876.1	polymerase (RNA) II (DNA directed) polypeptide H	23.01699042
92	IPI00926706.1	actin related protein 2/3 complex, subunit 1A, 41kDa	22.53975105
93	IPI00975963.1	eukaryotic translation elongation factor 1 delta (guanine nucleotide exchange pro	22.28946233

94	IPI00975850.1	ribosomal protein L8	22.23127723
95	IPI00641040.1	esterase D	22.21193528
96	IPI00000792.1	Quinone oxidoreductase	22.15558577
97	IPI00009607.1	Ras-related protein Rap-2c	22.08097172
98	IPI00410017.1	Isoform 2 of Polyadenylate-binding protein 1	21.9293642
99	IPI00217992.1	Isoform 3 of Dystonin	21.92004824
100	IPI00339385.1	Isoform 2 of Retinol dehydrogenase 11	21.70267034
101	IPI00333985.2	Isoform 2 of Nodal modulator 2	21.68538427
102	IPI00465022.9	Isoform 2 of Structural maintenance of chromosomes flexible hinge domain-conta	21.6378448
103	IPI00037070.3	heat shock 70kDa protein 8	21.34835196
104	IPI00414860.6	60S ribosomal protein L37a	21.27662992
105	IPI01016026.1	cDNA FLJ53202, highly similar to Exportin-2	21.27041531
106	IPI00305258.4	Isoform 1 of MOSC domain-containing protein 1, mitochondrial	21.26810241
107	IPI01014700.1	cDNA FLJ51193, highly similar to DNA mismatch repair protein Msh2	21.0701077
108	IPI01010578.1	cytoplasmic FMR1 interacting protein 2	21.02910089
109	IPI00295992.4	Isoform 2 of ATPase family AAA domain-containing protein 3A	20.9871881
110	IPI00301204.2	Isoform 1 of Retinol dehydrogenase 13	20.79895854
111	IPI01013219.1	prohibitin 2	20.71885967
112	IPI00328815.4	Isoform 1 of Ubiquitin carboxyl-terminal hydrolase 48	20.68755722
113	IPI00056494.5	60S ribosomal protein L36a-like	19.84472513
114	IPI00182757.10	Isoform 1 of Protein KIAA1967	19.83158898
115	IPI00967041.1	Ubiquitin carrier protein	19.72968006
116	IPI00293260.5	Isoform 1 of DnaJ homolog subfamily C member 10	19.13160372
117	IPI01011635.1	CDC10 protein variant (Fragment)	19.08216
118	IPI00748807.2	Isoform 1 of Nuclear pore complex protein Nup160	19.02867842
119	IPI01014189.1	MYC binding protein 2	18.75863028
120	IPI00157908.4	Isoform 3 of Apoptosis-inducing factor 1, mitochondrial	18.59455872
121	IPI00844172.1	Myosin	18.58733106
122	IPI00295889.2	Signal recognition particle 19 kDa protein	18.56547809
123	IPI00980391.2	cDNA FLJ54047, highly similar to Alpha-1 catenin	18.41666961
124	IPI00014213.1	Probable leucyl-tRNA synthetase, mitochondrial	18.35570359
125	IPI00027699.2	Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 10	18.28348708
126	IPI00885106.1	Similar to Transmembrane 9 superfamily member 4 precursor	18.13494015
127	IPI00420108.6	Dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate deh	18.09095812
128	IPI00514701.1	Isoform 2 of Mitotic checkpoint protein BUB3	17.8680315
129	IPI00903112.1	cDNA FLJ36533 fis, clone TRACH2004428, highly similar to Lactotransferrin (Fragmen	17.33468866
130	IPI00890827.1	Isoform 2 of Serine/threonine-protein phosphatase 6 catalytic subunit	17.32423234
131	IPI00215888.4	Signal recognition particle 72 kDa protein	17.1121819
132	IPI00619903.3	Isoform 2 of UDP-glucose:glycoprotein glucosyltransferase 1	16.92570233
133	IPI00902914.2	transmembrane 9 superfamily member 2	16.88384128
134	IPI00299254.4	Eukaryotic translation initiation factor 5B	16.79346323
135	IPI01012145.1	Hydroxymethylbilane synthase	16.78157663
136	IPI00908696.2	ADP-ribosylation-like factor 6 interacting protein 5	16.75019765
137	IPI00788781.1	fatty acid binding protein 5 (psoriasis-associated)	16.7113061
138	IPI01014596.1	ubiquitin C	16.70653343
139	IPI00019329.1	Dynein light chain 1, cytoplasmic	16.70442867
140	IPI00884904.1	Isoform 3 of Protein AHNAK2	16.68552947

141	IPI00295427.5	Isoform 1 of 39S ribosomal protein L39, mitochondrial	16.68056345
142	IPI00946099.1	sorcin	16.52582979
143	IPI00640401.1	ATPase, Na+/K+ transporting, alpha 2 (+) polypeptide	16.52371335
144	IPI00645329.1	Isoform 3 of Histone-binding protein RBBP4	16.43619323
145	IPI00020557.2	Prolow-density lipoprotein receptor-related protein 1	16.39069438
146	IPI00006252.3	Aminoacyl tRNA synthase complex-interacting multifunctional protein 1	16.3434124
147	IPI00658000.3	Isoform 1 of Insulin-like growth factor 2 mRNA-binding protein 3	16.23186374
148	IPI00024913.2	Isoform Long of ES1 protein homolog, mitochondrial	16.21972036
149	IPI00816106.3	Isoform 4 of Dedicator of cytokinesis protein 7	16.0455668
150	IPI00792218.1	proteasome subunit alpha type-4 isoform 2	16.04161143
151	IPI00647678.2	cDNA FLJ52703, highly similar to Asparaginyl-tRNA synthetase, cytoplasmic	15.62722707
152	IPI00554701.2	Cytochrome b-c1 complex subunit 9	15.61058617
153	IPI00305289.2	Kinesin-like protein KIF11	15.60377216
154	IPI00103732.1	Thymidylate synthetase, isoform CRA_a	15.59636855
155	IPI00642326.1	zinc finger, MYM-type 3	15.44959974
156	IPI00396203.7	Isoform 1 of Tubulin-specific chaperone D	15.43279815
157	IPI00645518.1	Isoform 1 of CDP-diacylglycerol--inositol 3-phosphatidyltransferase	15.31668091
158	IPI00024719.1	Isoform A of Histone acetyltransferase type B catalytic subunit	15.30857706
159	IPI00293735.2	Elongator complex protein 1	15.27497411
160	IPI00929313.1	coiled-coil domain containing 168	15.07390261
161	IPI01011651.1	nucleoporin 98kDa	15.02397823
162	IPI01012847.1	RAB35, member RAS oncogene family	14.94564271
163	IPI00398727.3	Isoform 2 of Acyl-protein thioesterase 1	14.82557869
164	IPI00981725.1	peptidylprolyl isomerase H (cyclophilin H)	14.69265079
165	IPI01013095.1	cDNA, FLJ79243, highly similar to Eukaryotic translation initiation factor 3 subunit 1	14.58456922
166	IPI00743813.3	Isoform 1 of Abnormal spindle-like microcephaly-associated protein	14.49706197
167	IPI00011619.4	Bifunctional 3'-phosphoadenosine 5'-phosphosulfate synthase 1	14.39087629
168	IPI00328361.7	Seryl-tRNA synthetase, mitochondrial	14.34127712
169	IPI00374272.3	chromosome 5 open reading frame 51	14.28932667
170	IPI00034159.1	V-type proton ATPase subunit d 1	14.14081883
171	IPI00032387.1	DNA replication complex GINS protein PSF1	14.1289773
172	IPI00216770.1	Isoform 2 of 26S protease regulatory subunit 6B	14.11542821
173	IPI00383500.3	Isoform 2 of Fermitin family homolog 2	14.09937
174	IPI00414384.1	Isoform 1 of Hydroxysteroid dehydrogenase-like protein 2	13.95179152
175	IPI00607577.2	superoxide dismutase [Mn], mitochondrial isoform B precursor	13.84640741
176	IPI00910755.1	cDNA FLJ51707, highly similar to Heat-shock protein 105 kDa	13.83009171
177	IPI00041325.1	H/ACA ribonucleoprotein complex subunit 2	13.82135797
178	IPI00177498.16	Isoform 3 of LIM and calponin homology domains-containing protein 1	13.80416584
179	IPI00552913.4	Isoform 2 of Syntaxin-7	13.76695967
180	IPI00028005.1	Nuclear pore complex protein Nup107	13.68241692
181	IPI00019407.1	Sterol-4-alpha-carboxylate 3-dehydrogenase, decarboxylating	13.59610152
182	IPI00852917.1	Copine I	13.57617283
183	IPI00300078.6	Periodic tryptophan protein 2 homolog	13.56396508
184	IPI00744711.2	Polyribonucleotide nucleotidyltransferase 1, mitochondrial	13.42098427
185	IPI00790334.1	Polymerase (DNA directed), epsilon, isoform CRA_a	13.40018821
186	IPI00166749.3	Mitochondrial-processing peptidase subunit alpha	13.38723707
187	IPI00952964.1	L-lactate dehydrogenase A chain isoform 4	13.30574989

188	IPI00966693.1	glutathione S-transferase, C-terminal domain containing	13.25156164
189	IPI00939526.1	Uncharacterized protein	13.2412262
190	IPI00965290.1	Isoform 3 of Cullin-4B	13.20198965
191	IPI00983406.1	branched-chain-amino-acid aminotransferase, cytosolic isoform 5	13.14481378
192	IPI00477424.4	DHX57 protein variant (Fragment)	13.1199398
193	IPI00790937.3	60S ribosomal export protein NMD3	13.08651328
194	IPI00979853.1	eukaryotic translation initiation factor 3, subunit M	13.01624179
195	IPI00798401.2	cDNA FLJ50992, highly similar to Coronin-1C	12.9656148
196	IPI00742682.2	Nucleoprotein TPR	12.95771432
197	IPI01015254.1	cDNA FLJ53681, highly similar to Glycogen (starch) synthase, muscle	12.92818904
198	IPI00910697.1	cDNA FLJ53703, highly similar to Histidyl-tRNA synthetase	12.88820577
199	IPI00658145.3	Isoform 1 of BRCA1-associated ATM activator 1	12.84551978
200	IPI00328911.3	E3 ubiquitin-protein ligase HECTD1	12.81816292
201	IPI00789281.2	Isoform 3 of Protein virilizer homolog	12.78548574
202	IPI01012511.1	cDNA FLJ50223, highly similar to Sterol O-acyltransferase 1	12.65474391
203	IPI00382699.2	Isoform 5 of Filamin-B	12.55565691
204	IPI00878236.3	fibrous sheath-interacting protein 2	12.4965713
205	IPI00944623.1	Isoform 3 of Golgin subfamily A member 3	12.46515846
206	IPI01011723.1	cDNA FLJ51704, highly similar to ADP-ribosylation factor-like protein 1	12.1291225
207	IPI01009186.1	cDNA FLJ58476, highly similar to Poly(rC)-binding protein 2	12.12248826
208	IPI00640096.2	cDNA FLJ57101, highly similar to SAC domain-containing protein 3	12.09884024
209	IPI00182180.2	OTU domain-containing protein 6B	11.93218946
210	IPI00871617.1	Isoform 1 of Lys-63-specific deubiquitinase BRCC36	11.8933475
211	IPI00893923.1	Isoform 2 of Golgi to ER traffic protein 4 homolog	11.80594444
212	IPI00003455.3	Isoform 4 of Nucleoporin NDC1	11.69121122
213	IPI00966935.1	methionyl aminopeptidase 1	11.54681015
214	IPI00976647.1	staufen, RNA binding protein, homolog 2 (Drosophila)	11.51790977
215	IPI00552886.1	Exosomal core protein CSL4	11.51610184
216	IPI00552920.2	Exosome complex component RRP43	11.48156738
217	IPI00218106.3	Isoform 2 of Transcription elongation factor A protein 1	11.38789392
218	IPI01011408.1	cDNA FLJ16235 fis, clone FEBRA2028516	11.30251765
219	IPI00646415.1	RAB14, member RAS oncogene family	11.29374671
220	IPI00743994.2	laminin subunit alpha-3 isoform 3	11.21005273
221	IPI00002335.1	huntingtin	11.17695832
222	IPI00797126.2	nascent polypeptide-associated complex subunit alpha isoform a	11.11984396
223	IPI00921912.2	rod cGMP-specific 3',5'-cyclic phosphodiesterase subunit beta isoform 3	10.99007988
224	IPI00297084.7	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase 48 kDa subunit	10.89367771
225	IPI00294879.1	Ran GTPase-activating protein 1	10.86647868
226	IPI00917001.2	cDNA, FLJ79439, highly similar to NEDD8-activating enzyme E1 catalytic subunit	10.85314226
227	IPI00291175.7	Isoform 1 of Vinculin	10.82610989
228	IPI00171459.4	Inactive hydroxysteroid dehydrogenase-like protein 1	10.82172179
229	IPI00939530.1	cDNA FLJ34106 fis, clone FCBBF3008073, highly similar to SPLICING FACTOR, ARGININ	10.78457308
230	IPI00033907.1	Anaphase-promoting complex subunit 1	10.73571968
231	IPI00220665.6	Isoform 3 of Hexokinase-1	10.71835494
232	IPI00329719.1	Myosin-Id	10.68723392
233	IPI00910514.1	xaa-Pro dipeptidase isoform 2	10.65641642
234	IPI00014253.4	Ribosome biogenesis regulatory protein homolog	10.64323997

235	IPI00181135.4	Branched-chain-amino-acid aminotransferase	10.63430691
236	IPI00900328.3	transcription activator BRG1 isoform F	10.62978029
237	IPI00384745.4	guanine nucleotide binding protein-like 1	10.53790355
238	IPI00791573.1	Isoform 2 of Suppressor of G2 allele of SKP1 homolog	10.52630734
239	IPI00877948.1	Minichromosome maintenance complex component 5	10.50127697
240	IPI00394699.3	Uncharacterized protein	10.49009347
241	IPI00169168.1	Isoform 3 of F-box only protein 22	10.43747807
242	IPI00396218.2	SCY1-like protein 2	10.42661786
243	IPI00786874.1	Putative Golgi pH regulator C	10.37785602
244	IPI00908668.1	apoptosis inhibitor 5 isoform c	10.30549598
245	IPI00218922.5	Translocation protein SEC63 homolog	10.23215318
246	IPI00414980.2	Isoform 2 of Myosin-Ib	10.22754383
247	IPI00910169.1	cDNA FLJ54122, highly similar to Cytosol aminopeptidase	10.0674417
248	IPI00946283.1	transportin 3	10.05775833
249	IPI00968174.1	IQ motif containing GTPase activating protein 2	9.929574966
250	IPI00002557.1	Coatomer subunit gamma-2	9.908848047
251	IPI00843789.2	Glycine dehydrogenase [decarboxylating], mitochondrial	9.883997917
252	IPI00909961.1	cDNA FLJ50720, highly similar to Homo sapiens tropomyosin 3 (TPM3), transcript va	9.837865829
253	IPI00910728.1	cDNA FLJ57599, moderately similar to Eukaryotic translation initiation factor 3 subu	9.831304789
254	IPI00470922.2	Isoform 2 of N-alpha-acetyltransferase 50, NatE catalytic subunit	9.777771473
255	IPI00219526.6	Isoform 1 of Phosphoglucomutase-1	9.775624275
256	IPI00239415.4	Polytrophin	9.697652102
257	IPI00925016.1	N-acylaminoacyl-peptide hydrolase	9.694558859
258	IPI00215764.1	Isoform Short of Metastasis-associated protein MTA1	9.636773586
259	IPI00216999.2	Pumilio domain-containing protein C14orf21	9.629089594
260	IPI00074489.1	NDUFB10 protein	9.616615295
261	IPI00856038.2	cDNA FLJ53358, highly similar to Heterogeneous nuclear ribonucleoprotein R	9.535647154
262	IPI00646889.1	Uncharacterized protein	9.468101025
263	IPI00061245.4	28S ribosomal protein S10, mitochondrial	9.452897549
264	IPI00922035.1	cDNA FLJ52950	9.363273859
265	IPI00106847.3	Isoform GTBP-alt of DNA mismatch repair protein Msh6	9.361681223
266	IPI00000846.2	Isoform 1 of Chromodomain-helicase-DNA-binding protein 4	9.30049777
267	IPI00976265.2	dipeptidyl-peptidase 3	9.297903538
268	IPI00945912.1	cDNA FLJ59963, highly similar to Homo sapiens multiple substrate lipid kinase (MI	9.279073238
269	IPI00025710.1	chromosome 21 open reading frame 59	9.151694775
270	IPI00410069.4	zinc finger CCCH-type, antiviral 1	9.137892008
271	IPI00180681.6	coiled-coil domain-containing protein 41	9.098641634
272	IPI00647528.1	Exosome component 2, isoform CRA_b	9.083474636
273	IPI00920991.1	Similar to Cyclin k	8.956657887
274	IPI00294501.1	7-dehydrocholesterol reductase	8.902279615
275	IPI00022542.1	Rho-associated protein kinase 1	8.890659809
276	IPI00642838.3	Isoform 2 of Lysophospholipase-like protein 1	8.841372252
277	IPI00966031.1	Eukaryotic translation initiation factor 4E	8.82912755
278	IPI00922492.1	cDNA FLJ53090, moderately similar to RNA-binding motif, single-stranded-interacti	8.820865154
279	IPI01013010.1	eukaryotic translation initiation factor 2B, subunit 1 alpha, 26kDa	8.683921099
280	IPI00024317.1	Isoform Long of Glutaryl-CoA dehydrogenase, mitochondrial	8.629867792
281	IPI01015267.1	phosphoglucomutase 2	8.614906311

282	IPI00477355.3	KIF1-binding protein	8.612172127
283	IPI00065486.3	Isoform 2 of ATP-binding cassette sub-family B member 6, mitochondrial	8.608422995
284	IPI00910254.2	cDNA FLJ50983, highly similar to Homo sapiens lysocardiolipin acyltransferase (LYC	8.607723951
285	IPI00470870.1	Putative uncharacterized protein DKFZp686J22257	8.564293146
286	IPI00184311.4	Ectonucleotide pyrophosphatase/phosphodiesterase family member 1	8.496405363
287	IPI00926796.1	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3	8.487639189
288	IPI00797314.1	COP9 constitutive photomorphogenic homolog subunit 3 (Arabidopsis)	8.480714321
289	IPI00017921.7	Isoform 2 of Protein bicaudal C homolog 1	8.418764591
290	IPI00853417.1	SCO2 cytochrome c oxidase assembly protein	8.412479877
291	IPI00005492.2	WD repeat-containing protein 5	8.403086901
292	IPI00947201.1	GLIS family zinc finger 3 transcript variant TS5	8.397313356
293	IPI00917299.1	gamma-glutamylcyclotransferase	8.375939608
294	IPI00878484.1	Ewing sarcoma breakpoint region 1	8.321173191
295	IPI00983652.2	cDNA FLJ61021, highly similar to Far upstream element-binding protein 1	8.286056519
296	IPI01009061.1	Truncated tumor suppressor protein P16	8.27630496
297	IPI00927188.1	Solute carrier family 4 sodium bicarbonate cotransporter member 7 type 2 variant	8.248812914
298	IPI00981773.1	cDNA FLJ53377, highly similar to Procollagen-lysine, 2-oxoglutarate 5-dioxygenase	8.229576111
299	IPI00018236.2	Ganglioside GM2 activator	8.210482597
300	IPI00903257.1	cDNA FLJ39170 fis, clone OCBBF2003028, highly similar to Rattus norvegicus basic le	8.172838449
301	IPI00024802.1	TATA-binding protein-associated factor 172	8.127103567
302	IPI00974096.1	family with sequence similarity 184, member A	8.075909615
303	IPI00398625.5	Hornerin	8.045919418
304	IPI00977865.1	non-specific lipid-transfer protein isoform 8 proprotein	8.02077508
305	IPI00008511.2	NADH dehydrogenase subunit 5	8.004798412
306	IPI00984992.1	non-SMC condensin II complex, subunit D3	7.977009058
307	IPI00216659.1	Isoform 2 of RNA-binding protein 8A	7.946021318
308	IPI00878524.1	ribosomal protein L3	7.911752939
309	IPI00853207.1	Protein phosphatase 2A activator, regulatory subunit 4	7.889402628
310	IPI00219833.2	Mitochondrial import inner membrane translocase subunit Tim17-B	7.879449368
311	IPI00983620.1	peptidyl-prolyl cis-trans isomerase A-like	7.864541054
312	IPI00098902.4	2-oxoglutarate dehydrogenase, mitochondrial	7.815811157
313	IPI00514769.3	Isoform 1 of Serine/threonine-protein phosphatase 6 regulatory ankyrin repeat su	7.812160254
314	IPI00946670.1	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 5, 13kDa	7.799548864
315	IPI00885004.1	Isoform 2 of Xin actin-binding repeat-containing protein 2	7.798505783
316	IPI00980681.1	chloride channel, nucleotide-sensitive, 1A	7.791601181
317	IPI00977524.1	Isoform 1 of 39S ribosomal protein L22, mitochondrial	7.686861992
318	IPI00941385.2	Isoform 3 of Ubiquitin carboxyl-terminal hydrolase 10	7.675077915
319	IPI00908755.1	cDNA FLJ53392, highly similar to Ubiquitin-activating enzyme E1	7.640746355
320	IPI00974217.2	inositol(myo)-1(or 4)-monophosphatase 1	7.634245396
321	IPI00012837.1	Kinesin-1 heavy chain	7.632534742
322	IPI00968146.1	ribosomal protein S3A	7.612484217
323	IPI00657704.4	tumor protein p53 binding protein 1	7.589646816
324	IPI00914601.2	Ubiquitin carboxyl-terminal hydrolase	7.572229862
325	IPI00797590.4	NOP2 protein	7.556642294
326	IPI00878316.2	intraflagellar transport protein 27 homolog isoform 3	7.49800539
327	IPI00237446.7	Isoform 2 of Probable phospholipid-transporting ATPase IG	7.497519016
328	IPI00873472.1	Isoform 1 of Protein transport protein Sec24A	7.455308676

329	IPI00938044.2	3-hydroxyacyl-CoA dehydratase 3-like isoform 1	7.423033476
330	IPI00011522.3	cDNA, FLJ79450, highly similar to 3-ketoacyl-CoA thiolase, peroxisomal	7.394384146
331	IPI00853634.3	Isoform 6 of Trinucleotide repeat-containing gene 6A protein	7.388463974
332	IPI00747876.2	Isoform 4 of Protein CASC5	7.37757659
333	IPI01010425.1	angiopoietin-like 4	7.372381449
334	IPI00032137.2	Alpha-actinin-3	7.364738464
335	IPI00983323.1	Parkinson disease 7 domain containing 1	7.361906528
336	IPI00293242.1	Isoform 2 of General transcription factor II-I	7.329498291
337	IPI00385645.1	Isoform 2 of Fibroblast growth factor 17	7.319234848
338	IPI00854642.1	Isoform 1 of Sister chromatid cohesion protein PDS5 homolog A	7.312296152
339	IPI00477489.1	Isoform 1 of Ras-related protein Rab-4B	7.309978485
340	IPI00847558.1	Similar to Non-POU domain-containing octamer-binding protein	7.268417597
341	IPI00218465.10	Phospholipase A-2-activating protein	7.261775017
342	IPI00926241.1	Isoform 2 of TBC1 domain family member 4	7.246945143
343	IPI00917410.1	protein kinase, interferon-inducible double stranded RNA dependent activator	7.241206408
344	IPI00883900.2	cDNA FLJ61360, highly similar to Crumbs homolog 1	7.2365973
345	IPI01009317.1	cDNA FLJ50426, highly similar to Ubiquitin carboxyl-terminal hydrolase 7	7.222208738
346	IPI00168262.2	Procollagen galactosyltransferase 1	7.221436024
347	IPI00295502.6	Isoform 1 of Protein Wiz	7.207459211
348	IPI00555893.3	Isoform 3 of Vacuolar protein sorting-associated protein 54	7.203310013
349	IPI01015580.1	adaptor-related protein complex 2, beta 1 subunit	7.122530222
350	IPI00876931.1	Integrator complex subunit 1	7.115786314
351	IPI00103560.1	Isoform 1 of Dual specificity protein phosphatase CDC14B	7.115598679
352	IPI00910144.2	chromosome 22 open reading frame 28	7.101982832
353	IPI00908746.1	cDNA FLJ51535, highly similar to Phosphatidylethanolamine-binding protein 1	7.098308086
354	IPI00013949.1	Small glutamine-rich tetratricopeptide repeat-containing protein alpha	7.046792269
355	IPI01011241.1	eukaryotic translation initiation factor 3, subunit H	7.026051283
356	IPI00945735.1	RAB7A, member RAS oncogene family	7.024266958
357	IPI00984284.1	heterogeneous nuclear ribonucleoprotein H1 (H)	7.018344879
358	IPI00977201.1	FERM domain containing 8	6.955527067
359	IPI00301434.4	BolA-like protein 2	6.94065237
360	IPI00514321.1	Chromosome 20 open reading frame 72	6.917865992
361	IPI00867688.2	Similar to DEAH (Asp-Glu-Ala-His) box polypeptide 40	6.862523794
362	IPI00642443.3	General transcription factor IIIC, polypeptide 5, 63kDa	6.845027924
363	IPI01010581.1	cDNA FLJ51337, highly similar to Signal transducer and activator of transcription 4	6.833633184
364	IPI00644425.1	Ras homolog gene family, member C	6.826744556
365	IPI00747534.3	Pyrroline-5-carboxylate reductase	6.82123065
366	IPI00894206.2	tetratricopeptide repeat protein 27 isoform 2	6.798231125
367	IPI01014476.1	Aspartate aminotransferase	6.768373966
368	IPI00167806.3	Isoform 2 of RNA-binding protein Musashi homolog 2	6.729918718
369	IPI00894059.1	exportin 1 (CRM1 homolog, yeast)	6.72880125
370	IPI00444454.3	Isoform 2 of Putative helicase MOV-10	6.72008872
371	IPI00984387.1	cDNA FLJ53166, highly similar to Dihydropyrimidinase-related protein 2	6.719806194
372	IPI00607548.4	Isoform 5 of InaD-like protein	6.709991217
373	IPI00940377.1	glutathione S-transferase mu 2 (muscle)	6.697089434
374	IPI00642422.2	Isoform 2 of Probable histone-lysine N-methyltransferase ASH1L	6.681286812
375	IPI00977554.1	endoribonuclease Dicer isoform 2	6.647475004

376	IPI00903191.1	Eukaryotic translation initiation factor 3, subunit D	6.604324341
377	IPI00964248.1	transmembrane protein 165	6.596060276
378	IPI01010257.1	Similar to YLP motif containing 1	6.589266539
379	IPI00967340.1	LPS-responsive vesicle trafficking, beach and anchor containing	6.580407143
380	IPI00930380.1	Serine/threonine-protein phosphatase	6.571713686
381	IPI00937974.2	Delta-aminolevulinic acid dehydratase	6.566494703
382	IPI00007358.1	Zinc finger HIT domain-containing protein 1	6.555282831
383	IPI00217143.3	succinate dehydrogenase complex, subunit A, flavoprotein (Fp)	6.536279202
384	IPI00791794.1	Isoform 6 of Protein diaphanous homolog 3	6.527878284
385	IPI00909721.1	cDNA FLJ51562, highly similar to Prohibitin	6.50565052
386	IPI00556601.1	Solute carrier family 25 member 4 variant (Fragment)	6.498196125
387	IPI00387088.1	Isoform 4 of FAD synthase	6.477309942
388	IPI00978171.1	proteasome (prosome, macropain) 26S subunit, ATPase, 3	6.422775984
389	IPI00549343.3	Vesicle-associated membrane protein 3	6.397579193
390	IPI00947130.1	coiled-coil domain containing 14	6.365230799
391	IPI00787306.1	regulator of chromosome condensation isoform b	6.311150789
392	IPI00639828.1	Four and a half LIM domains 1	6.293713331
393	IPI00024129.1	Peptidyl-prolyl cis-trans isomerase C	6.268741608
394	IPI00984541.1	ectonucleotide pyrophosphatase/phosphodiesterase family member 7-like	6.262800455
395	IPI00658186.1	cDNA FLJ59463, highly similar to Geranylgeranyl pyrophosphate synthetase	6.249212265
396	IPI00789033.2	5'-nucleotidase, cytosolic III-like	6.247641563
397	IPI00412742.1	Isoform 2 of Calcium-binding mitochondrial carrier protein SCaMC-1	6.234661579
398	IPI00029744.1	Single-stranded DNA-binding protein, mitochondrial	6.233521223
399	IPI00556429.3	cDNA FLJ51423, highly similar to Serine/threonine-protein kinase PLK1	6.232278109
400	IPI00645206.2	Isoform 1 of Protocadherin-17	6.215114594
401	IPI00966157.1	SAR1 homolog B (S. cerevisiae)	6.206763029
402	IPI00176637.5	Eukaryotic translation initiation factor 2 subunit 2-like protein	6.189522028
403	IPI00788837.2	cDNA FLJ54752, highly similar to Poly(rC)-binding protein 2	6.184121609
404	IPI00641815.1	Isoform 2 of TIP41-like protein	6.180614471
405	IPI00297121.6	replication termination factor 2 domain containing 1	6.179140091
406	IPI01015730.1	DNA-directed RNA polymerase	6.136565924
407	IPI01013345.1	testis expressed 10	6.110919952
408	IPI00873716.1	Lamina-associated polypeptide 2, isoforms beta/gamma variant (Fragment)	6.102148771
409	IPI00657768.1	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthe	6.102040291
410	IPI00027180.1	CAAX prenyl protease 1 homolog	6.094688416
411	IPI00916797.1	non-SMC condensin II complex, subunit G2	6.076131105
412	IPI00927458.1	ribosomal protein L32	6.071841955
413	IPI01011969.1	cDNA FLJ58372, highly similar to Nuclear pore complex protein Nup88	6.059197664
414	IPI00743576.1	Isoform 2 of V-type proton ATPase 116 kDa subunit a isoform 1	6.02908659
415	IPI00004506.3	BTB/POZ domain-containing protein KCTD5	5.988526583
416	IPI00741107.3	Isoform 3 of Melanoma inhibitory activity protein 3	5.979962349
417	IPI00642510.3	testis-expressed sequence 10 protein isoform 2	5.925148249
418	IPI00892532.1	glypican 1	5.92497921
419	IPI00647751.2	Isoform 2 of Calmodulin-regulated spectrin-associated protein 1	5.924484491
420	IPI00909684.1	cDNA FLJ57602, highly similar to Creatine kinase M-type	5.888777733
421	IPI00410091.3	chromosome 11 open reading frame 73	5.875143051
422	IPI00789008.1	Flotillin-2	5.873680592

423	IPI01013230.1	cDNA FLJ51319, highly similar to tRNA (adenine-N(1)-)-methyltransferase non-catal	5.834569693
424	IPI00964795.1	cDNA FLJ58215, highly similar to Homo sapiens leucine zipper transcription factor-	5.817508936
425	IPI00740909.1	Isoform 3 of Alstrom syndrome protein 1	5.813872099
426	IPI00056496.1	Ras-related protein Rab-24	5.811949492
427	IPI00790673.2	Isoform 3 of Cytoplasmic FMR1-interacting protein 1	5.76056695
428	IPI00007731.1	Isoform 1 of BAG family molecular chaperone regulator 5	5.752711296
429	IPI00045939.4	2-aminoethanethiol dioxygenase	5.743136883
430	IPI01011531.2	cDNA FLJ54191, highly similar to Annexin A7	5.737822056
431	IPI00909122.1	poly(A)-specific ribonuclease PARN isoform 2	5.656954288
432	IPI01010584.1	KIAA0586	5.6519382
433	IPI00645341.1	BCL6 corepressor	5.629693508
434	IPI00022430.1	Glyceraldehyde-3-phosphate dehydrogenase, testis-specific	5.616788387
435	IPI00011077.4	39S ribosomal protein L32, mitochondrial precursor	5.58299017
436	IPI00000156.3	Isoform Beta of DNA ligase 3	5.463475227
437	IPI00965501.2	cDNA FLJ54242, highly similar to Calnexin	5.423078299
438	IPI00654820.2	ATP synthase subunit a	5.402955532
439	IPI00929107.1	Seipin isoform 1	5.297815084
440	IPI00186139.8	Similar to Protein KRI1 homolog	5.294789791
441	IPI01010750.1	DNA ligase (Fragment)	5.294677258
442	IPI00872952.1	Ubiquinol-cytochrome c reductase hinge protein, isoform CRA_c	5.278233051
443	IPI00640947.2	Isoform 2 of tRNA-dihydrouridine synthase 3-like	5.276941299
444	IPI00514530.5	actin, alpha 1, skeletal muscle	5.267291546
445	IPI00550234.4	Isoform 1 of Actin-related protein 2/3 complex subunit 5	5.248762608
446	IPI00738216.3	KIAA0947	5.246402979
447	IPI00926196.2	cDNA FLJ56396, highly similar to Huntingtin-interacting protein 1	5.238226891
448	IPI00893074.1	Family with sequence similarity 118, member A	5.206407547
449	IPI00413144.6	Isoform 2 of Treslin	5.174490452
450	IPI00852843.1	Isoform 2 of N-alpha-acetyltransferase 25, NatB auxiliary subunit	5.157077789
451	IPI00477093.3	Isoform 3 of Integrator complex subunit 3	5.132245064
452	IPI00927271.1	transformer 2 beta homolog (Drosophila)	5.12930584
453	IPI00878795.1	RAN binding protein 1	5.125430346
454	IPI00980781.1	N-acetyltransferase 10 (GCN5-related)	5.037157536
455	IPI00982254.1	cDNA FLJ60573, highly similar to TNF receptor-associated factor 5	4.956015348
456	IPI01010224.1	zinc finger protein 844	4.917386532
457	IPI00647044.1	Microsomal glutathione S-transferase 3	4.916156292
458	IPI00953689.1	Alpha-2-HS-glycoprotein	4.895540237
459	IPI00019046.4	Isoform 1 of Pre-mRNA-splicing factor RBM22	4.87909627
460	IPI00982734.1	Conserved hypothetical protein	4.849043846
461	IPI00980903.1	phosphatidylinositol 4-kinase, catalytic, beta	4.841104031
462	IPI00172648.1	Isoform 5 of Ribosome-releasing factor 2, mitochondrial	4.790606499
463	IPI00456965.5	Isoform 1 of 2-methoxy-6-polyprenyl-1,4-benzoquinol methylase, mitochondrial	4.789173126
464	IPI00167818.3	SPANXA2 overlapping transcript 1 (non-protein coding)	4.770785332
465	IPI00792538.1	APEX nuclease (multifunctional DNA repair enzyme) 1	4.667920589
466	IPI00394874.3	Isoform 2 of Ectonucleoside triphosphate diphosphohydrolase 8	4.656054974
467	IPI00446850.1	chromosome 1 open reading frame 186	4.620590687
468	IPI00031047.2	IQ motif containing G	4.586830616
469	IPI00915457.1	Isoform 1 of POTE ankyrin domain family member C	4.578995228

470	IPI00922577.1	cDNA FLJ53768, highly similar to Hepatocyte growth factor-like protein	4.565380573
471	IPI00967531.1	peroxisomal biogenesis factor 10	4.541862965
472	IPI00791071.2	Isoform 2 of Protein PIEZO2	4.518009663
473	IPI00885017.1	cDNA, FLJ79527, moderately similar to Uroporphyrinogen decarboxylase	4.502159119
474	IPI00977526.1	family with sequence similarity 126, member B	4.491538048
475	IPI00941345.1	tenascin XB	4.478475571
476	IPI00385955.1	Brain my037 protein	4.467207432
477	IPI00878764.1	l(3)mbt-like 2 (Drosophila)	4.463213921
478	IPI00879449.1	sperm antigen with calponin homology and coiled-coil domains 1-like	4.461359024
479	IPI00470766.14	Isoform 1 of Olfactomedin-like protein 2B	4.452666759
480	IPI00945820.1	Uncharacterized protein	4.451300144
481	IPI00219478.3	Isoform 2 of Phosphoserine aminotransferase	4.419585705
482	IPI00985082.1	Receptor type protein tyrosine phosphatase gamma (Fragment)	4.407513142
483	IPI00220381.2	Isoform 2 of Transcription factor 20	4.401259422
484	IPI01012170.1	atlastin GTPase 3	4.385352135
485	IPI00293288.2	Isoform 1 of Glutamate receptor, ionotropic kainate 5	4.378353119
486	IPI00790281.2	cDNA FLJ51777, highly similar to Squamous cell carcinoma antigen recognized byT-	4.369580746
487	IPI01011431.1	cDNA FLJ60167, highly similar to Cytosolic acyl coenzyme A thioester hydrolase	4.365740776
488	IPI00909251.1	cDNA FLJ51165, highly similar to DNA damage-binding protein 1	4.331735611
489	IPI00008527.3	60S acidic ribosomal protein P1	4.300535679
490	IPI00171540.2	Chromosome transmission fidelity protein 8 homolog isoform 2	4.280999184
491	IPI00015580.3	Isoform 3 of Formin-binding protein 1-like	4.280753613
492	IPI00939219.1	Equilibrative nucleoside transporter 1	4.262634277
493	IPI00945125.1	superkiller viralicidic activity 2-like (S. cerevisiae)	4.259326458
494	IPI00978544.1	ATPase, H+ transporting, lysosomal 50/57kDa, V1 subunit H	4.258832932
495	IPI00292787.6	Actin-related protein 5	4.229960442
496	IPI00873684.1	Isoform 2 of Collagen alpha-1(IV) chain	4.200462341
497	IPI01010893.1	late endosomal/lysosomal adaptor, MAPK and MTOR activator 1	4.200406551
498	IPI00980323.2	cDNA FLJ51919, highly similar to Homo sapiens abhydrolase domain containing 8 (	4.197277546
499	IPI00171856.1	Deoxyhypusine hydroxylase	4.190542221
500	IPI00386885.1	cDNA FLJ14414 fis, clone HEMBA1004847, highly similar to SIGNAL RECOGNITION PAR	4.186115265
501	IPI00017533.2	Cytochrome c oxidase subunit 3	4.178531647
502	IPI01014582.1	lactate dehydrogenase A	4.168670654
503	IPI00745311.2	Killer cell immunoglobulin-like receptor 3DS1	4.165480137
504	IPI00945805.1	ribonuclease P/MRP 40kDa subunit	4.165179729
505	IPI00397498.1	Isoform 2 of Carbamoyl-phosphate synthase [ammonia], mitochondrial	4.142326355
506	IPI00006934.1	Hydroxyacid oxidase 1	4.140348434
507	IPI01009009.1	RBM14-RBM4 protein isoform 2	4.1335392
508	IPI00440719.2	N(alpha)-acetyltransferase 10, NatA catalytic subunit	4.089213848
509	IPI00976088.1	ribonucleotide reductase M1	4.08574295
510	IPI00411545.3	Isoform 3 of Thrombopoietin	4.053452492
511	IPI00477605.6	Isoform 1 of Acyl-coenzyme A synthetase ACSM5, mitochondrial	4.029726028
512	IPI00172656.6	FAS-associated factor 2	4.014418125
513	IPI00471914.6	Isoform 2 of FYVE, RhoGEF and PH domain-containing protein 6	3.978642225
514	IPI01010503.1	stress-induced-phosphoprotein 1	3.972180367
515	IPI00909754.1	cDNA FLJ61500, highly similar to NNP-1 protein	3.964648247
516	IPI00967973.1	Calnexin	3.95118475

517	IPI00549761.3	Chitobiosyldiphosphodolichol beta-mannosyltransferase	3.946815252
518	IPI00853224.1	StAR-related lipid transfer protein 7, mitochondrial	3.938904047
519	IPI00656111.1	Isoform E of Proteoglycan 4	3.934770823
520	IPI00167841.2	Isoform 2 of Activating transcription factor 7-interacting protein 2	3.929155827
521	IPI00924758.1	cDNA FLJ32188 fis, clone PLACE6002056, highly similar to Guanine nucleotide-bindi	3.922733784
522	IPI00016074.2	M-phase phosphoprotein 6	3.912299156
523	IPI00916247.2	exonuclease 3'-5' domain containing 2	3.891948462
524	IPI00914539.1	Isoform 2 of Ankyrin repeat and FYVE domain-containing protein 1	3.890255928
525	IPI00219090.1	Isoform 2 of Protein arginine N-methyltransferase 7	3.8867414
526	IPI00911085.1	cDNA FLJ53754, highly similar to Transmembrane emp24 domain-containing protei	3.886036158
527	IPI00893200.1	19 kDa protein	3.873499632
528	IPI00968217.1	NOP14 nucleolar protein	3.843609095
529	IPI00903259.2	cDNA FLJ54005, highly similar to Transcription elongation factor SPT5	3.842230082
530	IPI00981682.1	proline synthetase co-transcribed homolog (bacterial)	3.840254068
531	IPI00011201.1	NAD-dependent malic enzyme, mitochondrial	3.814752579
532	IPI00947372.2	structural maintenance of chromosomes 4	3.812386274
533	IPI00879643.1	mitochondrial fission process 1	3.807324171
534	IPI00980448.1	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 4, 15kDa	3.787592173
535	IPI00916763.1	heat shock 10kDa protein 1 (chaperonin 10)	3.747044325
536	IPI00745182.1	phospholipase C, gamma 1	3.731425047
537	IPI00185398.4	methionyl-tRNA synthetase	3.730978489
538	IPI01012564.1	cDNA FLJ52405, highly similar to Myosin Ic	3.730549574
539	IPI00966206.1	programmed cell death 6	3.729136467
540	IPI00031424.1	Isoform 2 of Phosphatidylinositol 4-kinase alpha	3.728237629
541	IPI00607610.1	Isoform 1 of Protein FAM36A	3.727309227
542	IPI00642862.1	Peptidyl-prolyl cis-trans isomerase-like 4	3.714351177
543	IPI01014635.1	solute carrier family 3 (activators of dibasic and neutral amino acid transport), me	3.713633299
544	IPI00007814.3	V-type proton ATPase subunit C 1	3.700995922
545	IPI00555788.2	Isoform 3 of Glycerophosphodiester phosphodiesterase domain-containing protei	3.698200703
546	IPI01015537.1	general transcription factor IIH, polypeptide 3, 34kDa	3.69206953
547	IPI00472003.1	Isoform 4 of BH3-interacting domain death agonist	3.677544594
548	IPI00981108.1	cDNA FLJ35898 fis, clone TESTI2009520, highly similar to Rattus norvegicus endopla	3.676934004
549	IPI00941876.2	Isoform 5 of PARP1-binding protein	3.670991421
550	IPI00329025.1	Protein jagunal homolog 1	3.655322552
551	IPI00964370.1	cDNA FLJ60877, highly similar to Zinc finger protein 346	3.633505821
552	IPI00980509.1	nucleosome assembly protein 1-like 4	3.629339695
553	IPI00977571.1	hypothetical protein LOC100508996	3.625877142
554	IPI00910915.1	cDNA FLJ54756, moderately similar to Homo sapiens nitric oxide synthase interacti	3.624631166
555	IPI00001141.4	Mitochondrial import inner membrane translocase subunit Tim22	3.610780239
556	IPI00005045.1	ATP-binding cassette sub-family F member 2	3.604427099
557	IPI00418277.3	Chondroitin sulfate synthase 3	3.575285912
558	IPI00645653.1	translocase of inner mitochondrial membrane 23 homolog B (yeast)	3.567307472
559	IPI00740019.3	Isoform 1 of Protein Daple	3.561594009
560	IPI00791914.2	BM-010 variant (Fragment)	3.551699877
561	IPI00975639.1	dynamin 3	3.546967268
562	IPI00291417.2	Isoform 1 of Dephospho-CoA kinase domain-containing protein	3.539319515
563	IPI00027705.2	Isoform 1 of DNA primase large subunit	3.534766436

564	IPI00382858.2	Isoform B of Trimethyllysine dioxygenase, mitochondrial	3.529125452
565	IPI00386667.2	Isoform 2 of Carboxypeptidase A6	3.528172255
566	IPI00844404.2	Isoform 2 of TRMT1-like protein	3.524603367
567	IPI00059242.3	Synapse-associated protein 1	3.520887136
568	IPI00145593.7	Nucleolar MIF4G domain-containing protein 1	3.505145788
569	IPI00010120.4	Isoform 1 of C-terminal-binding protein 2	3.504005671
570	IPI01012217.1	Full-length cDNA clone CS0DI035YL21 of Placenta of Homo sapiens	3.502397299
571	IPI00908319.1	cDNA FLJ51570, highly similar to Thioredoxin domain-containing protein 1	3.500628233
572	IPI00910984.1	cDNA FLJ57468	3.495084524
573	IPI00843886.1	apolipoprotein O	3.490085602
574	IPI00976697.1	family with sequence similarity 76, member A	3.488691807
575	IPI01012747.1	aldehyde dehydrogenase 5 family, member A1	3.485749245
576	IPI00942336.1	listerin E3 ubiquitin protein ligase 1	3.485023975
577	IPI00916551.1	malate dehydrogenase 1, NAD (soluble)	3.479502916
578	IPI00604702.1	Isoform 2 of Phosphopantothenoylcysteine decarboxylase	3.47889924
579	IPI00924999.1	IMP (inosine 5'-monophosphate) dehydrogenase 2	3.474856853
580	IPI00888266.3	n-acetylserotonin O-methyltransferase-like protein-like	3.474449635
581	IPI00829629.1	Isoform 3 of Proteasome activator complex subunit 4	3.460556269
582	IPI00297455.6	A-kinase anchor protein 8-like	3.456336975
583	IPI00982043.1	KIAA1967	3.451563597
584	IPI01010009.1	diablo, IAP-binding mitochondrial protein	3.451171875
585	IPI00964195.1	coproporphyrinogen oxidase	3.444897652
586	IPI00981208.1	cysteine and histidine-rich domain (CHORD) containing 1	3.443861723
587	IPI00965708.1	pleiotropic regulator 1	3.441361666
588	IPI00909062.2	CoA synthase	3.432289839
589	IPI00975884.1	solute carrier family 39 (zinc transporter), member 14	3.430989265
590	IPI00032995.1	LanC-like protein 2	3.424777269
591	IPI00257933.8	Protein BEX5	3.423010588
592	IPI00025344.1	NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial	3.41641736
593	IPI00384224.4	Similar to dual specificity phosphatase 9	3.416248798
594	IPI00888802.1	coiled-coil domain containing 74A	3.416227818
595	IPI00985284.1	La ribonucleoprotein domain family, member 1	3.413938761
596	IPI00298353.4	Guanylate-binding protein 7	3.412475348
597	IPI00966636.1	matrin 3	3.411032677
598	IPI00419792.3	Similar to Dual specificity mitogen-activated protein kinase kinase 2	3.410777092
599	IPI00640296.1	Heterogeneous nuclear ribonucleoprotein K	3.410216331
600	IPI00954996.1	chromosome X open reading frame 56	3.409793377
601	IPI01014588.1	cDNA FLJ58155, highly similar to Cohesin subunit SA-2	3.409322023
602	IPI00647752.2	cDNA FLJ61735, highly similar to Zinc finger A20 domain-containing protein 1	3.407420635
603	IPI00217386.1	Isoform 2 of DNA-directed RNA polymerases I and III subunit RPAC1	3.404648304
604	IPI00007049.1	28S ribosomal protein S18c, mitochondrial	3.401761532
605	IPI01013137.1	cDNA FLJ58497, highly similar to Unc-13 homolog C	3.401104927
606	IPI01013452.1	proteasome (prosome, macropain) 26S subunit, non-ATPase, 9	3.400309563
607	IPI01014223.1	cDNA FLJ50851, highly similar to Tyrosine-protein phosphatase non-receptor type1	3.39807415
608	IPI01015742.1	serine/threonine kinase 38 like	3.397047043
609	IPI00878166.1	Isoform 2 of NHL repeat-containing protein 2	3.393936634
610	IPI00879999.1	Isoform 1 of ATP-dependent RNA helicase DDX54	3.385189056

611	IPI01009407.1	cDNA FLJ45137 fis, clone BRAWH3038827, highly similar to Homo sapiens leucine-zi	3.38276577
612	IPI00009771.6	Lamin-B2	3.380929232
613	IPI00306661.3	E3 ubiquitin-protein ligase KCMF1	3.376299381
614	IPI00909658.1	cDNA FLJ52759, highly similar to Plastin-2	3.375437975
615	IPI00902957.1	cDNA FLJ90012 fis, clone HEMBA1000462, highly similar to CCR4-NOT transcription co	3.371630907
616	IPI00867515.1	unc-51-like kinase 4 (C. elegans)	3.366783857
617	IPI00945024.1	staphylococcal nuclease and tudor domain containing 1	3.366449118
618	IPI00654793.2	NAD kinase domain containing 1	3.358320475
619	IPI00007979.4	NADH-ubiquinone oxidoreductase chain 2	3.349155188
620	IPI00916446.1	distal-less homeobox 1	3.343543053
621	IPI00375701.2	Isoform 2 of VIP peptides	3.336665392
622	IPI00395507.4	Isoform 2 of ELAV-like protein 4	3.335440874
623	IPI00943071.2	cDNA FLJ57184, highly similar to Bromodomain and WD repeat domain-containing	3.335140228
624	IPI01015469.1	2-oxoglutarate and iron-dependent oxygenase domain containing 1	3.333026171
625	IPI00645320.1	Isoform 3 of Beta-catenin-like protein 1	3.329285145
626	IPI00925850.2	cDNA FLJ54572, highly similar to Lysosomal alpha-mannosidase	3.327897787
627	IPI00902543.3	NOP2/Sun domain family, member 5	3.326188326
628	IPI00853433.1	ATPase, H+ transporting, lysosomal 31kDa, V1 subunit E1	3.324478149
629	IPI00215687.1	Isoform 3 of Glutaminase kidney isoform, mitochondrial	3.323078871
630	IPI00032406.1	DnaJ homolog subfamily A member 2	3.321737766
631	IPI00328938.4	Isoform 1 of E3 ubiquitin-protein ligase RNF138	3.315677643
632	IPI00307325.2	Zinc finger protein 161 homolog	3.315529585
633	IPI00000105.4	Major vault protein	3.314646006
634	IPI00856004.1	ras-related protein R-Ras2 isoform b	3.313657522
635	IPI00797490.2	cDNA FLJ53588, highly similar to Translocation-associated membrane protein 1	3.311407328
636	IPI00887254.2	Putative ferritin heavy polypeptide-like 19	3.30765748
637	IPI00930396.1	cDNA FLJ35812 fis, clone TESTI2006051, highly similar to Acyl-coenzyme A thioestera	3.304494143
638	IPI01018260.1	cDNA FLJ11747 fis, clone HEMBA1005530, highly similar to Anaphase-promoting com	3.300151587
639	IPI00376394.4	Sulfhydryl oxidase 2	3.298935175
640	IPI00019976.2	Coiled-coil domain-containing protein 85B	3.298585892
641	IPI00788816.1	Similar to Submaxillary gland androgen-regulated protein 3 homolog B precursor	3.295587301
642	IPI00915874.1	partner of NOB1 homolog (S. cerevisiae)	3.287039042
643	IPI00926620.1	cytochrome P450, family 51, subfamily A, polypeptide 1	3.286698818
644	IPI00646692.2	RAB31, member RAS oncogene family	3.285127401
645	IPI00640585.2	transmembrane protein 161A	3.283124447
646	IPI00909562.1	cDNA FLJ52462, moderately similar to Mus musculus proteasome (prosome, macrop	3.279426575
647	IPI00402109.4	Isoform 2 of Phosphatidylinositol glycan anchor biosynthesis class U protein	3.278314352
648	IPI00795109.1	cDNA, FLJ79092, highly similar to GTP-binding nuclear protein Ran	3.278274775
649	IPI00470629.4	Isoform 1 of Calmodulin-lysine N-methyltransferase	3.274087906
650	IPI00152196.3	N-acylneuraminate-9-phosphatase	3.271921158
651	IPI00065521.5	Putative tRNA pseudouridine synthase Pus10	3.271898031
652	IPI00964345.1	casein alpha s1	3.271681547
653	IPI00927704.1	transmembrane protein 237	3.267240047
654	IPI00916096.1	Conserved hypothetical protein	3.264837265
655	IPI00922126.1	cDNA FLJ57759, moderately similar to Transgelin-2	3.261574507
656	IPI00847400.1	chromosome 19 open reading frame 47	3.252752066
657	IPI00855846.1	ABRA C-terminal like	3.250239372

658	IPI00759537.1	Isoform 2 of Mitochondrial Rho GTPase 2	3.247343302
659	IPI00909746.1	cDNA FLJ51502, highly similar to 60S ribosomal protein L18a	3.246116638
660	IPI01009730.1	Putative uncharacterized protein DKFZp547A1913	3.245847225
661	IPI00641449.2	Isoform 2 of Enhancer of mRNA-decapping protein 4	3.244997263
662	IPI00927183.1	Williams Beuren syndrome chromosome region 22	3.241432905
663	IPI01015062.1	cDNA FLJ45314 fis, clone BRHIP3005142, highly similar to Proteasome-associated pr	3.237799644
664	IPI00215905.1	Isoform IIC4 of Low affinity immunoglobulin gamma Fc region receptor II-c	3.235785246
665	IPI00031115.5	Golgin subfamily A member 1	3.234233856
666	IPI00965557.1	methyltransferase like 14	3.230890036
667	IPI00854630.2	proline rich 12	3.229253292
668	IPI00643530.1	cytochrome b5 reductase 1	3.228613853
669	IPI00792017.1	schlafen family member 12	3.222703695
670	IPI00217430.1	Isoform 2 of NLR family CARD domain-containing protein 4	3.215734959
671	IPI00478620.2	tripartite motif-containing protein 48	3.211925507
672	IPI00795573.1	NECAP endocytosis associated 1	3.210455894
673	IPI00514986.1	5'-nucleotidase domain containing 1	3.204140425
674	IPI01015523.1	coiled-coil serine-rich protein 2	3.202517986
675	IPI00556297.1	Arginine/serine-rich splicing factor 6 variant (Fragment)	3.202192783
676	IPI00917916.1	DIS3 mitotic control homolog (S. cerevisiae)-like 2	3.201835394
677	IPI00301163.1	Protein O-glucosyltransferase 1	3.19927907
678	IPI00173901.1	Isoform 2 of Histone-lysine N-methyltransferase, H3 lysine-36 and H4 lysine-20 spe	3.195893049
679	IPI01010263.1	ubiquitin protein ligase E3 component n-recognin 7 (putative)	3.194836617
680	IPI00984362.1	tissue specific transplantation antigen P35B	3.194470167
681	IPI00807384.2	cleavage and polyadenylation specific factor 3, 73kDa	3.189180136
682	IPI00976712.1	zinc finger, CCHC domain containing 11	3.18565011
683	IPI00100245.1	DNA-directed RNA polymerase III subunit RPC6	3.185195923
684	IPI00639912.2	nuclear autoantigenic sperm protein (histone-binding)	3.1851542
685	IPI00644568.1	budding uninhibited by benzimidazoles 3 homolog (yeast)	3.181827784
686	IPI00983570.1	HLA class I histocompatibility antigen, A-69 alpha chain-like isoform 17	3.178947449
687	IPI00220542.1	Isoform 2 of Serine protease HTRA2, mitochondrial	3.178910494
688	IPI00927837.1	zinc finger CCCH-type containing 15	3.177031517
689	IPI00552426.2	serine/threonine kinase 24	3.176285744
690	IPI01013073.1	mutS homolog 6 (E. coli)	3.175209284
691	IPI00160506.1	ADAM metallopeptidase with thrombospondin type 1 motif, 13	3.172572374
692	IPI00184433.2	Supported by Human ESTs AA017424.1 (NID:g1479799), H85906.1	3.16696763
693	IPI00642657.1	Isoform 3 of Choline transporter-like protein 1	3.166265965
694	IPI01010643.1	cDNA FLJ38844 fis, clone MESAN2003662, highly similar to Cullin-1	3.162334442
695	IPI00013296.3	40S ribosomal protein S18	3.146720648
696	IPI00916394.2	RAD54-like 2 (S. cerevisiae)	3.143470049
697	IPI00043262.1	SATB2 antisense RNA 1	3.139975071
698	IPI01014549.1	heme binding protein 1	3.139760256
699	IPI00514271.1	Phosphodiesterase 4B, cAMP-specific	3.136208773
700	IPI00178714.2	Isoform 2 of Serine/threonine-protein kinase PAK 4	3.135077715
701	IPI00939864.2	cDNA FLJ31273 fis, clone KIDNE2006299, weakly similar to BOB1 PROTEIN	3.133990526
702	IPI00976489.1	ribosomal protein S2	3.132829905
703	IPI00644349.4	cDNA FLJ60449, highly similar to Homo sapiens prion protein interacting protein (P	3.130381584
704	IPI00910594.2	DDB1 and CUL4 associated factor 7	3.127041578

705	IPI00759768.1	Isoform 2 of Elongation factor Tu GTP-binding domain-containing protein 1	3.126696348
706	IPI00556344.2	Isoform 2 of Lysophosphatidic acid phosphatase type 6	3.12577486
707	IPI00061282.2	Protein kinase, AMP-activated, alpha 1 catalytic subunit, isoform CRA_b	3.125466108
708	IPI00847729.2	thyroid hormone receptor interactor 13	3.121195316
709	IPI00795983.1	Coiled-coil alpha-helical rod protein 1	3.11758256
710	IPI00291525.1	Dimethyladenosine transferase 1, mitochondrial	3.115568638
711	IPI00413611.1	DNA topoisomerase 1	3.113761425
712	IPI00217005.7	Ankyrin repeat domain-containing protein 18A	3.111149788
713	IPI00909015.2	cDNA FLJ58500, highly similar to Cytoplasmic dynein 1 light intermediate chain 1	3.10572052
714	IPI00302309.6	tetratricopeptide repeat domain 17	3.10140872
715	IPI00947454.1	plastin 3	3.097033262
716	IPI00922127.1	cDNA FLJ54708, highly similar to 150 kDa oxygen-regulated protein	3.096722126
717	IPI00658002.1	Isoform 3 of Tyrosine-protein phosphatase non-receptor type 11	3.094691753
718	IPI00976000.1	integrator complex subunit 9	3.094225883
719	IPI00965867.1	importin 11	3.087956667
720	IPI01018192.1	cDNA FLJ30950 fis, clone HCASM1000061	3.086732626
721	IPI00450783.1	Isoform 2 of ER lumen protein retaining receptor 2	3.081044197
722	IPI00295394.2	Cytochrome c oxidase assembly protein COX11, mitochondrial	3.077878475
723	IPI00922333.1	cDNA FLJ50250, highly similar to Structural maintenance of chromosome 1-like 1 pr	3.076677799
724	IPI00333634.4	chromosome 20 open reading frame 194	3.076010942
725	IPI00921944.1	cDNA FLJ54863, highly similar to CTP synthase 1	3.073092699
726	IPI00945851.1	ribophorin I	3.064904928
727	IPI00910541.2	cDNA FLJ58838, highly similar to Homo sapiens radical S-adenosyl methionine and	3.061270952
728	IPI00218266.1	Isoform Long of Vasoactive intestinal polypeptide receptor 1	3.060194254
729	IPI00943678.1	anaphase-promoting complex subunit 1-like	3.059614897
730	IPI00795180.3	cDNA FLJ59673, highly similar to Homo sapiens growth and transformation-depend	3.055035353
731	IPI00329321.3	LYR motif-containing protein 7	3.053508282
732	IPI01013650.1	G protein-coupled receptor 126	3.051602125
733	IPI00977213.1	succinate dehydrogenase complex, subunit D, integral membrane protein	3.050844431
734	IPI00964658.1	septin 11	3.049089909
735	IPI00553172.1	caspase 3, apoptosis-related cysteine peptidase	3.046720266
736	IPI00414005.2	Isoform Short of Sodium/potassium-transporting ATPase subunit alpha-1	3.046513557
737	IPI00984321.2	excision repair cross-complementing rodent repair deficiency, complementation g	3.034834385
738	IPI00976594.1	cDNA FLJ55046, highly similar to Methionyl-tRNA synthetase	3.033221245
739	IPI00303335.3	Nebulin	3.027050972
740	IPI00910598.1	Isoform 2 of Nucleoside diphosphate kinase 6	3.023873806
741	IPI00045456.1	chromosome 10 open reading frame 113	3.021387339
742	IPI00983309.1	STT3, subunit of the oligosaccharyltransferase complex, homolog A (S. cerevisiae)	3.021257162
743	IPI00217240.1	WD repeat-containing protein 75	3.019135952
744	IPI00297626.4	Syntaxin-binding protein 3	3.017946482
745	IPI00217541.3	ATP-dependent RNA helicase DDX51	3.017280817
746	IPI00917443.2	dedicator of cytokinesis 5	3.015888929
747	IPI00855962.1	Isoform 2 of FK506-binding protein 15	3.014819384
748	IPI00983774.1	protein phosphatase 2, catalytic subunit, beta isozyme	3.01027441
749	IPI00184707.1	Isoform 2 of FERM domain-containing protein 6	3.009544134
750	IPI00002424.1	Pleckstrin homology domain-containing family F member 2	3.005003214
751	IPI00853068.2	Hemoglobin alpha-2	3.003887415

752	IPI00945467.1	phosphatidylinositol-specific phospholipase C, X domain containing 2	2.996738434
753	IPI01012689.1	Isoform E1S of G1/S-specific cyclin-E1	2.995843649
754	IPI00909081.2	protein tyrosine phosphatase type IVA 2 isoform 4	2.990827322
755	IPI00922246.1	cDNA FLJ58698, highly similar to cAMP-dependent protein kinase, alpha-catalytic s	2.987887621
756	IPI00965994.1	glucosamine-6-phosphate deaminase 1	2.97500205
757	IPI01010778.1	cDNA FLJ55806, highly similar to Golgi phosphoprotein 3	2.972642422
758	IPI00398129.6	Similar to 3-hydroxybutyrate dehydrogenase type 2	2.972138405
759	IPI00329369.8	ALS2 C-terminal-like protein isoform 3	2.967597723
760	IPI00963825.1	ATP synthase, H+ transporting, mitochondrial Fo complex, subunit C1 (subunit 9)	2.964182854
761	IPI00386679.1	ZNF607 protein	2.962964296
762	IPI00384478.3	family with sequence similarity 227, member B	2.959823608
763	IPI00386908.3	Isoform 2 of Alpha-parvin	2.959525824
764	IPI00785125.2	Putative uncharacterized protein FLJ00310	2.958783627
765	IPI01015780.1	cDNA FLJ57449, highly similar to Notchless homolog 1	2.957838058
766	IPI00792035.2	Isoform 3 of Glyoxalase domain-containing protein 4	2.955942154
767	IPI00909237.1	cDNA FLJ55703, highly similar to Solute carrier family 2, facilitated glucose transpo	2.955162048
768	IPI00966573.1	enolase-phosphatase 1	2.954790831
769	IPI01010550.1	cDNA FLJ55457, highly similar to ATP-dependent RNA helicase DHX8	2.953880548
770	IPI00830092.1	Isoform 2 of Twisted gastrulation protein homolog 1	2.953283787
771	IPI00952785.3	Ca++-dependent secretion activator 2	2.952512264
772	IPI00024464.1	PRO0843	2.951581955
773	IPI00926887.1	glioblastoma amplified sequence	2.949511766
774	IPI00300631.3	Scaffold attachment factor B1	2.948192596
775	IPI00927766.1	NCK interacting protein with SH3 domain	2.946702719
776	IPI00946316.1	karyopherin alpha 4 (importin alpha 3)	2.943986416
777	IPI00102918.1	Isoform 2 of ATR-interacting protein	2.94173336
778	IPI01009299.1	cDNA FLJ60635, highly similar to Angiotensin-converting enzyme, somatic isoform	2.940118551
779	IPI00795577.3	Isoform 7 of Mucin-4	2.939316511
780	IPI00982125.1	FCF1 protein	2.937950373
781	IPI00888999.1	Isoform 2 of PNMA-like protein 2	2.937551737
782	IPI00945513.1	TRAF3 interacting protein 3	2.932587147
783	IPI00980492.1	Conserved hypothetical protein	2.932492495
784	IPI00916535.1	prolyl 4-hydroxylase subunit alpha-1 isoform 3 precursor	2.931104183
785	IPI01010177.1	cDNA FLJ51879, highly similar to Prenylcysteine oxidase	2.928237677
786	IPI00941117.2	cDNA FLJ50310, highly similar to Zinc finger protein 198	2.926929235
787	IPI00984730.1	Similar to DnaJ (Hsp40) homolog, subfamily B, member 1	2.926818609
788	IPI00940357.2	RNA-directed DNA polymerase (reverse transcriptase) domain containing protein	2.926532984
789	IPI00893883.1	NME/NM23 nucleoside diphosphate kinase 4	2.924023867
790	IPI00917184.1	coiled-coil domain containing 150	2.923926115
791	IPI00879333.1	guanine nucleotide binding protein (G protein), beta polypeptide 1-like	2.922519684
792	IPI00902652.1	cDNA FLJ37148 fis, clone BRACE2025333, highly similar to Homo sapiens Na+/H+ exc	2.919394493
793	IPI01009695.1	Bromodomain adjacent to zinc finger domain, 1A isoform b variant	2.913550615
794	IPI00975761.1	processing of precursor 1, ribonuclease P/MRP subunit (S. cerevisiae)	2.907921314
795	IPI00984399.1	lamin-B1 isoform 2	2.905791283
796	IPI00979313.1	family with sequence similarity 118, member B	2.902616739
797	IPI00640929.1	Ribosomal protein S6	2.901382685
798	IPI00979873.1	ribosomal RNA-processing protein 7 homolog A-like, partial	2.89830637

799	IPI00028937.1	Ornithine decarboxylase antizyme 2	2.892297268
800	IPI00967823.1	ELMO/CED-12 domain containing 2	2.891439676
801	IPI00966960.1	acyl-CoA synthetase family member 2	2.886399746
802	IPI00291457.2	Serine/threonine-protein kinase 35	2.885710239
803	IPI00395967.2	TMEM97 protein	2.880130768
804	IPI00798339.4	Isoform 4 of E1A-binding protein p400	2.879770756
805	IPI00215907.2	serine/arginine-rich splicing factor 7	2.876781464
806	IPI00479058.2	40S ribosomal protein S15	2.875518322
807	IPI00792050.1	ribosomal protein L8	2.873644114
808	IPI00442921.1	CDNA FLJ26213 fis, clone ADG07906	2.872962952
809	IPI00514217.6	Succinate-CoA ligase, ADP-forming, beta subunit	2.869974375
810	IPI00552303.3	annexin A11	2.869552851
811	IPI00910936.1	cDNA FLJ61101, highly similar to Eukaryotic translation initiation factor 5	2.865088701
812	IPI00410547.1	uncharacterized LOC400940	2.860070944
813	IPI00917435.1	Isoform 4 of Thyroid adenoma-associated protein	2.85930419
814	IPI00967837.1	multimerin 1	2.855486393
815	IPI00019400.1	Thiopurine S-methyltransferase	2.852811098
816	IPI01013172.1	cDNA FLJ58642, highly similar to Homo sapiens elongation protein 3 homolog (ELP3	2.850491285
817	IPI00981200.1	SID1 transmembrane family, member 2	2.846666098
818	IPI00514742.3	Uncharacterized protein	2.842525959
819	IPI00514385.2	Isoleucyl-tRNA synthetase	2.841986895
820	IPI00917171.1	integrin-linked kinase-associated serine/threonine phosphatase	2.833169699
821	IPI01012107.1	defender against cell death 1	2.83266139
822	IPI00002225.6	LAG1 longevity assurance homolog 4	2.831745625
823	IPI00747361.3	aladin isoform 2	2.829845905
824	IPI00028083.1	Translation initiation factor eIF-2B subunit beta	2.825948238
825	IPI00385079.1	MSTP151	2.825237274
826	IPI00902967.1	cDNA FLJ44468 fis, clone UTERU2026025, moderately similar to SPLICING FACTOR, AR	2.824178696
827	IPI00072541.4	Isoform 3 of PCI domain-containing protein 2	2.824063301
828	IPI00383562.1	Isoform 4 of Fermitin family homolog 1	2.820923328
829	IPI00099463.2	Sphingosine-1-phosphate lyase 1	2.815997601
830	IPI00942583.1	Uncharacterized protein	2.814167023
831	IPI01009798.1	mitochondrial ribosomal protein S28	2.801440001
832	IPI00291643.4	SPRY domain-containing protein 4	2.797506809
833	IPI01011878.1	cDNA PSEC0228 fis, clone HEMBA1006099, weakly similar to COP-COATED VESICLE ME	2.790140152
834	IPI00329826.4	cDNA FLJ46853 fis, clone UTERU3009775, moderately similar to Rattus norvegicus PA	2.78877306
835	IPI00219484.1	Isoform 3 of U1 small nuclear ribonucleoprotein 70 kDa	2.782621145
836	IPI00908503.1	cDNA FLJ50605, moderately similar to Plastin-3	2.78034997
837	IPI00007234.1	Zinc finger protein 510	2.770253658
838	IPI00643715.1	DnaJ (Hsp40) homolog, subfamily C, member 14	2.766234398
839	IPI00383182.1	PP3895	2.7661376
840	IPI01010916.1	major histocompatibility complex, class II, DQ beta 1	2.765980482
841	IPI00936836.2	myomesin 3	2.750969172
842	IPI00964379.1	THO complex 3	2.744432688
843	IPI00001539.8	3-ketoacyl-CoA thiolase, mitochondrial	2.741857767
844	IPI00219866.2	Isoform 2 of Zinc finger Ran-binding domain-containing protein 2	2.718465805
845	IPI00218848.5	ATP synthase, H+ transporting, mitochondrial F0 complex, subunit E	2.712542772
846	IPI00382790.3	Isoform 2 of Sharpin	2.6983459
847	IPI00982409.1	RING finger protein C14orf164-like	2.66461277
848	IPI00028003.1	Cytochrome c oxidase subunit 7B, mitochondrial	2.619421244
849	IPI00945220.1	golgi integral membrane protein 4	2.604919434

Table S4. BPPM-revealed common nonhistone targets of EuHMT1 and 2 in HEK293T cells with the EuHMT21-Y1154A mutant and Hey-SAM **6** as BPPM reagents. These proteins are not present in the control (empty-vector transfected HEK293T cells).

Serial	Accession	Description	Score of EuHMT1	score of EuHMt2
1	IPI00942420.2	Isoform 1 of Histone-lysine N-methyltransferase EHMT1	729.0146117	51.76659226
2	IPI00026781.3	Fatty acid synthase	391.2522674	759.7647235
3	IPI00304925.5	Heat shock 70 kDa protein 1A/1B	235.7833066	321.283962
4	IPI00220644.8	Isoform M1 of Pyruvate kinase isozymes M1/M2	166.911351	149.4408383
5	IPI00449049.5	Poly [ADP-ribose] polymerase 1	160.6497989	260.0815408
6	IPI00645078.1	Ubiquitin-like modifier-activating enzyme 1	148.5826547	212.3655384
7	IPI00420014.2	Isoform 1 of U5 small nuclear ribonucleoprotein 200 kDa helicase	121.9588175	366.528441
8	IPI00893035.1	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, ar	121.9285016	238.1053216
9	IPI00645452.1	Tubulin, beta	118.182215	50.23914671
10	IPI00643041.3	GTP-binding nuclear protein Ran	116.9542315	70.04592967
11	IPI00019502.3	Isoform 1 of Myosin-9	115.9260545	237.2038248
12	IPI00000874.1	Peroxiredoxin-1	113.6827171	177.3387182
13	IPI00013452.11	Bifunctional aminoacyl-tRNA synthetase	106.737942	172.1725242
14	IPI00017726.1	Isoform 1 of 3-hydroxyacyl-CoA dehydrogenase type-2	104.8656714	61.59832907
15	IPI00018146.1	14-3-3 protein theta	103.0258706	77.91386127
16	IPI00219018.7	Glyceraldehyde-3-phosphate dehydrogenase	101.2805254	256.5314114
17	IPI00007928.4	Pre-mRNA-processing-splicing factor 8	100.3890626	291.0308721
18	IPI00021263.3	14-3-3 protein zeta/delta	99.24341798	64.90589786
19	IPI00456969.1	Cytoplasmic dynein 1 heavy chain 1	99.18983865	391.7522783
20	IPI00394838.3	cDNA FLJ56442, highly similar to ATP-citrate synthase	96.82186866	149.8845675
21	IPI00216587.9	40S ribosomal protein S8	94.91858125	49.05260539
22	IPI00218200.8	B-cell receptor-associated protein 31	94.08164167	40.01049781
23	IPI00383581.4	cDNA FLJ61290, highly similar to Neutral alpha-glucosidase AB	92.65108037	164.5848365
24	IPI00297779.7	T-complex protein 1 subunit beta	85.41790318	19.29311204
25	IPI00030179.3	60S ribosomal protein L7	84.80247474	51.23387122
26	IPI00967971.1	ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase)	84.78158069	46.09521461
27	IPI00217223.1	Multifunctional protein ADE2	82.60718107	96.83288717
28	IPI00807545.1	Isoform 3 of Heterogeneous nuclear ribonucleoprotein K	82.27658319	65.32964873
29	IPI00008240.2	Methionyl-tRNA synthetase, cytoplasmic	80.92234015	117.8301554
30	IPI00793443.2	Isoform 1 of Importin-5	80.01624537	106.7574532
31	IPI00007188.6	ADP/ATP translocase 2	79.9827168	56.53837276
32	IPI00783097.4	Glycyl-tRNA synthetase	78.70939565	120.6101208
33	IPI00329801.12	Annexin A5	78.23380566	55.84255219
34	IPI00979136.1	Ribonucleoside-diphosphate reductase	77.46082282	108.3014402
35	IPI00329633.5	Threonyl-tRNA synthetase, cytoplasmic	77.27365184	120.9481163
36	IPI00025091.3	40S ribosomal protein S11	77.253052	71.76152396
37	IPI00889541.2	Isoform 4 of Probable ATP-dependent RNA helicase DDX17	76.96171999	94.11570525
38	IPI00412579.6	60S ribosomal protein L10a	74.75596213	47.42085719
39	IPI00294911.1	Succinate dehydrogenase [ubiquinone] iron-sulfur subunit, mitocho	74.74311042	42.59361458
40	IPI00220301.5	Peroxiredoxin-6	74.10010314	49.33346581
41	IPI00217030.10	40S ribosomal protein S4, X isoform	74.05303216	50.09114695
42	IPI01012026.1	chromodomain helicase DNA binding protein 4	74.04750729	151.010915
43	IPI00024175.3	Isoform 1 of Proteasome subunit alpha type-7	73.91543031	27.6172812
44	IPI00022774.3	Transitional endoplasmic reticulum ATPase	73.26129746	149.5695152
45	IPI00644224.2	cDNA FLJ54020, highly similar to Heterogeneous nuclear ribonucleop	72.63242865	145.3232844
46	IPI00978796.1	cofilin 1 (non-muscle)	71.99949503	85.76440644

47	IPI01014604.1	T-complex protein 1 subunit delta	69.65310025	78.14010024
48	IPI00140420.4	Staphylococcal nuclease domain-containing protein 1	69.51705146	89.10199308
49	IPI00029133.4	ATP synthase subunit b, mitochondrial	69.10584235	49.95107341
50	IPI00018465.1	T-complex protein 1 subunit eta	69.01046848	84.1580894
51	IPI00465365.4	Isoform A1-A of Heterogeneous nuclear ribonucleoprotein A1	66.49793029	212.3037598
52	IPI00291467.7	ADP/ATP translocase 3	65.61314964	51.63087511
53	IPI00012268.3	26S proteasome non-ATPase regulatory subunit 2	64.83733439	127.3789473
54	IPI00878075.1	RAN binding protein 1	64.83252692	38.07210541
55	IPI00917777.1	116 kDa U5 small nuclear ribonucleoprotein component isoform b	64.2363987	102.9461691
56	IPI00549248.4	Isoform 1 of Nucleophosmin	61.72652674	131.7312021
57	IPI00419585.9	Peptidyl-prolyl cis-trans isomerase A	61.64404869	70.94191241
58	IPI00867533.1	60S ribosomal protein L6	61.51985025	110.2808673
59	IPI00002966.2	Heat shock 70 kDa protein 4	61.04511046	85.93793941
60	IPI00027230.3	Endoplasmin	61.04120731	125.1475878
61	IPI00795292.1	Isoform 3 of Nucleoside diphosphate kinase B	60.4085772	53.31095743
62	IPI00215917.3	ADP-ribosylation factor 3	59.20805001	62.3566103
63	IPI00217966.9	Isoform 1 of L-lactate dehydrogenase A chain	58.67067504	178.4921441
64	IPI00029623.1	Proteasome subunit alpha type-6	57.18178296	28.82169819
65	IPI00020127.1	Replication protein A 70 kDa DNA-binding subunit	56.42424345	110.0033898
66	IPI00015018.1	Inorganic pyrophosphatase	56.11794639	170.3900266
67	IPI00027350.3	Peroxiredoxin-2	55.92931271	63.50261545
68	IPI00397526.3	Isoform 1 of Myosin-10	55.7543714	119.0089898
69	IPI00218988.4	Isoform 2 of Adenylate kinase 2, mitochondrial	55.4243381	44.54196548
70	IPI00465361.4	60S ribosomal protein L13	54.99939442	20.32618785
71	IPI00374151.1	thioredoxin-dependent peroxide reductase, mitochondrial isoform I	54.59023404	89.67426276
72	IPI00022891.3	ADP/ATP translocase 1	54.13334846	39.65227294
73	IPI00300371.5	Isoform 1 of Splicing factor 3B subunit 3	53.94768524	97.95910382
74	IPI00219306.1	Protein mago nashi homolog	53.76058745	40.29925013
75	IPI00783781.2	Nuclear pore complex protein Nup205	53.75590611	136.3286684
76	IPI00783378.3	Ubiquitin-conjugating enzyme E2 O	52.98222733	57.0727365
77	IPI00020075.4	Abhydrolase domain-containing protein 10, mitochondrial	52.12625527	25.16440916
78	IPI00941747.1	Calnexin	52.08898282	108.939739
79	IPI00895852.1	cellular nucleic acid-binding protein isoform 5	52.00794601	85.08035088
80	IPI00925853.1	cDNA FLJ60586, highly similar to NADH-ubiquinone oxidoreductase 7	51.66277575	3.832695961
81	IPI00013214.2	cDNA FLJ55599, highly similar to DNA replication licensing factor MCI	51.3785069	91.51911545
82	IPI00644127.2	Isoleucyl-tRNA synthetase, cytoplasmic	50.39426541	136.8429933
83	IPI00003886.3	Isoform 2 of Guanine nucleotide-binding protein-like 3	50.23450446	84.67073178
84	IPI00216308.5	Voltage-dependent anion-selective channel protein 1	49.92797661	30.21461153
85	IPI00216691.5	Profilin-1	49.36589336	39.42420149
86	IPI00642936.2	glutathione S-transferase omega-1 isoform 3	49.1392777	30.95730042
87	IPI00012048.1	Isoform 1 of Nucleoside diphosphate kinase A	48.40361905	43.98702502
88	IPI00170924.2	Histidine triad nucleotide-binding protein 3	48.3692143	64.2205677
89	IPI00739915.3	Putative tubulin beta chain-like protein ENSP00000290377	47.63914037	52.74071693
90	IPI00016832.1	Isoform Short of Proteasome subunit alpha type-1	47.40951896	19.06253815
91	IPI00848298.1	Isoform 2 of Apolipoprotein A-I-binding protein	47.40377808	20.14720654
92	IPI00015920.2	Isoform 1 of Mitochondrial dicarboxylate carrier	47.16355371	28.72216034
93	IPI00927606.1	Glutathione peroxidase 1	46.70900249	70.61924076

94	IPI00411680.11	Isoform 1 of Protein-L-isoaspartate(D-aspartate) O-methyltransferas	46.48782468	32.04926777
95	IPI00219217.3	L-lactate dehydrogenase B chain	46.39972949	175.9723818
96	IPI00555744.6	Ribosomal protein L14 variant	45.61308312	19.45099711
97	IPI00010896.3	Chloride intracellular channel protein 1	44.61412549	22.36223078
98	IPI00218606.7	40S ribosomal protein S23	44.01858759	41.93586826
99	IPI00789370.3	serine hydroxymethyltransferase, mitochondrial isoform 3	43.69448233	62.71231842
100	IPI00411592.2	Isoform 2 of Chromodomain-helicase-DNA-binding protein 3	42.26829982	54.09346461
101	IPI00221088.5	40S ribosomal protein S9	41.80261087	55.15500164
102	IPI00025329.1	60S ribosomal protein L19	41.73298621	33.53769732
103	IPI00289819.5	Cation-independent mannose-6-phosphate receptor	41.57298326	194.5548613
104	IPI00004968.1	Pre-mRNA-processing factor 19	41.54854751	23.14249349
105	IPI00216298.6	Thioredoxin	40.90045071	24.13620567
106	IPI00246975.8	Glutathione S-transferase Mu 3	40.52072382	16.22876978
107	IPI00219078.5	Isoform 1 of Sarcoplasmic/endoplasmic reticulum calcium ATPase 2	40.1899116	105.0190744
108	IPI01017942.1	cyclin-dependent kinase 1	40.14090967	20.30771685
109	IPI00965314.1	ATP-binding cassette, sub-family E (OABP), member 1	40.0531795	3.533854246
110	IPI00981739.1	tubulin folding cofactor A	39.8813827	26.229635
111	IPI00006980.1	chromosome 14 open reading frame 166	39.82267761	26.09525371
112	IPI00016342.1	Ras-related protein Rab-7a	39.55969405	56.70726061
113	IPI00221093.7	40S ribosomal protein S17	38.01497412	25.90276027
114	IPI00015833.1	Coiled-coil-helix-coiled-coil-helix domain-containing protein 3, mit	37.96621513	28.57314563
115	IPI00396321.1	Leucine-rich repeat-containing protein 59	37.65153241	95.53281498
116	IPI00215911.3	DNA-(apurinic or apyrimidinic site) lyase	37.33648491	152.2553763
117	IPI00953417.1	tubulin, beta class I	36.98217416	21.46094656
118	IPI00008998.3	3-hydroxyacyl-CoA dehydratase 3	36.8838954	73.19380951
119	IPI00002824.7	Cysteine and glycine-rich protein 2	36.07404995	55.03849053
120	IPI00515040.1	Isoform 2 of Alpha N-terminal protein methyltransferase 1A	35.88850784	27.32974958
121	IPI00025273.1	Isoform Long of Trifunctional purine biosynthetic protein adenosine	35.88418746	74.20943737
122	IPI00643368.1	Ras homolog gene family, member C	35.85121965	3.590638876
123	IPI00807491.2	Isoform 2 of General transcription factor 3C polypeptide 1	35.73834395	7.998302937
124	IPI00179330.6	Ubiquitin-40S ribosomal protein S27a	35.43276453	19.45930576
125	IPI00641437.1	HEAT repeat containing 1	35.142452	17.69447613
126	IPI00008530.1	60S acidic ribosomal protein P0	34.72628856	111.2969279
127	IPI00646304.4	Peptidyl-prolyl cis-trans isomerase B	34.28955984	48.38023973
128	IPI00220834.8	X-ray repair cross-complementing protein 5	33.88251209	107.6939523
129	IPI00910113.1	cDNA FLJ52902, highly similar to Rab GDP dissociation inhibitor alph	33.65728259	51.53565001
130	IPI00024911.1	Endoplasmic reticulum resident protein 29	33.55024695	7.204618931
131	IPI00295098.3	Signal recognition particle receptor subunit beta	33.44176197	25.10525703
132	IPI00413324.6	60S ribosomal protein L17	33.39969826	55.80420852
133	IPI00908896.2	heterogeneous nuclear ribonucleoprotein H1 (H)	33.32276654	30.50481462
134	IPI00156374.6	Isoform 1 of Importin-4	33.15105653	60.80217481
135	IPI00032903.3	Peptidyl-tRNA hydrolase 2, mitochondrial	33.08517528	37.90535879
136	IPI00012074.3	Isoform 1 of Heterogeneous nuclear ribonucleoprotein R	32.83499622	55.09549785
137	IPI00908754.1	cDNA FLJ50714, moderately similar to Ras-related protein Rap-1b	32.82168961	53.55689955
138	IPI00980410.1	mitochondrial carrier 2	32.69967675	34.56406307
139	IPI00375513.3	Isoform Soluble of Catechol O-methyltransferase	32.68832779	27.21326852
140	IPI00917575.2	cDNA FLJ51046, highly similar to 60 kDa heat shock protein, mitochor	32.64225578	28.52809048

141	IPI00001159.11	Translational activator GCN1	32.41869712	85.26480722
142	IPI00759663.1	Isoform Cytoplasmic+peroxisomal of Peroxiredoxin-5, mitochondrial	32.32378983	30.06219959
143	IPI00017672.4	cDNA FLJ25678 fis, clone TST04067, highly similar to PURINE NUCLEOS	32.2683475	15.28783107
144	IPI00005024.3	Isoform 1 of Myb-binding protein 1A	31.99996924	77.87896466
145	IPI00003870.1	Putative ATP-dependent Clp protease proteolytic subunit, mitochond	31.84814167	14.99601603
146	IPI00018931.6	Vacuolar protein sorting-associated protein 35	31.56291461	47.37325096
147	IPI00013180.2	Protein BUD31 homolog	31.43726826	39.22823119
148	IPI00219678.3	Eukaryotic translation initiation factor 2 subunit 1	31.36786199	38.0262506
149	IPI00073602.1	Exosome complex component MTR3	31.27500772	15.42575288
150	IPI00003815.3	Rho GDP-dissociation inhibitor 1	31.23469472	24.02476215
151	IPI00296913.1	ADP-sugar pyrophosphatase	30.79156375	17.39159036
152	IPI01014863.1	Acetyl-CoA acetyltransferase, cytosolic	30.49259949	22.96209049
153	IPI00893541.1	protein disulfide isomerase family A, member 3	30.36398935	31.07933569
154	IPI00297579.4	Chromobox protein homolog 3	30.30350041	33.87606478
155	IPI00292020.3	Spermidine synthase	30.29854989	14.65871668
156	IPI00031691.1	60S ribosomal protein L9	29.98712397	36.02842021
157	IPI00021347.1	Ubiquitin-conjugating enzyme E2 L3	29.80865288	21.37869477
158	IPI00028055.4	Transmembrane emp24 domain-containing protein 10	29.61652017	48.22544694
159	IPI00293331.3	Ribonucleases P/MRP protein subunit POP1	29.48490858	33.2104609
160	IPI00219153.4	60S ribosomal protein L22	29.35732174	18.14248013
161	IPI00413641.7	Aldose reductase	29.30551267	78.07148504
162	IPI00063242.6	Isoform 2 of Serine/threonine-protein phosphatase PGAM5, mitocho	29.15536594	2.969429731
163	IPI00007611.1	ATP synthase subunit O, mitochondrial	28.96623611	56.21613884
164	IPI00792330.2	ADP-ribosylation factor 4	28.81387091	39.91422415
165	IPI00647400.1	arginyl aminopeptidase (aminopeptidase B)	28.38294697	52.35423279
166	IPI00296370.2	leucine carboxyl methyltransferase 1	28.13103223	32.68146014
167	IPI00219622.3	Proteasome subunit alpha type-2	28.01113796	6.670053482
168	IPI00984405.1	DEAD (Asp-Glu-Ala-Asp) box helicase 5	27.97559333	9.441040039
169	IPI00182533.5	60S ribosomal protein L28	27.8903029	20.32191014
170	IPI00221091.9	40S ribosomal protein S15a	27.87808824	26.42860079
171	IPI00171199.5	Isoform 2 of Proteasome subunit alpha type-3	27.87724471	13.3510921
172	IPI00010414.4	PDZ and LIM domain protein 1	27.65128565	92.54963565
173	IPI00003217.3	Proteasome subunit beta type-7	27.62663984	14.19120789
174	IPI00411706.1	S-formylglutathione hydrolase	27.4816606	31.72799945
175	IPI00306280.4	Density-regulated protein	26.47071457	23.68208313
176	IPI00218693.8	Adenine phosphoribosyltransferase	26.11487603	40.49584842
177	IPI00169413.1	28S ribosomal protein S34, mitochondrial	25.91457605	19.98661828
178	IPI00607799.5	Isoform 1 of 3-hydroxybutyrate dehydrogenase type 2	25.69540119	15.34840512
179	IPI00878876.1	cDNA FLJ51872, highly similar to Small nuclear ribonucleoprotein Sm	25.57746196	15.92051387
180	IPI00456940.5	60S ribosomal protein L7-like 1	25.47294021	14.533535
181	IPI00030877.2	15 kDa selenoprotein isoform 1 precursor	25.47280741	22.05384469
182	IPI00218493.7	Hypoxanthine-guanine phosphoribosyltransferase	25.37085819	12.59149814
183	IPI00003386.3	E3 ubiquitin-protein ligase RBX1	25.28809643	20.6283741
184	IPI00438229.2	Isoform 1 of Transcription intermediary factor 1-beta	25.18329024	65.05789638
185	IPI00260318.3	cyclin-dependent kinase 2 isoform 2	25.16826892	10.64922738
186	IPI00946221.1	ribosomal protein L24	25.13393474	57.49180627
187	IPI00003588.1	Eukaryotic translation elongation factor 1 epsilon-1	25.08676624	28.65892458

188	IPI00926851.1	TRAM adaptor with GOLD domain isoform 2	25.0576334	12.12693405
189	IPI00895865.1	electron transfer flavoprotein subunit alpha, mitochondrial isoform	25.02187204	20.30047679
190	IPI00304612.9	60S ribosomal protein L13a	24.99991417	26.87083387
191	IPI00219155.5	60S ribosomal protein L27	24.93350792	12.54528141
192	IPI00300096.4	Ras-related protein Rab-35	24.8862865	18.3901031
193	IPI00940393.3	EEF1A1 protein	24.6656723	81.66274333
194	IPI00655650.2	40S ribosomal protein S26	24.61743641	23.73561382
195	IPI00025874.2	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase sul	24.13459992	72.23646331
196	IPI00013917.3	40S ribosomal protein S12	24.00824642	11.29956412
197	IPI00007402.3	Importin-7	23.74324346	48.00437307
198	IPI00555749.1	Proteasome 26S ATPase subunit 5 variant (Fragment)	23.71801162	43.66379905
199	IPI01018104.1	cDNA FLJ52561, highly similar to Four and a half LIM domains protei	23.61455297	15.67550874
200	IPI01014503.1	Uncharacterized protein	23.49908495	25.88044834
201	IPI00007811.1	Cyclin-dependent kinase 4	23.48174167	15.09010434
202	IPI00873286.2	cDNA FLJ55750, highly similar to Eukaryotic translation initiation fac	23.45419812	11.49638867
203	IPI00303722.5	Protein FAM136A	23.30880928	36.111835
204	IPI00644674.1	Cytosolic Fe-S cluster assembly factor NUBP2	22.99330688	11.04510665
205	IPI00021828.1	Cystatin-B	22.94549203	24.37318659
206	IPI00006211.4	Isoform 1 of Vesicle-associated membrane protein-associated prote	22.8651557	14.96650648
207	IPI01013843.1	cDNA FLJ59776, highly similar to Prefoldin subunit 3	22.77480769	11.55967331
208	IPI00027270.1	60S ribosomal protein L26	22.55340433	23.58366847
209	IPI00011876.3	cDNA FLJ59758, highly similar to S-methyl-5-thioadenosine phospho	22.38703632	16.71141124
210	IPI00334907.3	Isoform 1 of Phosphatidylinositol transfer protein beta isoform	22.3500936	65.49831676
211	IPI01010050.1	cDNA, FLJ78818, highly similar to Voltage-dependent anion-selective	22.23621225	5.225667953
212	IPI00794911.3	Coatomer subunit gamma	22.19975686	17.72200608
213	IPI00215719.6	60S ribosomal protein L18	22.1474607	27.57744861
214	IPI00105598.3	Proteasome 26S non-ATPase subunit 11 variant (Fragment)	22.03928852	6.919309378
215	IPI00453473.6	Histone H4	21.98193645	11.90534139
216	IPI00643504.1	ring finger protein 2	21.96214581	7.100060463
217	IPI00456758.4	60S ribosomal protein L27a	21.87804031	19.38668346
218	IPI00746438.2	Isoform 2 of 60S ribosomal protein L11	21.80755496	29.98282504
219	IPI01011782.1	cDNA FLJ61430, highly similar to ATP-dependent RNA helicase DDX50	21.78792763	23.28930044
220	IPI00017297.1	Matrin-3	21.75937772	42.7282083
221	IPI00220667.3	Isoform 4 of Hexokinase-1	21.74832654	58.12198567
222	IPI01012526.1	glucosidase, alpha; neutral AB	21.72934151	9.832138062
223	IPI00026824.2	Heme oxygenase 2	21.72010708	72.25547433
224	IPI00221325.3	E3 SUMO-protein ligase RanBP2	21.49732208	30.0734508
225	IPI00908723.1	cDNA FLJ61039, highly similar to Stomatin-like protein 2	21.48810863	18.12077689
226	IPI00081836.3	Histone H2A type 1-H	21.4817996	25.64582062
227	IPI00167941.1	Midasin	21.46257401	114.3588099
228	IPI00429689.3	Serine/threonine-protein phosphatase 2A catalytic subunit beta iso	21.41615653	101.8603373
229	IPI00008380.1	Serine/threonine-protein phosphatase 2A catalytic subunit alpha is	21.40297103	101.5836127
230	IPI00294398.2	Isoform 1 of Hydroxyacyl-coenzyme A dehydrogenase, mitochondrial	21.36481214	6.69530654
231	IPI00006907.1	Probable fructose-2,6-bisphosphatase TIGAR	21.32082558	10.89680028
232	IPI00016458.3	Isoform 1 of L-2-hydroxyglutarate dehydrogenase, mitochondrial	21.23870134	15.10022569
233	IPI00029079.5	GMP synthase [glutamine-hydrolyzing]	21.20630789	37.17861724
234	IPI00028004.2	Proteasome subunit beta type-3	21.16501713	29.57798219

235	IPI00795892.1	profilin 2	21.044034	18.24080682
236	IPI00171611.7	Histone H3.2	20.88544345	28.79178953
237	IPI00645138.2	cDNA FLJ55652, highly similar to Nucleolar GTP-binding protein 1	20.81382537	48.12162352
238	IPI00295485.4	Heat shock 70 kDa protein 4L	20.73207259	50.60684347
239	IPI00022018.1	Dolichol-phosphate mannosyltransferase	20.72329092	19.41536641
240	IPI00009342.1	Ras GTPase-activating-like protein IQGAP1	20.70216203	43.39088202
241	IPI00220993.1	Isoform CNPI of 2',3'-cyclic-nucleotide 3'-phosphodiesterase	20.66739511	24.2182169
242	IPI00427330.3	Ribosome maturation protein SBDS	20.5949223	2.973943233
243	IPI00215790.6	60S ribosomal protein L38	20.52120352	11.53737783
244	IPI00549885.4	Isoform 2 of Pyruvate dehydrogenase E1 component subunit beta, m	20.50771928	63.37418199
245	IPI00010153.5	60S ribosomal protein L23	20.50240135	12.92345476
246	IPI01015295.1	cDNA FLJ30049 fis, clone ADRGL1000033, highly similar to 26S proteas	20.48267412	10.43838573
247	IPI00010271.3	Isoform A of Ras-related C3 botulinum toxin substrate 1	20.18120885	35.11968374
248	IPI00178440.3	Elongation factor 1-beta	19.93448758	11.65764499
249	IPI00445401.4	Isoform 2 of E3 ubiquitin-protein ligase HUWE1	19.93258858	129.8415353
250	IPI00016513.5	Ras-related protein Rab-10	19.7488091	37.5575211
251	IPI00219358.7	Isoform 1 of Mannose-6-phosphate isomerase	19.56478715	13.99072981
252	IPI00472633.7	Isoform 3 of Transformer-2 protein homolog beta	19.54099369	34.55797982
253	IPI00170692.4	Isoform 1 of Vesicle-associated membrane protein-associated prot	19.54041743	10.09439015
254	IPI00012795.3	Eukaryotic translation initiation factor 3 subunit I	19.50349522	62.16252136
255	IPI00019196.3	Ribonuclease P protein subunit p30	19.37051654	13.54499817
256	IPI00029631.1	Enhancer of rudimentary homolog	19.35223317	10.10195589
257	IPI00414168.1	E3 ubiquitin-protein ligase MARCH5	19.35148454	10.86114836
258	IPI00642046.1	ribosomal L1 domain containing 1	19.30265665	42.51666975
259	IPI00218728.4	Isoform 1 of Platelet-activating factor acetylhydrolase IB subunit alp	19.30063415	6.796374559
260	IPI00978910.1	Glia maturation factor beta	19.29461503	6.928934574
261	IPI00020599.1	Calreticulin	19.22097254	58.32678366
262	IPI00411937.4	Nucleolar protein 56	19.08992338	55.92416358
263	IPI00789582.2	cDNA FLJ51552, highly similar to Eukaryotic translation initiation fac	19.07729435	21.82286453
264	IPI00395887.4	Thioredoxin-related transmembrane protein 1	19.07211781	11.23121548
265	IPI00916060.1	DNA-directed RNA polymerase	19.04974222	38.15083671
266	IPI00644531.1	transgelin 2	18.88507462	29.70350599
267	IPI00003766.4	Protein ETHE1, mitochondrial	18.88325882	3.126749754
268	IPI01010461.1	hypoxia up-regulated 1	18.87546682	17.63665271
269	IPI00026970.4	FACT complex subunit SPT16	18.70021462	33.64892483
270	IPI01010797.1	cDNA, FLJ96158, highly similar to Homo sapiens calpain 2, (m/II) larg	18.66959786	30.85051012
271	IPI00219757.13	Glutathione S-transferase P	18.60493469	12.1351583
272	IPI00971018.1	Isoform 1 of TAR DNA-binding protein 43	18.56664896	19.22315741
273	IPI01012383.1	OTU domain, ubiquitin aldehyde binding 1	18.31986809	64.10212636
274	IPI00000821.2	39S ribosomal protein L16, mitochondrial	18.28165388	6.928866386
275	IPI00012750.3	40S ribosomal protein S25	18.24493194	7.302073002
276	IPI00025347.4	Ribosomal RNA small subunit methyltransferase NEP1	17.93830657	6.505105972
277	IPI01014133.1	cDNA FLJ32936 fis, clone TESTI2007533, highly similar to RuvB-like 2	17.87639046	30.22881627
278	IPI00910754.1	L-lactate dehydrogenase A chain isoform 2	17.84153605	9.799121618
279	IPI00017469.1	Sepiapterin reductase	17.78612185	8.42458725
280	IPI00032808.1	Ras-related protein Rab-3D	17.76695919	12.4209168
281	IPI00016786.1	Isoform 2 of Cell division control protein 42 homolog	17.71056509	50.16028833

282	IPI00031169.1	Ras-related protein Rab-2A	17.69229293	30.06599617
283	IPI00917181.1	Ribosomal protein L36a	17.68854117	26.74609089
284	IPI00003927.5	Peptidyl-prolyl cis-trans isomerase D	17.65873814	11.56363511
285	IPI00219077.4	Isoform 1 of Leukotriene A-4 hydrolase	17.58453393	26.63442516
286	IPI00556107.1	DNA-3-methyladenine glycosylase isoform c	17.57844281	34.92022943
287	IPI00029046.1	Malectin	17.57364154	13.42012191
288	IPI00219861.3	Isoform 1 of Low molecular weight phosphotyrosine protein phosph	17.48403931	13.03783321
289	IPI00794545.1	deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial is	17.41640306	20.93088627
290	IPI00185374.4	26S proteasome non-ATPase regulatory subunit 12	17.37279034	18.54274511
291	IPI00018783.1	Inosine triphosphate pyrophosphatase	17.35806489	23.23776221
292	IPI00023542.6	Transmembrane emp24 domain-containing protein 9	17.34732461	12.5365169
293	IPI00014053.3	Isoform 1 of Mitochondrial import receptor subunit TOM40 homolog	17.29182148	51.52494693
294	IPI00025084.3	Calpain small subunit 1	17.26847553	11.42881656
295	IPI00303954.3	cytochrome b5 type B precursor	17.2508781	32.84485555
296	IPI00868999.1	Similar to Acidic ribosomal phosphoprotein P0	17.19005585	6.193804741
297	IPI00942944.1	protein DEK isoform 2	17.0475266	18.61816978
298	IPI00005692.1	28S ribosomal protein S12, mitochondrial	16.97285175	8.977897167
299	IPI00013167.1	28S ribosomal protein S25, mitochondrial	16.91688275	26.91265559
300	IPI00023406.1	Cytochrome c-type heme lyase	16.86869431	6.956211329
301	IPI00396329.1	Ribosome production factor 2 homolog	16.69620633	50.31776333
302	IPI00023647.4	Isoform 1 of Ubiquitin-like modifier-activating enzyme 6	16.67186379	36.5750742
303	IPI00062866.4	Isoform 1 of Zinc finger CCCH-type antiviral protein 1-like	16.60305166	32.87110829
304	IPI00925601.1	5-aminoimidazole-4-carboxamide ribonucleotide formyltransferase	16.5197804	27.30317044
305	IPI00024821.1	26S proteasome non-ATPase regulatory subunit 14	16.49425149	46.22907114
306	IPI00410324.2	Isoform 1 of Protein LSM12 homolog	16.34122086	7.410131693
307	IPI00879638.2	cDNA FLJ58652, highly similar to Probable ATP-dependent RNA helica	16.28180313	8.521591902
308	IPI00005107.2	Niemann-Pick C1 protein	16.24896646	37.4597559
309	IPI00219365.3	Moesin	16.2058394	30.11094594
310	IPI01011282.1	23 kDa protein	16.15997243	13.28340149
311	IPI00168184.8	cDNA FLJ56053, highly similar to Serine/threonine-protein phosphat	16.04391837	5.994200945
312	IPI01011132.1	Isoform 1 of DNA topoisomerase 2-alpha	16.02649283	47.97874737
313	IPI00023064.1	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex assembly f	16.00889349	19.44897747
314	IPI00916802.1	Sjogren syndrome antigen B (autoantigen La)	15.84578443	21.62210894
315	IPI00017283.2	Isoleucyl-tRNA synthetase, mitochondrial	15.54805946	79.32804489
316	IPI00021095.1	Protein Mis18-alpha	15.43418527	11.97754002
317	IPI00216057.6	Sorbitol dehydrogenase	15.38418078	16.8930974
318	IPI00640037.2	cDNA FLJ38496 fis, clone FELIV1000137, highly similar to 60S RIBOSOM	15.3722167	7.36440134
319	IPI00297241.4	Nucleolar pre-ribosomal-associated protein 1	15.26629472	64.38480663
320	IPI00383680.3	dolichyl-diphosphooligosaccharide--protein glycosyltransferase sub	15.2184515	21.20480132
321	IPI00060031.3	ADP-ribosylation factor-like protein 8A	15.20935559	36.73852849
322	IPI00398774.3	Isoform 2 of Mps one binder kinase activator-like 3	15.13529372	12.17595506
323	IPI00909577.1	cDNA FLJ52894, highly similar to Isocitrate dehydrogenase	15.11244202	20.18908143
324	IPI00185503.4	Isoform 2 of ATP-binding cassette sub-family D member 3	14.98766041	30.74609566
325	IPI00411765.3	Isoform 2 of 14-3-3 protein sigma	14.98706102	9.002167463
326	IPI00640703.3	Exportin-5	14.95011711	25.50934196
327	IPI00239077.5	Histidine triad nucleotide-binding protein 1	14.87256193	6.230341673
328	IPI00219575.5	Bleomycin hydrolase	14.86099052	4.411576271

329	IPI00924816.1	Myotrophin	14.80269027	25.96178555
330	IPI01013052.1	caspase 12 (gene/pseudogene)	14.80241656	20.2420795
331	IPI00910164.1	cDNA FLJ53381, highly similar to Monocarboxylate transporter 1	14.7109592	40.8945055
332	IPI00760588.2	Isoform 5 of Double-stranded RNA-specific adenosine deaminase	14.69395542	33.06698012
333	IPI00740142.2	u5 small nuclear ribonucleoprotein 200 kDa helicase-like, partial	14.67643595	13.38677335
334	IPI00304932.2	Ribosomal RNA-processing protein 8	14.64496183	28.81081104
335	IPI00029629.4	E3 ubiquitin/ISG15 ligase TRIM25	14.55224824	41.33140135
336	IPI00021785.2	Cytochrome c oxidase subunit 5B, mitochondrial	14.54167295	11.38466263
337	IPI00737530.1	actin-related protein 2/3 complex subunit 1B-like	14.47739291	17.5527246
338	IPI00218568.7	Pterin-4-alpha-carbinolamine dehydratase	14.44081759	15.21335578
339	IPI00479722.2	Proteasome activator complex subunit 1	14.4245286	8.93192625
340	IPI00646605.3	Isoform 3 of E3 ubiquitin-protein ligase UBR4	14.39617968	55.55451703
341	IPI00953109.2	Isoform 6 of Filamin-B	14.38293767	103.4262052
342	IPI00012315.2	Nucleoside diphosphate kinase 3	14.35925961	7.999052525
343	IPI01009435.1	THO complex subunit 2	14.33485222	37.97984362
344	IPI00853337.1	ADP-ribosylation factor 5	14.32359123	26.4231627
345	IPI00022597.1	NEDD8-conjugating enzyme Ubc12	14.31094575	18.13961244
346	IPI00984586.1	trypsin-3 isoform 4 preproprotein	14.28379822	2.935996056
347	IPI00246058.10	Programmed cell death 6-interacting protein	14.27806425	29.39755034
348	IPI00099996.2	Mitochondrial ribonuclease P protein 1	14.25307441	11.43853045
349	IPI00059764.4	Isoform 1 of Zinc finger protein 428	14.14135289	3.339945316
350	IPI00658013.1	nucleophosmin isoform 3	14.14046288	23.19569707
351	IPI00017381.1	Replication factor C subunit 4	14.09888244	13.64978266
352	IPI00017799.5	cDNA FLJ55158, highly similar to Thioredoxin, mitochondrial	14.06674433	3.320490599
353	IPI01015100.1	Membrane-associated progesterone receptor component 2	14.04842472	12.71248055
354	IPI00220648.5	Phosphomevalonate kinase	13.97088099	8.992396593
355	IPI00947020.2	Ras homolog enriched in brain	13.71872401	11.95468044
356	IPI00024157.1	Peptidyl-prolyl cis-trans isomerase FKBP3	13.6936903	3.0353055
357	IPI00604652.1	NEDD8-activating enzyme E1 regulatory subunit isoform c	13.66355371	18.91427255
358	IPI00329301.3	Isoform 1 of NADH dehydrogenase [ubiquinone] 1 alpha subcomple	13.64425278	16.18613505
359	IPI00893703.1	ribosomal protein S7	13.64069605	17.02438021
360	IPI00152695.2	WD repeat-containing protein 82	13.63987303	20.23001885
361	IPI00290543.5	Isoform 1 of Nuclear protein localization protein 4 homolog	13.63589573	27.5719955
362	IPI00909694.2	alpha-aminoadipic semialdehyde dehydrogenase isoform 3	13.55945539	6.823871851
363	IPI00940720.2	PARP1 protein (Fragment)	13.53916049	12.79487371
364	IPI00004165.1	Fos39347_1	13.52875137	3.22106123
365	IPI00550852.4	Isoform 1 of Dynactin subunit 4	13.52199078	29.76708961
366	IPI00017510.3	Cytochrome c oxidase subunit 2	13.47459793	16.73841619
367	IPI00927715.1	Ribosomal protein L15	13.45742917	15.7077837
368	IPI00927892.1	Mitochondrial-processing peptidase subunit beta	13.39058852	23.17147756
369	IPI00976817.1	poly-U binding splicing factor 60KDa	13.3136878	5.053713322
370	IPI00011694.1	Trypsin-1	13.29701853	25.8478961
371	IPI00916474.2	mannosyl-oligosaccharide glucosidase isoform 2	13.23869753	27.74307871
372	IPI00031647.2	Programmed cell death protein 2-like	13.20120621	12.38316584
373	IPI00443909.1	Isoform 1 of Protein canopy homolog 2	13.19260883	15.38165808
374	IPI01010565.1	cDNA FLJ51063, highly similar to Dihydrolipoyllysine-residue acetyltr	13.17704034	3.651170254
375	IPI01015427.1	cDNA FLJ58247, highly similar to 26S protease regulatory subunit 4	13.14909625	7.447316885

376	IPI00011916.1	Aminoacyl tRNA synthase complex-interacting multifunctional prote	13.07555175	26.68466663
377	IPI00007694.5	Isoform 1 of Protein phosphatase methylesterase 1	13.06180024	12.27838659
378	IPI00005161.3	Actin-related protein 2/3 complex subunit 2	13.05300403	13.93984199
379	IPI00793205.1	cDNA FLJ56571, highly similar to Splicing factor, arginine/serine-rich	13.04667401	2.993952513
380	IPI01013544.1	cDNA FLJ54328, highly similar to Heat shock 70 kDa protein 1	13.04402208	75.04023147
381	IPI00014577.1	Ras-related protein Rab-18	12.96826291	18.26451421
382	IPI00795257.3	Glyceraldehyde-3-phosphate dehydrogenase	12.95435119	42.29723239
383	IPI00917605.1	cytochrome c, somatic	12.88886666	11.01686788
384	IPI00216293.6	Thiosulfate sulfurtransferase	12.8551867	2.791210413
385	IPI00019326.1	Adrenodoxin, mitochondrial	12.77173233	8.928052902
386	IPI00009253.2	Alpha-soluble NSF attachment protein	12.71969557	2.872599125
387	IPI00018671.1	Dual specificity protein phosphatase 3	12.64930868	18.46640468
388	IPI00973816.1	proteasome (prosome, macropain) 26S subunit, non-ATPase, 13	12.64352679	27.08849835
389	IPI01013402.1	cDNA FLJ46429 fis, clone THYMU3014372, highly similar to DNA replic	12.61844373	40.9428072
390	IPI00643876.2	cDNA FLJ50466, highly similar to DNA (cytosine-5)-methyltransferase	12.58668089	15.16066217
391	IPI00025156.4	Isoform 1 of E3 ubiquitin-protein ligase CHIP	12.58575606	8.156795502
392	IPI00745893.2	small ubiquitin-related modifier 2 isoform b precursor	12.5713799	6.090990543
393	IPI00005050.1	28S ribosomal protein S14, mitochondrial	12.56365681	8.25626111
394	IPI00292135.1	Lamin-B receptor	12.54350257	22.18463612
395	IPI00645869.1	Isoform 2 of Protein LAS1 homolog	12.4950614	15.71039009
396	IPI00554521.2	Ferritin heavy chain	12.49393749	31.01583433
397	IPI00645898.3	X-prolyl aminopeptidase (Aminopeptidase P) 1, soluble	12.43623996	21.54259062
398	IPI00011997.4	chromosome 8 open reading frame 33	12.41482973	3.802040815
399	IPI00029266.1	Small nuclear ribonucleoprotein E	12.33372808	12.59852314
400	IPI00794746.1	Uncharacterized protein	12.33148813	6.071681738
401	IPI00945960.1	signal sequence receptor, gamma (translocon-associated protein ga	12.29565358	12.55513477
402	IPI00005705.1	Isoform Gamma-1 of Serine/threonine-protein phosphatase PP1-gar	12.20368648	62.51254654
403	IPI00966877.1	tRNA (cytosine-5-)-methyltransferase NSUN2 isoform 2	12.2026782	27.62003875
404	IPI00025340.3	Pyridoxal phosphate phosphatase	12.19011784	6.942385197
405	IPI01014044.1	Isoform 1 of NADH dehydrogenase [ubiquinone] 1 beta subcomplex	12.06624794	12.12593031
406	IPI00020510.1	CDGSH iron-sulfur domain-containing protein 1	12.0614717	8.634587288
407	IPI00965541.1	CCHC-type zinc finger, nucleic acid binding protein	11.95422387	13.28625417
408	IPI00480093.6	ERO1-like beta	11.92051363	6.071348906
409	IPI00927582.2	Isoform 5 of Serrate RNA effector molecule homolog	11.88848162	30.37669873
410	IPI00979721.1	Isoform 3 of Mini-chromosome maintenance complex-binding prote	11.88371491	12.42308044
411	IPI00218054.2	Selenoprotein H	11.86993909	5.228617668
412	IPI00788938.1	L-lactate dehydrogenase	11.76095319	35.13553357
413	IPI00028481.1	Ras-related protein Rab-8A	11.74769545	19.31895494
414	IPI00154590.6	MKI67 FHA domain-interacting nucleolar phosphoprotein	11.72099137	55.91034389
415	IPI00001655.1	chromosome 16 open reading frame 80	11.67676139	15.90857196
416	IPI00166483.2	transmembrane protein 256	11.63630533	6.518399239
417	IPI00798211.1	tubulin folding cofactor B	11.49359608	11.63812995
418	IPI00930694.1	insulin-like growth factor 2 mRNA-binding protein 1 isoform 2	11.47464442	9.614244461
419	IPI00028277.8	Isoform 1 of Alpha-ketoglutarate-dependent dioxygenase FTO	11.45226812	10.07923675
420	IPI00219512.2	Isoform 2 of Ubiquitin carboxyl-terminal hydrolase isozyme L5	11.39187741	20.55851364
421	IPI00298961.3	Exportin-1	11.3826592	52.11610389
422	IPI01013273.1	cDNA, FLJ79129, highly similar to T-complex protein 1 subunit zeta	11.35524893	7.006772041

423	IPI00793102.1	ribosomal protein L35a	11.35146785	12.99345636
424	IPI00016597.3	Ceroid-lipofuscinosis neuronal protein 6	11.30901694	7.689606667
425	IPI01015738.1	Alpha actinin 4 short isoform	11.29110169	6.77367425
426	IPI00759659.1	Isoform 2 of Golgi membrane protein 1	11.22557688	6.926651716
427	IPI00909691.1	cDNA FLJ50174, highly similar to Homo sapiens SNARE protein Ykt6 (Y	11.2249918	6.76971817
428	IPI00910422.2	cDNA FLJ52802, highly similar to Eukaryotic translation initiation fac	11.21058941	17.07328272
429	IPI01011335.1	cDNA FLJ60435, highly similar to Heterogeneous nuclear ribonucleop	11.08753657	17.91938734
430	IPI00217413.3	ATP-dependent RNA helicase DHX29	11.08337402	18.55859256
431	IPI00910455.1	cDNA FLJ60259, highly similar to Elongation factor Ts, mitochondrial	11.05444479	6.411585569
432	IPI00100460.2	Aspartyl-tRNA synthetase, mitochondrial	11.03229046	27.18651175
433	IPI00250297.3	L-aminoadipate-semialdehyde dehydrogenase-phosphopantethein	11.0196867	31.70700741
434	IPI00290416.3	Isoform 1 of Obg-like ATPase 1	11.0009377	15.52790523
435	IPI00414347.2	Isoform 2 of Ankyrin repeat and SOCS box protein 18	10.96737456	2.774348736
436	IPI00171665.1	Nucleoporin Nup37	10.9279871	10.40621829
437	IPI00984414.2	Elongation factor 1-alpha	10.92542124	18.99169207
438	IPI00908662.2	ribosomal protein L4	10.87329102	3.33714366
439	IPI00003949.1	Ubiquitin-conjugating enzyme E2 N	10.85238695	7.103901386
440	IPI00215920.8	ADP-ribosylation factor 6	10.78922439	8.970561504
441	IPI00002902.5	Polynucleotide 5'-hydroxyl-kinase NOL9	10.75507736	23.95106339
442	IPI00910298.1	cDNA FLJ56236, highly similar to Exportin-2	10.71265221	14.08889389
443	IPI01009326.1	cDNA FLJ53379, highly similar to T-complex protein 1 subunit theta	10.65254021	9.490504503
444	IPI00100656.3	Isoform 1 of Trans-2,3-enoyl-CoA reductase	10.63536382	10.27974463
445	IPI00178431.12	ATP-dependent DNA helicase Q1	10.52583528	25.62801909
446	IPI00011250.3	Ubiquitin carboxyl-terminal hydrolase isozyme L3	10.51327205	2.848175764
447	IPI00003968.1	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, r	10.48416424	22.29064155
448	IPI00792023.2	Ariadne homolog 2 variant (Fragment)	10.43514371	8.87221384
449	IPI00788612.2	LIM and senescent cell antigen-like-containing domain protein 1	10.40838933	54.09051752
450	IPI01015006.1	cDNA FLJ14416 fis, clone HEMBA1005202, highly similar to SIGNAL REC	10.32061744	26.9031744
451	IPI00984941.1	lysophospholipase I	10.24244213	12.11687398
452	IPI01010794.1	THO complex subunit 4	10.18708611	7.619431019
453	IPI00167549.3	ADP-ribosylation factor-like 14 effector protein	10.16257095	2.859004498
454	IPI00299084.1	Transmembrane protein 33	10.13495803	16.83365798
455	IPI00980668.1	heterogeneous nuclear ribonucleoprotein H1 (H)	10.12468576	11.15116978
456	IPI00555878.1	Probable DNA dC->dU-editing enzyme APOBEC-3C	10.09930563	12.15285873
457	IPI00741996.9	KM-PA-2 protein	10.09748459	51.81624365
458	IPI00000006.1	GTPase HRas	10.09243774	15.75251102
459	IPI00744692.1	Transaldolase	10.09027243	24.16368175
460	IPI00015956.3	Exosome complex component RRP40	10.0793612	6.181510687
461	IPI00373882.2	replication factor C subunit 3 isoform 2	10.07904959	6.745334148
462	IPI00645646.1	17 kDa protein	9.952640533	15.1362884
463	IPI00793232.1	cDNA FLJ59109, highly similar to Pyridoxine-5'-phosphate oxidase	9.920525074	3.588242531
464	IPI00218857.1	Isoform 1 of Dual specificity mitogen-activated protein kinase kinas	9.890594721	3.283116579
465	IPI00294943.1	Protein ariadne-1 homolog	9.876232147	18.67661929
466	IPI00926585.1	eukaryotic translation elongation factor 1 beta 2	9.847770691	3.480661154
467	IPI00021266.1	60S ribosomal protein L23a	9.834607363	17.05376267
468	IPI00909181.1	GrpE protein homolog	9.780870676	6.555705309
469	IPI00020602.1	Casein kinase II subunit alpha'	9.737714052	5.432087421

470	IPI00927255.1	LanC lantibiotic synthetase component C-like 1 (bacterial)	9.692457914	16.40298176
471	IPI01012426.1	RAP1B, member of RAS oncogene family	9.666450977	2.987706423
472	IPI00759596.1	Isoform 4 of Heterogeneous nuclear ribonucleoproteins C1/C2	9.631971359	8.547278166
473	IPI00184525.2	Isoform 2 of Methylthioribose-1-phosphate isomerase	9.610852718	3.093814373
474	IPI00019912.3	Peroxisomal multifunctional enzyme type 2	9.566012144	22.61170793
475	IPI00847986.1	Isoform 2 of 40S ribosomal protein S24	9.536608696	15.47692728
476	IPI00939558.2	cDNA FLJ38696 fis, clone KIDNE2001931, highly similar to HETEROGEN	9.513035297	12.05787754
477	IPI00397904.6	Nuclear pore complex protein Nup93	9.509429932	32.65908766
478	IPI00006113.1	DNA-directed RNA polymerase II subunit RPB9	9.481889009	9.967593908
479	IPI00641665.1	interleukin enhancer binding factor 2, 45kDa	9.44649291	10.82668447
480	IPI00329600.3	Probable saccharopine dehydrogenase	9.4371171	9.199316978
481	IPI00100984.4	Isoform 1 of HEAT repeat-containing protein 3	9.334487915	10.81985712
482	IPI00967562.1	heterogeneous nuclear ribonucleoprotein D (AU-rich element RNA b	9.321878672	5.888921976
483	IPI00939491.1	Isoform 2 of Cysteinyl-tRNA synthetase, cytoplasmic	9.261469126	46.16977072
484	IPI00963816.1	phosphoribosylaminoimidazole carboxylase, phosphoribosylamino	9.248252392	7.062841654
485	IPI00012353.1	39S ribosomal protein L3, mitochondrial	9.221636057	23.34996629
486	IPI00215974.2	Queuine tRNA-ribosyltransferase	9.1964674	15.76839066
487	IPI00556157.1	Polypyrimidine tract-binding protein 1 isoform c variant (Fragment)	9.12130475	5.903226376
488	IPI00910419.1	cDNA FLJ52929, highly similar to Dolichyl-diphosphooligosaccharide	9.084523201	6.170256138
489	IPI00983417.1	CD59 molecule, complement regulatory protein	9.036623478	9.638309956
490	IPI00152912.1	Isoform B of Ectodysplasin-A receptor-associated adapter protein	9.005042553	4.228182316
491	IPI00893580.1	HLA-B associated transcript 1	8.983823538	17.40922332
492	IPI00921560.2	Isoform 2 of Polycomb group RING finger protein 1	8.963470936	3.294580221
493	IPI00155601.1	MACRO domain-containing protein 1	8.959338903	3.539744139
494	IPI01011575.1	cDNA FLJ60080, highly similar to 130 kDa leucine-rich protein (Fragm	8.913601875	12.86030412
495	IPI00924895.1	SNRPG protein	8.880480289	8.205285788
496	IPI00514956.1	Rab geranylgeranyltransferase, beta subunit	8.827101946	10.16696143
497	IPI00016746.1	Isoform 1 of Core-binding factor subunit beta	8.752801418	4.835932732
498	IPI00398131.4	Isoform 1 of Protein lin-28 homolog B	8.721138	40.98487496
499	IPI00382459.1	Isoform 3 of Cullin-3	8.651211977	7.626033545
500	IPI00642213.1	RNA binding protein, autoantigenic	8.526372194	18.50947499
501	IPI00184884.6	Non-structural maintenance of chromosomes element 1 homolog	8.472459793	3.866527081
502	IPI00037448.3	Glyoxylate reductase/hydroxypyruvate reductase	8.332123518	37.4287343
503	IPI00334282.2	Protein FAM3C	8.316915274	6.036994934
504	IPI00847896.1	Similar to Glutamate-rich WD repeat-containing protein 1	8.295090675	10.13525772
505	IPI00025086.4	Cytochrome c oxidase subunit 5A, mitochondrial	8.239332438	6.078767776
506	IPI00031106.1	Proteasome assembly chaperone 3	8.186425209	4.018624306
507	IPI00910980.1	IARS protein	8.16508317	13.75889993
508	IPI00927674.1	cDNA FLJ51867, highly similar to Ras-related protein Rab-5A	8.127687931	4.493696213
509	IPI00783302.1	Isoform 1 of Pentatricopeptide repeat-containing protein 3, mitocho	8.112862825	11.22996235
510	IPI00747810.3	fascin homolog 1, actin-bundling protein (Strongylocentrotus purpur	8.111647129	11.07534266
511	IPI00514399.1	ribosomal protein S27	8.091253519	18.15767574
512	IPI00007175.3	Isoform 1 of 60S ribosome subunit biogenesis protein NIP7 homolog	8.060260534	15.19271469
513	IPI00954146.2	cDNA FLJ31682 fis, clone NT2RI2005335, highly similar to MMS19-like	7.972952843	14.81135249
514	IPI00943181.1	proteasome (prosome, macropain) activator subunit 2 (PA28 beta)	7.944501638	6.811487913
515	IPI00336094.5	Isoform 2 of 3-hydroxyacyl-CoA dehydrogenase type-2	7.888287306	8.275798321
516	IPI00008438.1	40S ribosomal protein S10	7.886199474	11.52813387

517	IPI00014198.3	Exosome complex component RRP42	7.845750332	23.2186923
518	IPI00170972.2	UPF0553 protein C9orf64	7.828207016	19.82426786
519	IPI00965022.1	ring finger and CHY zinc finger domain containing 1, E3 ubiquitin prc	7.766227722	2.837225437
520	IPI00394982.1	DEAD (Asp-Glu-Ala-Asp) box polypeptide 52	7.727472305	24.68902898
521	IPI01011073.1	cDNA FLJ55446, highly similar to Superkiller viralicidic activity 2-like	7.663134575	18.66403675
522	IPI00011770.1	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 4	7.633547544	11.51311016
523	IPI00784161.1	Isoform 1 of Transcription elongation factor SPT6	7.614886999	15.28077078
524	IPI00009471.1	WD repeat-containing protein 3	7.614540577	35.85176802
525	IPI00016372.1	Ras-related protein Rab-9A	7.587427855	7.753925085
526	IPI00412714.3	Isoform 4 of Plasminogen activator inhibitor 1 RNA-binding protein	7.568902731	13.90614605
527	IPI00908317.2	ring finger protein 114	7.559832811	2.772971153
528	IPI00973067.1	P450 (cytochrome) oxidoreductase	7.506262779	11.68334246
529	IPI00977430.1	cDNA, FLJ79286, highly similar to T-complex protein 1 subunit gamma	7.426075459	67.55640221
530	IPI00220919.1	Isoform 3 of DNA (cytosine-5)-methyltransferase 1	7.415436745	29.40709066
531	IPI00025178.3	Pre-mRNA-splicing factor SPF27	7.403060198	8.553205252
532	IPI00010218.1	Cytochrome P450 monooxygenase	7.382110596	8.127945662
533	IPI00413958.5	Isoform 2 of Filamin-C	7.362661839	6.055697441
534	IPI00646783.2	TRMT1-like protein isoform 2	7.26845789	11.58942533
535	IPI00979604.1	ribosomal protein S3	7.249117374	10.05483961
536	IPI00010418.6	Isoform 2 of Myosin-Ic	7.232308149	5.530830622
537	IPI00927400.1	leucine-rich repeats and calponin homology (CH) domain containing	7.231191158	10.10188627
538	IPI00642982.1	LONP1 protein	7.214317322	22.44947171
539	IPI00220114.1	Isoform 3 of Slit homolog 2 protein	7.173071146	7.331262827
540	IPI00910979.1	pyruvate kinase isozymes M1/M2 isoform e	7.110543251	16.17550302
541	IPI00967721.1	matrin 3	7.101774693	22.11561322
542	IPI00219840.4	Isoform 1 of AP-2 complex subunit sigma	7.097867489	2.949874163
543	IPI00967490.1	cDNA FLJ56719, highly similar to Probable dimethyladenosine transf	7.090898037	14.38364577
544	IPI01015385.1	Isocitrate dehydrogenase	7.07719636	15.28122592
545	IPI00909939.1	cDNA FLJ52195, highly similar to LIM and SH3 domain protein 1	7.049134731	18.06489325
546	IPI00145260.3	Putative transferase CAF17, mitochondrial	6.990388155	17.54720378
547	IPI00029264.4	Cytochrome c1, heme protein, mitochondrial	6.984880447	6.802279472
548	IPI00790752.1	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 9, 22kDa	6.95763278	4.443318844
549	IPI00008164.2	Prolyl endopeptidase	6.91545105	21.66241336
550	IPI00641719.1	Surfeit 4	6.90372467	10.94220948
551	IPI00178047.7	proline, glutamate and leucine rich protein 1	6.89819169	9.530154705
552	IPI00395777.6	CCR4-NOT transcription complex subunit 7 isoform 2	6.879837036	3.427024841
553	IPI00964815.1	hexosaminidase B (beta polypeptide)	6.878056526	3.192093849
554	IPI00419263.4	enoyl-CoA delta isomerase 2, mitochondrial isoform 1	6.834798098	12.46290755
555	IPI00514078.1	Isoform 5 of Pogo transposable element with ZNF domain	6.818772078	22.88752937
556	IPI00005154.1	FACT complex subunit SSRP1	6.817866087	22.53734565
557	IPI00979883.1	phosphatidylserine synthase 1	6.789215803	7.925734043
558	IPI00017704.3	Coactosin-like protein	6.788805962	3.505471468
559	IPI00915421.1	vitamin K-dependent gamma-carboxylase isoform 2	6.780940533	11.76735616
560	IPI00033770.5	Isoform 1 of Probable alpha-ketoglutarate-dependent dioxygenase	6.766112328	18.29696798
561	IPI00400922.5	Protein RRP5 homolog	6.764267206	92.87314916
562	IPI00976971.1	cDNA FLJ51637, highly similar to Metastasis-associated protein MTA	6.759697199	9.131706953
563	IPI00854687.2	Isoform 2 of Sister chromatid cohesion protein PDS5 homolog A	6.751713753	7.598765135

564	IPI00644653.1	cDNA FLJ56337, highly similar to High mobility group protein B1	6.738008976	33.20047784
565	IPI00969375.1	Hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thio	6.722335577	5.969776154
566	IPI01010659.1	ATP-binding cassette, sub-family C (CFTR/MRP), member 1	6.717027664	9.024774551
567	IPI00219504.1	Isoform 2 of Ubiquitin carboxyl-terminal hydrolase 15	6.623579979	6.502687693
568	IPI00061531.4	39S ribosomal protein L53, mitochondrial	6.616873503	4.070573807
569	IPI00879792.1	Cytochrome b5 reductase 3	6.559267282	2.853048086
570	IPI00871956.1	Similar to Ribosomal protein S2	6.558877945	5.107149363
571	IPI00061525.3	Glucosamine 6-phosphate N-acetyltransferase	6.554480791	15.9050281
572	IPI00922694.1	cDNA FLJ51903, highly similar to Stress-70 protein, mitochondrial	6.526292324	6.769001722
573	IPI00872800.3	cDNA FLJ13369 fis, clone PLACE1000610, weakly similar to MSN5 PROT	6.474249125	7.574740648
574	IPI00645201.1	Ribosomal protein S8	6.465322495	10.60897493
575	IPI00300299.6	Signal peptidase complex subunit 3	6.444749594	9.801193237
576	IPI00375145.1	Isoform Short of Ubiquitin carboxyl-terminal hydrolase 5	6.440598011	22.03447986
577	IPI00925437.1	proteasome (prosome, macropain) 26S subunit, non-ATPase, 2	6.434225321	3.400685072
578	IPI00328885.3	immunoglobulin-like and fibronectin type III domain-containing pro	6.432921171	9.719846487
579	IPI00746351.2	Isoform 1 of Exosome complex exonuclease RRP44	6.390559196	77.7708149
580	IPI00003327.1	ADP-ribosylation factor-like protein 3	6.376639128	15.37890005
581	IPI00908881.2	Glucose-6-phosphate isomerase	6.348568916	48.91212177
582	IPI00908776.2	actinin, alpha 4	6.348047733	11.78577113
583	IPI00964684.1	heat shock 70kDa protein 4-like	6.31890583	14.87951994
584	IPI00301364.3	Isoform 1 of S-phase kinase-associated protein 1	6.236357689	15.45435095
585	IPI00006970.2	Mitochondrial 28S ribosomal protein S2	6.224236012	5.738352776
586	IPI00984288.1	Conserved hypothetical protein	6.20807004	3.053001404
587	IPI00018364.2	Ras-related protein Rap-2b	6.203061819	15.88207364
588	IPI00940901.1	Isoform 2 of RRP12-like protein	6.19925189	26.62055063
589	IPI00854677.1	fused in sarcoma	6.19677496	16.18292904
590	IPI00152998.3	Leucine-rich repeat-containing protein 40	6.18484354	10.00075197
591	IPI00917086.1	cDNA FLJ53711, highly similar to TRF-proximal protein homolog	6.171779394	6.913748503
592	IPI00022832.1	Brain protein 44	6.114253283	5.5035429
593	IPI00293276.10	Macrophage migration inhibitory factor	6.095655203	5.905552149
594	IPI00032957.1	SUMO-conjugating enzyme UBC9	6.089789629	11.05720043
595	IPI00556640.1	PSAP protein	6.067298651	5.829153061
596	IPI00985413.1	e3 SUMO-protein ligase RanBP2-like	6.020735264	10.58321714
597	IPI00464999.2	HEAT repeat-containing protein 6	5.959110975	12.2603209
598	IPI00000181.2	mitochondrial ribosomal protein S24	5.954578161	8.018149137
599	IPI00604431.1	Isoform 2 of Cullin-associated NEDD8-dissociated protein 1	5.931916714	31.62165904
600	IPI00869040.2	Isoform 2 of Cytosolic Fe-S cluster assembly factor NUBP1	5.930080414	24.11399269
601	IPI00419531.2	Cleavage and polyadenylation specificity factor subunit 2	5.919741869	9.586447239
602	IPI00430472.2	Activating signal cointegrator 1 complex subunit 3	5.897911072	15.47793245
603	IPI00031615.3	Protein LLP homolog	5.780694723	3.592237473
604	IPI00292894.5	Pre-rRNA-processing protein TSR1 homolog	5.77294302	36.7349472
605	IPI00795212.1	Isoform 2 of Probable Xaa-Pro aminopeptidase 3	5.72518611	5.582162619
606	IPI00152240.3	Protein kish-A	5.718772411	2.775909185
607	IPI00877999.1	ribosomal protein L3	5.71636343	5.576543808
608	IPI00640892.1	Glyceronephosphate O-acyltransferase	5.714292765	5.636987925
609	IPI00982721.1	transcription elongation factor B (SIII), polypeptide 1 (15kDa, elongi	5.694688559	3.263932943
610	IPI00182289.6	40S ribosomal protein S29	5.664246559	2.92510581

611	IPI00301609.8	Serine/threonine-protein kinase Nek9	5.65256834	11.85293865
612	IPI00394987.3	Isoform 2 of F-box/LRR-repeat protein 12	5.642956734	8.256112576
613	IPI00974544.1	Isoform SV of 14-3-3 protein epsilon	5.52858901	5.959573984
614	IPI00943258.1	Uncharacterized protein	5.526394844	7.282265425
615	IPI00058192.1	Isoform 1 of GDP-fucose protein O-fucosyltransferase 1	5.434002638	26.76087356
616	IPI00743142.2	Isoform 1 of 6-phosphofructokinase, muscle type	5.428494692	22.03418517
617	IPI00472887.3	Isoform 2 of Cytoskeleton-associated protein 5	5.417030573	27.95958161
618	IPI00009597.1	Isoform SMN-delta7 of Survival motor neuron protein	5.387907982	35.93483925
619	IPI00059809.3	secretory carrier membrane protein 1	5.379752636	7.605496883
620	IPI00910384.1	family with sequence similarity 76, member A	5.370937824	4.471651554
621	IPI00917676.1	leucine-rich pentatricopeptide repeat containing	5.370515347	6.448785067
622	IPI00307259.12	DnaJ homolog subfamily C member 13	5.362244606	17.96756458
623	IPI00419919.6	Ribosomal protein L29	5.254568815	5.944256783
624	IPI00023728.1	Gamma-glutamyl hydrolase	5.247240782	13.57725263
625	IPI00021812.2	Neuroblast differentiation-associated protein AHNAK	5.227503061	8.485305548
626	IPI00795318.2	cDNA FLJ54365, highly similar to DNA replication licensing factor MCI	5.194228888	30.22742081
627	IPI00294495.5	Ubiquitin-fold modifier-conjugating enzyme 1	5.176022768	26.05916619
628	IPI00797850.2	Isoform 2 of Dual specificity mitogen-activated protein kinase kinas	5.119152308	3.745077372
629	IPI00300074.4	Phenylalanyl-tRNA synthetase beta chain	5.111426592	20.55725718
630	IPI00412741.1	Isoform 1 of Sideroflexin-4	5.057983398	7.226323843
631	IPI00917430.1	splicing factor 3b, subunit 1, 155kDa	5.043381691	8.899055958
632	IPI00744575.3	Isoform Short of Probable ubiquitin carboxyl-terminal hydrolase FAF	4.988269329	9.697586775
633	IPI00306383.2	Isoform 2 of Secretory carrier-associated membrane protein 3	4.843749523	10.43175745
634	IPI00747530.3	Isoform 3 of Tax1-binding protein 1	4.822367668	9.279594421
635	IPI00004839.1	Crk-like protein	4.729190826	7.640843868
636	IPI01012475.1	protein disulfide isomerase family A, member 3	4.72342968	3.185017109
637	IPI00020729.1	Insulin receptor substrate 4	4.552227974	8.339183807
638	IPI00644082.1	Isoform 3 of tRNA guanosine-2'-O-methyltransferase TRM11 homolo	4.451956272	4.14463377
639	IPI00977506.2	prohibitin	4.449507236	48.61954975
640	IPI00304409.3	Calcium-regulated heat stable protein 1	4.354152679	7.878768682
641	IPI00922290.1	cDNA FLJ53094, highly similar to Receptor expression-enhancing pro	4.316569328	3.844114304
642	IPI00439944.1	ARCN1 protein	4.308863163	6.997230768
643	IPI00022640.1	Neurogranin	4.29251194	3.468683958
644	IPI00013860.3	3-hydroxyisobutyrate dehydrogenase, mitochondrial	4.278584957	3.140899181
645	IPI00010463.5	GTP-binding protein 1	4.245082378	9.582326889
646	IPI00235412.7	dynamin 1-like	4.143373489	18.62033153
647	IPI00924593.1	cDNA FLJ52880, highly similar to Malate dehydrogenase, mitochondr	4.139891624	4.061082363
648	IPI00332511.5	Serine/threonine-protein phosphatase 2A 55 kDa regulatory subuni	4.128800392	10.31970835
649	IPI00894559.1	NDUFA10 protein	4.117241383	4.028757572
650	IPI00947406.1	chromosome 7 open reading frame 50	4.103247643	8.806075096
651	IPI00026328.3	Thioredoxin domain-containing protein 12	4.094028473	6.261412382
652	IPI00552646.1	chromosome X open reading frame 38	4.068939209	2.786943197
653	IPI00218050.2	Isoform 2 of DNA mismatch repair protein Mlh3	4.058671951	4.380568504
654	IPI00917166.1	dynactin 1	3.930629492	8.637899637
655	IPI00909432.1	Isoform 4 of Glutathione S-transferase kappa 1	3.926178217	3.271624804
656	IPI00925058.1	Ribosomal protein L15	3.923327684	3.402714968
657	IPI00293078.1	Probable ATP-dependent RNA helicase DDX27	3.905130386	10.28052139

658	IPI00032851.1	Coatomer subunit zeta-1	3.897438288	15.62135386
659	IPI00015891.1	Prefoldin subunit 4	3.881435871	3.21504283
660	IPI00749054.2	Isoform 3 of tRNA (uracil-5-)-methyltransferase homolog	3.856481314	8.432951927
661	IPI00847768.1	DEAD-box protein p72	3.846444368	3.573546648
662	IPI00217405.1	Isoform 1 of E3 ubiquitin-protein ligase UBR1	3.834622383	8.006597757
663	IPI00056357.3	UPF0556 protein C19orf10	3.834048986	5.605211735
664	IPI00106698.2	Protein pelota homolog	3.829904079	3.965002298
665	IPI00642454.1	Ribosomal protein L7a	3.825775385	2.914595127
666	IPI00026358.3	Gamma-aminobutyric acid receptor-associated protein-like 2	3.812661886	6.262497902
667	IPI00789134.5	Glyceraldehyde-3-phosphate dehydrogenase	3.793359756	20.75409532
668	IPI01015636.1	pogo transposable element with ZNF domain	3.788869143	3.18219471
669	IPI00005218.1	Molybdopterin synthase catalytic subunit	3.785743475	4.095580101
670	IPI00788157.1	Isoform 2 of 5'-3' exoribonuclease 2	3.778432369	31.18069959
671	IPI00930594.1	acyl-coenzyme A thioesterase 13 isoform 2	3.753232479	3.017426491
672	IPI00103599.1	BRI3-binding protein	3.745472908	7.51076436
673	IPI01010993.1	19 kDa protein	3.739369869	2.845736027
674	IPI00916188.1	Nucleolin	3.739291668	19.88579917
675	IPI00797533.2	mitochondrial ribosomal protein L46	3.728572607	2.894883871
676	IPI00965481.1	ribosomal protein S3A	3.728090525	3.205724955
677	IPI00219025.3	Glutaredoxin-1	3.71999979	3.495915413
678	IPI00456702.3	Isoform 2 of COMM domain-containing protein 4	3.700555325	3.986202955
679	IPI00647001.1	Acidic (Leucine-rich) nuclear phosphoprotein 32 family, member B	3.680024862	4.003193855
680	IPI00554617.2	cDNA FLJ57277, highly similar to Tripeptidyl-peptidase 1	3.667347193	7.41711092
681	IPI00031982.1	Isoform 1 of Nck-associated protein 1	3.667258739	22.90902853
682	IPI00893242.1	aminoacyl tRNA synthetase complex-interacting multifunctional pro	3.666265249	5.994104862
683	IPI00925990.1	DEAD (Asp-Glu-Ala-Asp) box helicase 56	3.663386106	3.793273449
684	IPI00026167.5	NHP2-like protein 1	3.65789938	16.38205147
685	IPI00299506.9	Isoform 2 of Glucosamine--fructose-6-phosphate aminotransferase	3.639338017	19.81249595
686	IPI00983028.1	proline synthetase co-transcribed homolog (bacterial)	3.639157534	2.893331528
687	IPI00003004.1	Mitochondrial glutamate carrier 1	3.633758783	3.708626747
688	IPI00794773.1	cDNA FLJ51912, highly similar to Fumarylacetoacetase	3.633337021	3.022817612
689	IPI00642816.2	Isoform 1 of Signal recognition particle 9 kDa protein	3.61745286	3.627454281
690	IPI00106642.4	Dihydropyrimidinase-like 2	3.612304211	4.149096012
691	IPI01018285.1	FAD-dependent oxidoreductase domain containing 1	3.607123137	2.839509249
692	IPI00032911.3	TATA box-binding protein-like protein 1	3.604743958	7.538852692
693	IPI00333763.7	Glutaredoxin-related protein 5, mitochondrial	3.548946619	4.103365421
694	IPI00743342.2	Four and a half LIM domains protein 2	3.543523312	8.178222895
695	IPI00009148.1	Diphosphoinositol polyphosphate phosphohydrolase 1	3.536843538	4.002020359
696	IPI00032827.1	Pre-mRNA branch site protein p14	3.524932384	8.709682941
697	IPI00306642.3	DDB1- and CUL4-associated factor 13	3.523300171	3.617166281
698	IPI00980440.1	aminopeptidase puromycin sensitive	3.513344288	3.441233397
699	IPI00926546.2	TIA1 cytotoxic granule-associated RNA binding protein	3.510085106	3.830174446
700	IPI01015488.1	estrogen-related receptor alpha	3.497158766	3.681059122
701	IPI00015609.1	DDB1- and CUL4-associated factor 16	3.492106438	3.067657709
702	IPI00658162.2	cDNA FLJ36570 fis, clone TRACH2011302, highly similar to SELENIDE,W	3.480367899	4.516431808
703	IPI00980890.2	cDNA FLJ58780, highly similar to Homo sapiens lysosomal-associate	3.47510457	6.85842371
704	IPI00642486.1	ubiquitin related modifier 1	3.474912643	3.344897985

705	IPI00917594.1	proteasome (prosome, macropain) 26S subunit, non-ATPase, 1	3.442355156	8.706087828
706	IPI00170596.1	Paired amphipathic helix protein Sin3a	3.438802481	5.449266911
707	IPI00927538.1	transducin (beta)-like 2	3.418755531	7.273132324
708	IPI00902463.1	cDNA FLJ46898 fis, clone UTERU3022168, highly similar to Protein FAM	3.396526098	21.77505827
709	IPI00783250.1	TRIP12 protein	3.389698505	9.825669765
710	IPI00412713.4	Sorting and assembly machinery component 50 homolog	3.37523222	7.850270987
711	IPI00909956.1	cDNA FLJ59103, highly similar to T-complex protein 1 subunit epsilon	3.369731665	4.03897047
712	IPI00797802.1	mitochondrial 2-oxoglutarate/malate carrier protein isoform 3	3.350028038	6.823238134
713	IPI00643263.1	Vps20-associated 1 homolog	3.347207785	11.76907969
714	IPI00384155.1	Full-length cDNA clone CS0DI002YH20 of Placenta of Homo sapiens	3.333331585	4.626288414
715	IPI00031526.3	chromosome 19 open reading frame 43	3.332810879	9.43253684
716	IPI00748354.1	Isoform 1 of Mitochondrial intermembrane space import and assem	3.330058098	12.85658073
717	IPI00642244.2	ER membrane protein complex subunit 1	3.329001665	6.481980085
718	IPI00816513.2	mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)	3.318204403	3.714787483
719	IPI00646750.2	cytochrome c oxidase assembly factor 6 homolog (S. cerevisiae)	3.313561916	3.490073919
720	IPI00220373.5	Insulin-degrading enzyme	3.309896469	14.45638919
721	IPI00978986.1	nucleoporin 160kDa	3.309469938	31.80257511
722	IPI01009290.1	cDNA FLJ52916, highly similar to ribosomal RNA methyltransferase 1	3.304074526	2.816954136
723	IPI00396056.6	Isoform p18 of 7,8-dihydro-8-oxoguanine triphosphatase	3.296686649	3.553375483
724	IPI00646767.1	nuclear distribution C homolog (A. nidulans)	3.292669296	7.126162052
725	IPI01015765.1	cDNA FLJ57240, highly similar to Mitochondrial proteins import recep	3.291688919	14.81278539
726	IPI00927379.1	LUC7-like	3.282767773	3.292594433
727	IPI00013396.3	U1 small nuclear ribonucleoprotein C	3.261357307	7.142628908
728	IPI00169325.1	WD repeat-containing protein 36	3.25672245	25.42709994
729	IPI00384571.3	MRPL43 protein (Fragment)	3.250708818	3.587357759
730	IPI00978302.1	cofilin 1 (non-muscle)	3.245178699	9.820427179
731	IPI00218895.6	DNA-directed RNA polymerase II subunit RPB7	3.242640018	8.362938881
732	IPI00791782.2	Isoform 3 of Transmembrane protein 85	3.238839149	3.189184427
733	IPI00877664.1	HNRPC protein	3.229525328	6.038960695
734	IPI00218838.1	Isoform 2 of Glomulin	3.226986408	3.44948864
735	IPI00019380.1	Nuclear cap-binding protein subunit 1	3.226590872	38.25334501
736	IPI00294211.2	Pre-mRNA-splicing factor ATP-dependent RNA helicase PRP16	3.224330187	3.504382849
737	IPI00946754.1	Protease serine 1	3.217814922	9.725289345
738	IPI00640188.1	PRA1 domain family, member 2	3.215258598	3.194475889
739	IPI00006574.1	family with sequence similarity 49, member A	3.203294277	6.060539007
740	IPI00787239.1	Isoform 2 of Transmembrane protein 70, mitochondrial	3.190694809	3.062651634
741	IPI00927631.1	nuclear cap binding protein subunit 2, 20kDa	3.180920124	3.165471554
742	IPI00796478.1	Synaptogyrin 1	3.178820372	3.604151011
743	IPI00974419.1	minichromosome maintenance complex component 4	3.172092199	10.73406553
744	IPI00965753.1	neurolysin (metallopeptidase M3 family)	3.166867971	7.52709794
745	IPI01013815.1	cDNA FLJ54736, highly similar to Scaffold attachment factor B	3.160569906	6.301415205
746	IPI00908568.1	replication factor C subunit 5 isoform 3	3.156708956	10.77553797
747	IPI00552972.3	ribophorin II	3.154435635	3.805977583
748	IPI00105068.2	mannose-P-dolichol utilization defect 1	3.145113468	7.013731241
749	IPI00894025.1	ribosomal protein L10	3.142888308	3.099099159
750	IPI00966408.1	hydroxysteroid (17-beta) dehydrogenase 11	3.126099825	5.856959581
751	IPI00647467.1	Isoform 2 of Protein-tyrosine phosphatase mitochondrial 1	3.116794348	6.496219635

752	IPI00399195.1	Isoform 2 of Cirhin	3.110436678	3.85973525
753	IPI00983399.1	RAB15, member RAS oncogene family	3.108854532	3.227412224
754	IPI00030847.3	Transmembrane 9 superfamily member 3	3.108247519	6.353409529
755	IPI00908532.1	cDNA FLJ57633, highly similar to Lysosome-associated membrane gly	3.107279062	4.186969757
756	IPI00377084.1	ribonuclease P/MRP protein subunit POP5 isoform c	3.103389263	2.764899731
757	IPI00063130.2	Transmembrane protein 205	3.094141006	3.628275633
758	IPI00027704.5	DNA primase small subunit	3.088574886	10.48273039
759	IPI00940786.2	cDNA FLJ50873, highly similar to DNA replication licensing factor MCI	3.08483696	5.70458436
760	IPI00872761.2	fragile X mental retardation 1 protein isoform ISO12	3.077638626	3.697481632
761	IPI00916398.1	IMP4, U3 small nucleolar ribonucleoprotein, homolog (yeast)	3.07574439	10.13596678
762	IPI00152377.1	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase sul	3.0711689	8.360854387
763	IPI00410157.4	Isoform 4 of CCR4-NOT transcription complex subunit 1	3.069497108	3.153642654
764	IPI00513841.1	Nicastrin	3.068019867	10.66344333
765	IPI00396331.4	Zinc finger protein 224	3.063132048	3.123922348
766	IPI00796102.1	actin related protein 2/3 complex, subunit 3, 21kDa	3.056749344	3.016141176
767	IPI01011483.1	Fanconi anemia, complementation group I	3.054372311	7.051631212
768	IPI00655681.1	succinate dehydrogenase cytochrome b560 subunit, mitochondrial is	3.052879572	3.373564482
769	IPI00006442.1	Coilin	3.052608252	8.148685455
770	IPI00007052.6	Mitochondrial fission 1 protein	3.050519466	3.074013233
771	IPI00166013.1	AAR2 splicing factor homolog (S. cerevisiae)	3.047001362	6.960672855
772	IPI00884370.1	DFNA5 protein family protein	3.045160055	2.985293627
773	IPI00879437.1	prolyl 4-hydroxylase, beta polypeptide	3.028154373	2.977276087
774	IPI00328089.16	Isoform 2 of Transcription factor HIVEP3	3.015028477	3.170693398
775	IPI00329332.1	Syntaxin-12	3.009957552	28.30562234
776	IPI00639819.1	TAR DNA binding protein	3.003374338	25.38175821
777	IPI00983093.1	poly(A) binding protein, cytoplasmic 1	2.986663818	2.845418215
778	IPI00982362.1	Uncharacterized protein	2.985399246	5.20803833
779	IPI00418523.1	Similar to Nucleolar complex protein 2 homolog	2.976199865	3.104102135
780	IPI00008753.1	Metallothionein-1X	2.968417406	2.829637289
781	IPI00001146.1	U6 snRNA-associated Sm-like protein LSm6	2.96451807	5.99358058
782	IPI00892695.1	brain and reproductive organ-expressed (TNFRSF1A modulator)	2.953055382	3.993766069
783	IPI00977024.1	ring finger protein 170	2.939703226	5.906941414
784	IPI00401264.5	Endoplasmic reticulum resident protein 44	2.93690753	6.655044317
785	IPI00024775.1	Ras-related protein Rab-7L1	2.936436415	5.391480207
786	IPI00304935.6	Protein SAAL1	2.925481319	2.954362869
787	IPI00797749.1	cDNA FLJ34514 fis, clone HLUNG2006599, highly similar to Syntaxin-4	2.903419971	3.420435667
788	IPI00916988.1	Isoform 2 of RNA pseudouridylate synthase domain-containing prot	2.897808552	8.946968317
789	IPI00221232.9	Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-	2.892389297	2.927713156
790	IPI00556364.1	Interleukin enhancer binding factor 3 isoform c variant (Fragment)	2.874989986	7.323945999
791	IPI00916648.1	WD repeat and FYVE domain containing 1	2.858377695	7.127812862
792	IPI00477181.2	ring finger protein 220	2.857547522	3.856014013
793	IPI00026119.6	Ubiquitin-activating enzyme E1	2.853475094	4.151154995
794	IPI00978325.1	cathepsin C	2.779670954	3.754447222
795	IPI00945551.1	cms1 ribosomal small subunit homolog (yeast)	2.775691748	7.515066147
796	IPI00643908.3	cDNA FLJ53700, highly similar to Hepatoma-derived growth factor	2.774966478	6.971341133
797	IPI00477012.1	Isoform 2 of Double-stranded RNA-specific editase 1	2.773857355	6.595125914
798	IPI00019488.1	U3 small nucleolar ribonucleoprotein protein IMP3	2.759111643	3.54423666
799	IPI00514669.1	SH3 domain binding glutamic acid-rich protein like 3	2.708771467	2.784610033

Table S5. BPPM-revealed nonhistone targets of EuHMT1 and 2 in HEK293T cells using tandem mass tagging (TMT).

Serial	Accession	Description	EuHMT1 /Control	EuHMT2/control	EuHMT2/EuHMT1
1	IPI00942420.2	Isoform 1 of Histone-lysine N-methyltransferase EHMT1	11.339	2.382	0.177
2	IPI00186290.6	Elongation factor 2	2.165	2.251	1.068
3	IPI00220795.4	Isoform 2 of Histone-lysine N-methyltransferase EHMT2	3.336	8.583	2.815
4	IPI00792677.1	cDNA FLJ60097, highly similar to Tubulin alpha-ubiquitous	3.235	2.486	0.974
5	IPI00218343.4	Tubulin alpha-1C chain	2.023	1.946	0.988
6	IPI00909140.9	cDNA FLJ56903, highly similar to Tubulin beta-7 chain	1.940	1.987	1.135
7	IPI00007752.1	Tubulin beta-2C chain	1.973	1.748	0.805
8	IPI00984352.1	protein arginine methyltransferase 1	2.422	2.021	0.829
9	IPI00031370.3	Tubulin beta-2B chain	1.870	1.780	0.964
10	IPI00396485.3	Elongation factor 1-alpha 1	2.624	2.212	0.906
11	IPI00021439.1	Actin, cytoplasmic 1	2.832	2.426	0.761
12	IPI00219018.7	Glyceraldehyde-3-phosphate dehydrogenase	2.653	2.468	0.964
13	IPI00414676.6	Heat shock protein HSP 90-beta	2.646	1.937	0.874
14	IPI00022977.1	Creatine kinase B-type	2.975	2.219	0.698
15	IPI00784295.2	Isoform 1 of Heat shock protein HSP 90-alpha	3.106	2.186	0.803
16	IPI00455383.4	Isoform 2 of Clathrin heavy chain 1	3.055	2.569	0.858
17	IPI00922693.1	cDNA FLJ53662, highly similar to Actin, alpha skeletal mus	3.362	2.119	0.630
18	IPI00304925.5	Heat shock 70 kDa protein 1A/1B	2.487	1.846	0.756
19	IPI00465248.5	Isoform alpha-enolase of Alpha-enolase	1.863	1.812	0.945
20	IPI00925572.1	asparagine synthetase [glutamine-hydrolyzing] isoform b	2.863	2.544	0.843
21	IPI00014424.1	Elongation factor 1-alpha 2	2.509	2.783	1.109
22	IPI00911039.1	cDNA FLJ54408, highly similar to Heat shock 70 kDa protein	2.594	1.448	0.558
23	IPI00807545.1	Isoform 3 of Heterogeneous nuclear ribonucleoprotein K	2.952	2.073	0.699
24	IPI00465439.5	Fructose-bisphosphate aldolase A	2.469	2.025	0.825
25	IPI00784154.1	60 kDa heat shock protein, mitochondrial	2.529	1.899	0.719
26	IPI00000874.1	Peroxiredoxin-1	2.765	2.032	0.763
27	IPI00658109.1	Isoform 1 of Creatine kinase U-type, mitochondrial	3.039	2.232	0.709
28	IPI00644224.2	cDNA FLJ54020, highly similar to Heterogeneous nuclear ri	2.624	1.702	0.683
29	IPI00219217.3	L-lactate dehydrogenase B chain	2.764	2.605	1.007
30	IPI00644079.4	cDNA FLJ44920 fis, clone BRAMY3011501, highly similar to H	2.731	1.798	0.658
31	IPI00026781.3	Fatty acid synthase	2.964	2.663	0.869
32	IPI00011200.5	D-3-phosphoglycerate dehydrogenase	2.619	1.963	0.741
33	IPI00219446.5	Phosphatidylethanolamine-binding protein 1	2.175	1.704	0.759
34	IPI00012011.6	Cofilin-1	3.308	2.653	0.824
35	IPI00784090.2	T-complex protein 1 subunit theta	2.631	2.103	0.802
36	IPI00003865.1	Isoform 1 of Heat shock cognate 71 kDa protein	2.102	1.703	0.773
37	IPI00011253.3	40S ribosomal protein S3	3.011	2.497	0.818
38	IPI01011191.1	cDNA FLJ59681, highly similar to Plastin-3	3.086	1.659	0.470
39	IPI00220327.4	Keratin, type II cytoskeletal 1	2.287	1.729	0.774
40	IPI00021290.5	ATP-citrate synthase	2.196	2.134	0.894
41	IPI00479186.7	Isoform M2 of Pyruvate kinase isozymes M1/M2	2.648	2.020	0.754
42	IPI00220740.1	Isoform 2 of Nucleophosmin	2.539	1.996	0.753
43	IPI00216691.5	Profilin-1	4.000	2.225	0.589
44	IPI00419585.9	Peptidyl-prolyl cis-trans isomerase A	2.683	1.953	0.661

45	IPI00418471.6	Vimentin	1.785	1.825	1.011
46	IPI00797270.4	Isoform 1 of Triosephosphate isomerase	2.634	1.881	0.729
47	IPI00291006.2	Malate dehydrogenase, mitochondrial	2.107	2.238	1.075
48	IPI01015565.1	ubiquitin C	3.479	2.517	0.582
49	IPI00643041.3	GTP-binding nuclear protein Ran	2.540	1.998	0.793
50	IPI00645078.1	Ubiquitin-like modifier-activating enzyme 1	2.139	2.097	0.918
51	IPI00909207.1	cDNA FLJ60461, highly similar to Peroxiredoxin-2	2.018	1.734	0.840
52	IPI01011912.1	Phosphoglycerate kinase	2.799	2.184	0.814
53	IPI00299524.2	Condensin complex subunit 1	3.358	2.968	0.859
54	IPI00795292.1	Isoform 3 of Nucleoside diphosphate kinase B	3.114	2.009	0.644
55	IPI00217966.9	Isoform 1 of L-lactate dehydrogenase A chain	2.646	2.818	1.050
56	IPI00855957.3	Isoform 2 of Far upstream element-binding protein 2	2.656	2.098	0.821
57	IPI00003362.3	78 kDa glucose-regulated protein	2.163	1.669	0.794
58	IPI00010796.1	Protein disulfide-isomerase	2.409	1.888	0.778
59	IPI00554786.5	Isoform 5 of Thioredoxin reductase 1, cytoplasmic	2.733	2.238	0.792
60	IPI00937615.2	Elongation factor 1-gamma	2.291	2.167	0.991
61	IPI00414696.1	Isoform A2 of Heterogeneous nuclear ribonucleoproteins	2.808	2.370	0.877
62	IPI00297779.7	T-complex protein 1 subunit beta	1.750	1.661	0.948
63	IPI00012048.1	Isoform 1 of Nucleoside diphosphate kinase A	2.553	1.936	0.802
64	IPI00793443.2	Isoform 1 of Importin-5	2.190	2.055	0.830
65	IPI00966238.2	cDNA FLJ51907, highly similar to Stress-70 protein, mitocho	2.193	1.918	0.863
66	IPI00019755.3	Glutathione S-transferase omega-1	2.420	2.095	0.818
67	IPI00013881.6	Heterogeneous nuclear ribonucleoprotein H	1.974	2.192	1.090
68	IPI00013452.11	Bifunctional aminoacyl-tRNA synthetase	2.831	2.270	0.795
69	IPI00604620.3	Nucleolin	2.230	1.946	0.881
70	IPI00024145.2	Isoform 2 of Voltage-dependent anion-selective channel	2.874	2.206	0.733
71	IPI00216298.6	Thioredoxin	3.674	2.068	0.536
72	IPI00001639.2	Importin subunit beta-1	2.224	1.761	0.821
73	IPI00008530.1	60S acidic ribosomal protein P0	2.829	2.782	0.962
74	IPI00016610.2	Poly(rC)-binding protein 1	3.121	2.617	0.862
75	IPI00554723.5	60S ribosomal protein L10	2.698	1.944	0.785
76	IPI00815732.1	Isoform 2 of Multifunctional protein ADE2	2.572	1.956	0.769
77	IPI00021304.1	Keratin, type II cytoskeletal 2 epidermal	2.336	3.532	1.906
78	IPI00411704.9	Isoform 1 of Eukaryotic translation initiation factor 5A-1	2.761	1.999	0.668
79	IPI00021263.3	14-3-3 protein zeta/delta	2.606	2.007	0.801
80	IPI00000816.1	Isoform 1 of 14-3-3 protein epsilon	2.601	1.814	0.760
81	IPI00449049.5	Poly [ADP-ribose] polymerase 1	2.248	1.965	0.893
82	IPI00303568.3	Prostaglandin E synthase 2	2.252	2.005	0.855
83	IPI00025273.1	Isoform Long of Trifunctional purine biosynthetic protein	2.376	2.243	0.935
84	IPI00027230.3	Endoplasmin	1.765	1.717	0.973
85	IPI00844578.1	ATP-dependent RNA helicase A	2.631	2.390	0.936
86	IPI01012004.1	cDNA PSEC0175 fis, clone OVARC1000169, highly similar to P	2.518	2.258	0.807
87	IPI00003881.5	Heterogeneous nuclear ribonucleoprotein F	2.285	2.199	0.900
88	IPI00413324.6	60S ribosomal protein L17	2.389	1.800	0.737
89	IPI00759596.1	Isoform 4 of Heterogeneous nuclear ribonucleoproteins C	2.809	2.386	0.685
90	IPI01014604.1	T-complex protein 1 subunit delta	2.465	1.999	0.819
91	IPI00027107.5	elongation factor Tu, mitochondrial precursor	2.899	1.277	0.435

92	IPI00011937.1	Peroxiredoxin-4	2.623	2.223	0.792
93	IPI00009865.4	Keratin, type I cytoskeletal 10	1.774	1.649	0.878
94	IPI00003918.6	60S ribosomal protein L4	2.463	2.400	0.971
95	IPI00010720.1	T-complex protein 1 subunit epsilon	2.437	2.078	0.835
96	IPI00900327.2	cDNA FLJ58339, highly similar to Poly(rC)-binding protein 2	2.898	2.771	0.909
97	IPI00027442.4	Alanyl-tRNA synthetase, cytoplasmic	1.977	1.806	0.924
98	IPI00848161.1	Isoform 1 of Spliceosome RNA helicase DDX39B	2.135	2.056	0.926
99	IPI00002966.2	Heat shock 70 kDa protein 4	2.014	2.007	0.935
100	IPI00646304.4	Peptidyl-prolyl cis-trans isomerase B	2.587	2.063	0.810
101	IPI00018146.1	14-3-3 protein theta	3.096	2.403	0.743
102	IPI00551024.5	Bifunctional ATP-dependent dihydroxyacetone kinase/FAD	2.701	1.988	0.714
103	IPI00438230.3	Isoform 2 of Transcription intermediary factor 1-beta	2.593	2.159	0.832
104	IPI00216492.1	Isoform 2 of Heterogeneous nuclear ribonucleoprotein H3	2.698	2.502	0.938
105	IPI00922367.1	non-POU domain-containing octamer-binding protein isof	2.443	2.058	0.789
106	IPI00018206.4	Aspartate aminotransferase, mitochondrial	2.269	1.801	0.826
107	IPI00022774.3	Transitional endoplasmic reticulum ATPase	1.894	1.957	0.947
108	IPI00952607.1	T-complex protein 1 subunit eta isoform d	2.592	2.064	0.803
109	IPI00024933.3	Isoform 1 of 60S ribosomal protein L12	3.286	2.632	0.784
110	IPI00005198.2	Interleukin enhancer-binding factor 2	2.264	1.786	0.848
111	IPI00465365.4	Isoform A1-A of Heterogeneous nuclear ribonucleoprotein	2.983	2.679	1.093
112	IPI00218606.7	40S ribosomal protein S23	3.860	2.426	0.633
113	IPI00179964.5	Isoform 1 of Polypyrimidine tract-binding protein 1	2.330	2.018	0.866
114	IPI00220684.1	Isoform 3 of Heterogeneous nuclear ribonucleoprotein D0	2.759	2.111	0.709
115	IPI00789370.3	serine hydroxymethyltransferase, mitochondrial isoform 3	1.993	2.084	1.076
116	IPI00009904.1	Protein disulfide-isomerase A4	2.055	1.763	0.871
117	IPI00003935.6	Histone H2B type 2-E	2.516	1.883	0.799
118	IPI00290566.1	T-complex protein 1 subunit alpha	2.716	2.105	0.737
119	IPI00909530.1	Histone H3	3.197	2.420	0.726
120	IPI00220642.7	14-3-3 protein gamma	2.460	2.071	0.771
121	IPI00413344.3	Cofilin-2	2.917	1.744	0.598
122	IPI00218342.10	C-1-tetrahydrofolate synthase, cytoplasmic	2.043	1.994	0.892
123	IPI00552590.1	T-complex protein 1 subunit zeta isoform b	2.699	1.851	0.731
124	IPI00374151.1	thioredoxin-dependent peroxide reductase, mitochondria	2.175	1.811	0.894
125	IPI00012007.6	Adenosylhomocysteinase	2.106	1.733	0.779
126	IPI00004534.5	Phosphoribosylformylglycinamidine synthase	3.384	2.866	0.958
127	IPI00941747.1	Calnexin	2.364	2.007	0.816
128	IPI00031804.1	Isoform 1 of Voltage-dependent anion-selective channel	2.744	1.955	0.764
129	IPI00219160.3	60S ribosomal protein L34	4.626	2.366	0.741
130	IPI00218547.1	Isoform Short of Delta-1-pyrroline-5-carboxylate synthase	2.585	2.431	0.903
131	IPI00025091.3	40S ribosomal protein S11	3.019	2.648	0.816
132	IPI00383296.5	Isoform 2 of Heterogeneous nuclear ribonucleoprotein M	1.904	1.946	1.121
133	IPI00013917.3	40S ribosomal protein S12	3.238	2.003	0.602
134	IPI00008433.4	40S ribosomal protein S5	2.118	1.858	0.909
135	IPI00470498.1	Isoform 3 of Plasminogen activator inhibitor 1 RNA-bindin	2.108	1.729	0.731
136	IPI00549389.3	Conserved hypothetical protein	2.651	2.138	0.806
137	IPI00017334.1	Prohibitin	2.330	1.929	0.765
138	IPI00001734.3	Phosphoserine aminotransferase	3.067	2.378	0.777

139	IPI00298547.3	Protein DJ-1	1.960	1.566	0.778
140	IPI00746438.2	Isoform 2 of 60S ribosomal protein L11	2.442	1.992	0.816
141	IPI00299000.5	Proliferation-associated protein 2G4	1.805	1.927	1.096
142	IPI00218993.1	Isoform Beta of Heat shock protein 105 kDa	2.411	2.322	0.836
143	IPI00908543.1	cDNA FLJ56133, highly similar to Serine/threonine-protein	2.493	1.876	0.727
144	IPI00783097.4	Glycyl-tRNA synthetase	2.289	2.009	0.894
145	IPI00220766.5	Lactoylglutathione lyase	2.323	2.021	0.826
146	IPI01013559.1	cDNA FLJ58502, highly similar to Protein disulfide-isomera	1.772	1.750	0.977
147	IPI00013485.3	40S ribosomal protein S2	2.800	2.408	0.831
148	IPI00216319.3	14-3-3 protein eta	2.527	2.068	0.818
149	IPI00783271.1	Leucine-rich PPR motif-containing protein, mitochondrial	2.427	2.464	1.086
150	IPI00219330.2	Isoform 5 of Interleukin enhancer-binding factor 3	2.334	2.255	0.934
151	IPI00219616.7	Ribose-phosphate pyrophosphokinase 1	2.620	2.537	0.958
152	IPI00385834.3	Isoform 2 of KH domain-containing, RNA-binding, signal tr	3.117	2.534	0.847
153	IPI00917777.1	116 kDa U5 small nuclear ribonucleoprotein component is	1.919	1.816	0.959
154	IPI00744692.1	Transaldolase	2.543	2.313	0.896
155	IPI00178440.3	Elongation factor 1-beta	2.598	2.042	0.763
156	IPI00026202.1	60S ribosomal protein L18a	2.840	1.865	0.699
157	IPI00759832.1	Isoform Short of 14-3-3 protein beta/alpha	2.380	1.672	0.702
158	IPI00794545.1	deoxyuridine 5'-triphosphate nucleotidohydrolase, mitoch	2.982	2.176	0.735
159	IPI00215914.5	ADP-ribosylation factor 1	3.212	2.464	0.767
160	IPI00025491.1	Eukaryotic initiation factor 4A-I	1.982	2.041	1.041
161	IPI01012872.1	58 kDa protein	2.907	1.608	0.569
162	IPI00982539.1	Dha kinase/FMN cyclase splice variant	2.604	1.808	0.694
163	IPI00553169.5	filamin A, alpha	3.595	2.753	0.769
164	IPI00952778.2	Isoform 1 of Probable ATP-dependent RNA helicase DDX17	2.188	2.166	0.998
165	IPI00479306.1	Isoform 1 of Proteasome subunit beta type-5	2.075	1.847	0.890
166	IPI00335168.9	Isoform Non-muscle of Myosin light polypeptide 6	3.051	2.311	0.757
167	IPI00383539.5	Citrate synthase	2.626	2.139	0.840
168	IPI00015018.1	Inorganic pyrophosphatase	2.877	3.493	1.068
169	IPI00291467.7	ADP/ATP translocase 3	1.906	1.540	0.808
170	IPI00007188.6	ADP/ATP translocase 2	2.710	2.043	0.754
171	IPI00455457.4	Histone H3	3.622	2.653	0.670
172	IPI00867533.1	60S ribosomal protein L6	4.121	3.937	0.954
173	IPI00940237.1	ATP-dependent RNA helicase DDX39A	2.267	2.190	0.966
174	IPI00908881.2	Glucose-6-phosphate isomerase	1.526	1.871	0.995
175	IPI00019502.3	Isoform 1 of Myosin-9	3.147	2.392	0.799
176	IPI00303722.5	Protein FAM136A	2.845	2.172	0.760
177	IPI00853337.1	ADP-ribosylation factor 5	2.486	1.525	0.613
178	IPI00011454.1	Isoform 2 of Neutral alpha-glucosidase AB	1.920	1.740	0.923
179	IPI00642042.3	Putative uncharacterized protein DKFZp686J1372	2.689	2.093	0.735
180	IPI00413641.7	Aldose reductase	2.471	2.503	1.050
181	IPI00893035.1	carbamoyl-phosphate synthetase 2, aspartate transcarbar	3.780	2.951	0.803
182	IPI00909975.1	Ubiquitin carrier protein	3.120	2.066	0.677
183	IPI00979136.1	Ribonucleoside-diphosphate reductase	3.118	2.590	0.857
184	IPI00646055.2	cDNA FLJ58608, highly similar to Heat shock protein 75 kDa	2.115	1.816	0.968
185	IPI00307524.7	Arsenite methyltransferase	2.513	1.947	0.782

186	IPI00221092.8	40S ribosomal protein S16	2.986	1.775	0.548
187	IPI00553185.2	T-complex protein 1 subunit gamma	2.158	1.318	0.666
188	IPI00909336.1	cDNA FLJ59092	2.392	2.960	1.100
189	IPI00550689.3	tRNA-splicing ligase RtcB homolog	2.903	2.518	0.807
190	IPI00219306.1	Protein mago nashi homolog	3.163	2.403	0.724
191	IPI01012504.1	6-phosphogluconate dehydrogenase, decarboxylating	2.080	1.981	0.983
192	IPI00218988.4	Isoform 2 of Adenylate kinase 2, mitochondrial	2.317	1.885	0.808
193	IPI00925196.2	IMP dehydrogenase 2	2.465	2.711	1.194
194	IPI00008964.3	Ras-related protein Rab-1B	2.501	1.906	0.769
195	IPI00977640.1	sodium/potassium-transporting ATPase subunit alpha-1 i	3.750	2.818	0.748
196	IPI00878876.1	cDNA FLJ51872, highly similar to Small nuclear ribonucleop	4.885	2.883	0.658
197	IPI00012750.3	40S ribosomal protein S25	2.879	2.375	0.703
198	IPI00418262.5	Fructose-bisphosphate aldolase			0.701
199	IPI00943894.1	glycogen phosphorylase, liver form isoform 2	1.981	1.804	0.910
200	IPI00845388.1	destrin isoform b	3.043	2.164	0.711
201	IPI00550363.3	Transgelin-2	2.331	2.020	0.854
202	IPI00419880.6	40S ribosomal protein S3a	2.572	1.882	0.704
203	IPI00216613.1	Isoform Short of Splicing factor, proline- and glutamine-ri	2.088	1.825	0.874
204	IPI00045498.4	Isoform 3 of Heterogeneous nuclear ribonucleoprotein D-	2.142	2.281	1.053
205	IPI00219617.5	Isoform 1 of Ribose-phosphate pyrophosphokinase 2	3.052	3.192	1.046
206	IPI00944455.2	NCAPD2 protein (Fragment)	3.607	2.731	0.757
207	IPI01015230.1	cDNA FLJ53354, highly similar to Puromycin-sensitive amin	2.147	2.138	0.946
208	IPI00221093.7	40S ribosomal protein S17	3.664	2.495	0.679
209	IPI00009328.4	Eukaryotic initiation factor 4A-III	2.328	2.164	0.892
210	IPI00300371.5	Isoform 1 of Splicing factor 3B subunit 3	3.437	2.744	0.861
211	IPI00021828.1	Cystatin-B	3.225	1.946	0.556
212	IPI00003949.1	Ubiquitin-conjugating enzyme E2 N	3.313	1.931	0.777
213	IPI00182533.5	60S ribosomal protein L28	3.884	2.581	0.662
214	IPI00013214.2	cDNA FLJ55599, highly similar to DNA replication licensing	2.176	1.988	0.848
215	IPI00982482.2	isoleucyl-tRNA synthetase	3.378	2.595	0.872
216	IPI00022597.1	NEDD8-conjugating enzyme Ubc12	2.581	1.817	0.774
217	IPI00010153.5	60S ribosomal protein L23	3.639	2.198	0.614
218	IPI00220301.5	Peroxiredoxin-6	2.928	2.133	0.782
219	IPI00402182.2	Isoform 2 of Heterogeneous nuclear ribonucleoprotein Q	2.531	1.013	0.400
220	IPI00005719.1	Isoform 1 of Ras-related protein Rab-1A	1.923	1.450	0.754
221	IPI00981739.1	tubulin folding cofactor A	3.239	1.791	0.609
222	IPI00102128.1	Isoform 1 of Protein arginine N-methyltransferase 6	2.516	1.250	0.508
223	IPI00022239.7	Methionine aminopeptidase 1	2.676	2.228	0.813
224	IPI00217030.10	40S ribosomal protein S4, X isoform	2.486	1.903	0.772
225	IPI01013843.1	cDNA FLJ59776, highly similar to Prefoldin subunit 3	2.072	1.488	0.718
226	IPI00220834.8	X-ray repair cross-complementing protein 5	2.113	1.852	0.879
227	IPI00221088.5	40S ribosomal protein S9	2.907	2.537	0.976
228	IPI00008240.2	Methionyl-tRNA synthetase, cytoplasmic	1.964	2.173	0.995
229	IPI00740142.2	u5 small nuclear ribonucleoprotein 200 kDa helicase-like	3.199	2.812	0.858
230	IPI00021840.1	40S ribosomal protein S6	3.472	2.882	0.813
231	IPI00908512.2	cystathionine gamma-lyase isoform 3	2.494	2.115	0.808
232	IPI00798375.2	cDNA FLJ59357, highly similar to Probable ATP-dependent	2.658	0.980	0.369

233	IPI00004860.2	Isoform Complexed of Arginyl-tRNA synthetase, cytoplasm	2.576	1.219	0.473
234	IPI00477179.1	Isoform 2 of Nucleolar RNA helicase 2	2.271	1.707	0.847
235	IPI00465044.2	Protein RCC2	2.981	2.172	0.727
236	IPI00856038.2	cDNA FLJ53358, highly similar to Heterogeneous nuclear ri	2.205	1.740	0.804
237	IPI00514399.1	ribosomal protein S27	1.900	1.000	0.559
238	IPI00940673.1	cDNA FLJ53217, highly similar to Transketolase	2.582	3.725	1.362
239	IPI00021187.4	Isoform 1 of RuvB-like 1	1.819	1.867	1.022
240	IPI00604431.1	Isoform 2 of Cullin-associated NEDD8-dissociated protein	2.267	2.225	0.949
241	IPI00007611.1	ATP synthase subunit O, mitochondrial	1.998	1.504	0.705
242	IPI00013894.1	Stress-induced-phosphoprotein 1	2.512	1.696	0.706
243	IPI00646689.1	Thioredoxin domain-containing protein 17	3.272	2.008	0.568
244	IPI00965913.1	albumin	2.578	1.305	0.508
245	IPI00219156.7	60S ribosomal protein L30	4.698	2.475	0.686
246	IPI00924816.1	Myotrophin	1.810	1.083	0.608
247	IPI00915869.3	malate dehydrogenase, cytoplasmic isoform 3	2.573	2.287	0.927
248	IPI00643915.1	Peptidyl-prolyl cis-trans isomerase	2.714	2.379	0.696
249	IPI00395887.4	Thioredoxin-related transmembrane protein 1	2.699	2.919	1.099
250	IPI00296370.2	leucine carboxyl methyltransferase 1	2.590	2.312	0.966
251	IPI00304612.9	60S ribosomal protein L13a	3.102	2.334	0.772
252	IPI00031517.1	DNA replication licensing factor MCM6	2.099	1.930	0.867
253	IPI00299904.3	Isoform 1 of DNA replication licensing factor MCM7	2.430	1.976	0.877
254	IPI00745335.7	Isoform Cytoplasmic of Phospholipid hydroperoxide glutat	2.756	2.100	0.748
255	IPI00908754.1	cDNA FLJ50714, moderately similar to Ras-related protein	1.763	1.468	0.807
256	IPI00967721.1	matrin 3	2.682	2.000	0.763
257	IPI00472176.1	Isoform 2 of tRNA (uracil-5-)-methyltransferase homolog A	2.569	2.333	0.875
258	IPI00008438.1	40S ribosomal protein S10	2.798	2.803	0.869
259	IPI00329633.5	Threonyl-tRNA synthetase, cytoplasmic	2.395	1.897	0.802
260	IPI00893541.1	protein disulfide isomerase family A, member 3	2.220	1.366	0.615
261	IPI00293655.3	ATP-dependent RNA helicase DDX1	2.810	2.056	0.758
262	IPI00550746.4	Nuclear migration protein nudC	2.717	1.852	0.658
263	IPI00301434.4	BolA-like protein 2	2.338	1.446	0.631
264	IPI00651660.1	60S ribosomal protein L3 isoform b	2.433	2.268	0.862
265	IPI00009032.1	Lupus La protein	1.876	1.758	0.898
266	IPI00456747.1	ATP synthase, H+ transporting, mitochondrial F0 complex,	1.850	1.564	0.759
267	IPI00030363.1	Acetyl-CoA acetyltransferase, mitochondrial	2.532	1.857	0.787
268	IPI00843996.1	cDNA FLJ52832, highly similar to Splicing factor, arginine/s	2.677	1.839	0.649
269	IPI00026824.2	Heme oxygenase 2	2.245	2.627	1.105
270	IPI00395674.1	Isoform SM-B of Small nuclear ribonucleoprotein-associat	2.976	2.256	0.716
271	IPI00010157.1	S-adenosylmethionine synthase isoform type-2	2.363	2.295	0.978
272	IPI00555749.1	Proteasome 26S ATPase subunit 5 variant (Fragment)	2.682	1.170	0.435
273	IPI00027834.3	Heterogeneous nuclear ribonucleoprotein L	2.854	1.555	0.545
274	IPI00020599.1	Calreticulin	2.525	1.775	0.697
275	IPI00977964.1	ribosomal protein L27a	3.685	2.431	0.638
276	IPI00019359.4	Keratin, type I cytoskeletal 9	2.577	1.511	0.652
277	IPI00795892.1	profilin 2	3.048	1.752	0.665
278	IPI00471928.6	ATP synthase subunit alpha	1.604	1.740	1.180
279	IPI00012493.1	40S ribosomal protein S20	3.104	1.922	0.824

280	IPI00220637.5	Seryl-tRNA synthetase, cytoplasmic	2.726	1.918	0.693
281	IPI00297579.4	Chromobox protein homolog 3	2.491	1.767	0.726
282	IPI00908647.1	cDNA FLJ59942, highly similar to Prostaglandin E synthase	2.397	1.828	0.751
283	IPI00910830.1	cDNA FLJ57715, highly similar to Voltage-dependent anion	3.417	3.018	0.883
284	IPI00021700.3	Proliferating cell nuclear antigen	2.613	3.443	1.242
285	IPI00305383.1	Cytochrome b-c1 complex subunit 2, mitochondrial	2.426	1.724	0.714
286	IPI00247583.5	60S ribosomal protein L21	2.955	2.268	0.785
287	IPI00219905.1	Isoform B of tRNA (cytosine(38)-C(5))-methyltransferase	2.473	1.993	0.806
288	IPI00009104.7	RuvB-like 2	1.944	1.952	0.971
289	IPI01009538.1	Putative uncharacterized protein DKFZp781B11202	1.822	2.116	1.069
290	IPI00019329.1	Dynein light chain 1, cytoplasmic	2.437	1.197	0.490
291	IPI00026268.3	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subuni	2.580	2.206	0.960
292	IPI00642457.1	adenine phosphoribosyltransferase isoform b	1.561	1.470	0.926
293	IPI00000811.2	Proteasome subunit beta type-6	2.219	1.643	0.737
294	IPI00396321.1	Leucine-rich repeat-containing protein 59	2.733	2.549	1.010
295	IPI00470610.4	Pyrroline-5-carboxylate reductase 2	2.730	2.912	1.064
296	IPI00024993.4	Enoyl-CoA hydratase, mitochondrial	2.291	1.794	0.768
297	IPI00643876.2	cDNA FLJ50466, highly similar to DNA (cytosine-5)-methyltra	2.055	2.223	1.082
298	IPI00759663.1	Isoform Cytoplasmic+peroxisomal of Peroxiredoxin-5, mito	2.772	2.273	0.738
299	IPI00412579.6	60S ribosomal protein L10a	2.883	2.014	0.655
300	IPI00983652.2	cDNA FLJ61021, highly similar to Far upstream element-bir	2.515	1.037	0.412
301	IPI00299177.4	Isoform 1 of Cat eye syndrome critical region protein 5	2.661	2.257	0.907
302	IPI00792330.2	ADP-ribosylation factor 4	2.831	1.794	0.634
303	IPI00640006.1	rab GDP dissociation inhibitor beta isoform 2	2.195	1.889	0.898
304	IPI00003168.1	Phosphoribosyl pyrophosphate synthase-associated prote	2.765	3.034	1.025
305	IPI00794610.2	dnaJ homolog subfamily C member 7 isoform 2	3.180	2.308	0.787
306	IPI00760588.2	Isoform 5 of Double-stranded RNA-specific adenosine dea	2.359	2.056	0.954
307	IPI00655650.2	40S ribosomal protein S26	3.956	2.386	0.575
308	IPI00927101.1	Uncharacterized protein	2.348	2.029	0.762
309	IPI00016572.1	Small nuclear ribonucleoprotein G	2.693	1.639	0.603
310	IPI00298961.3	Exportin-1	2.290	2.011	0.807
311	IPI00179953.2	Isoform 1 of Nuclear autoantigenic sperm protein	4.306	2.624	0.660
312	IPI00026271.5	40S ribosomal protein S14	3.324	2.093	0.618
313	IPI00332511.5	Serine/threonine-protein phosphatase 2A 55 kDa regulato	2.089	2.177	0.998
314	IPI00219757.13	Glutathione S-transferase P	2.255	1.558	0.746
315	IPI00453473.6	Histone H4	3.666	1.977	0.580
316	IPI00644653.1	cDNA FLJ56337, highly similar to High mobility group prote	2.632	2.074	0.774
317	IPI00946221.1	ribosomal protein L24	3.166	2.986	0.959
318	IPI00430813.3	Isoform 2 of Cellular nucleic acid-binding protein	3.452	2.328	0.743
319	IPI01012383.1	OTU domain, ubiquitin aldehyde binding 1	2.543	2.404	1.055
320	IPI00927892.1	Mitochondrial-processing peptidase subunit beta	1.884	2.027	1.006
321	IPI00964409.3	heat shock 70kDa protein 4-like	1.898	1.798	0.896
322	IPI00023344.2	Isoform 1 of Symplekin	2.770	2.882	0.969
323	IPI00009901.1	Nuclear transport factor 2	1.866	1.086	0.528
324	IPI00029266.1	Small nuclear ribonucleoprotein E	5.050	2.859	0.671
325	IPI00964686.1	heterogeneous nuclear ribonucleoprotein A/B	2.133	2.047	0.923
326	IPI00016513.5	Ras-related protein Rab-10	2.019	1.484	0.735

327	IPI01014727.1	cDNA FLJ51983, highly similar to Phosphoglycerate mutase	2.442	2.157	0.830
328	IPI00299573.12	60S ribosomal protein L7a	3.146	2.365	0.761
329	IPI00926977.1	26S protease regulatory subunit 10B	2.729	2.219	0.763
330	IPI00792916.2	glucosidase 2 subunit beta isoform 2	3.032	3.188	1.019
331	IPI00027223.2	Isocitrate dehydrogenase [NADP] cytoplasmic	2.772	2.171	0.708
332	IPI00218829.9	Eukaryotic peptide chain release factor GTP-binding subu	2.355	2.137	0.924
333	IPI00336094.5	Isoform 2 of 3-hydroxyacyl-CoA dehydrogenase type-2	2.776	2.180	0.829
334	IPI00156374.6	Isoform 1 of Importin-4	3.711	3.138	0.955
335	IPI00081836.3	Histone H2A type 1-H	2.610	1.777	0.614
336	IPI00926258.1	proteasome (prosome, macropain) 26S subunit, non-ATPa	1.455	1.847	1.170
337	IPI00215780.5	40S ribosomal protein S19	3.179	1.974	0.706
338	IPI00290416.3	Isoform 1 of Obg-like ATPase 1	2.705	1.428	0.566
339	IPI00019927.2	26S proteasome non-ATPase regulatory subunit 7	2.663	2.910	1.093
340	IPI00984839.1	ATP-dependent RNA helicase DDX3X isoform 2	2.773	2.187	0.789
341	IPI01015454.1	PPM1G protein	2.933	2.651	0.882
342	IPI00644712.4	X-ray repair cross-complementing protein 6	1.530	1.665	1.054
343	IPI00031522.2	Trifunctional enzyme subunit alpha, mitochondrial	2.241	1.706	0.807
344	IPI00964635.1	annexin A5	2.091	1.914	0.908
345	IPI00479877.4	4-trimethylaminobutyraldehyde dehydrogenase	2.028	2.119	0.944
346	IPI00640037.2	cDNA FLJ38496 fis, clone FELIV1000137, highly similar to 60	2.537	2.810	1.121
347	IPI00030706.1	Activator of 90 kDa heat shock protein ATPase homolog 1	2.822	2.150	0.767
348	IPI00927606.1	Glutathione peroxidase 1	2.790	2.052	0.766
349	IPI00940851.1	ELAV-like protein 1	2.616	1.754	0.702
350	IPI00001159.11	Translational activator GCN1	3.908	2.981	0.757
351	IPI00170924.2	Histidine triad nucleotide-binding protein 3	1.997	1.849	0.977
352	IPI00029631.1	Enhancer of rudimentary homolog	2.223	1.190	0.535
353	IPI00382699.2	Isoform 5 of Filamin-B	3.789	3.114	0.822
354	IPI00010882.3	Isoform DFF45 of DNA fragmentation factor subunit alpha	2.698	2.386	0.856
355	IPI00300074.4	Phenylalanyl-tRNA synthetase beta chain	2.935	3.910	1.007
356	IPI00759824.2	Isoform 2 of Acidic leucine-rich nuclear phosphoprotein 3	2.556	2.023	0.840
357	IPI00032872.3	28S ribosomal protein S16, mitochondrial	3.591	2.262	0.645
358	IPI00910697.1	cDNA FLJ53703, highly similar to Histidyl-tRNA synthetase	1.774	1.922	1.084
359	IPI00293276.10	Macrophage migration inhibitory factor	2.049	1.409	0.788
360	IPI00012772.8	60S ribosomal protein L8	3.265	2.461	0.698
361	IPI00888475.2	Isoform 6 of Microtubule-associated protein 4	3.971	3.064	0.814
362	IPI01011421.1	Dihydrolipoyl dehydrogenase	2.756	2.171	0.763
363	IPI00005511.1	PHD finger-like domain-containing protein 5A	4.239	2.264	0.616
364	IPI00003588.1	Eukaryotic translation elongation factor 1 epsilon-1	2.903	2.165	0.801
365	IPI00910438.1	cDNA FLJ54574, highly similar to Staphylococcal nuclease d	2.253	2.024	0.894
366	IPI00291783.4	Gem-associated protein 5	3.627	3.024	0.839
367	IPI00026167.5	NHP2-like protein 1	2.445	1.411	0.607
368	IPI01009775.1	cDNA FLJ52574, highly similar to Septin-7	2.080	1.889	0.920
369	IPI00006865.4	Vesicle-trafficking protein SEC22b	2.504	1.632	0.660
370	IPI00216425.1	Isoform 2 of Testin	2.406	2.635	1.085
371	IPI00011913.1	Heterogeneous nuclear ribonucleoprotein A0	2.423	3.772	1.167
372	IPI00177817.4	Isoform 2 of Sarcoplasmic/endoplasmic reticulum calcium	3.494	2.739	0.799

373	IPI00219994.2	Isoform 3 of Exportin-2	2.087	2.078	0.893
374	IPI00376503.2	pyrroline-5-carboxylate reductase 1, mitochondrial isoform	2.419	1.740	0.719
375	IPI00335069.2	26S proteasome non-ATPase regulatory subunit 12 isoform	2.009	1.933	0.938
376	IPI00026519.1	Peptidyl-prolyl cis-trans isomerase F, mitochondrial	2.359	1.834	0.706
377	IPI00964515.1	guanine nucleotide binding protein (G protein), beta poly	2.204	1.897	0.878
378	IPI00218493.7	Hypoxanthine-guanine phosphoribosyltransferase	2.658	2.172	0.824
379	IPI00304417.7	Isocitrate dehydrogenase [NAD] subunit beta, mitochondr	2.485	1.925	0.786
380	IPI00945620.1	guanine monphosphate synthetase	2.460	2.106	0.944
381	IPI00456695.1	Isoform 2 of 26S proteasome non-ATPase regulatory subur	1.743	2.146	1.023
382	IPI00479934.1	non-specific lipid-transfer protein isoform 4 proprotein	3.317	1.981	0.611
383	IPI00011916.1	Aminoacyl tRNA synthase complex-interacting multifunctio	2.563	3.257	1.235
384	IPI00215911.3	DNA-(apurinic or apyrimidinic site) lyase	2.407	2.613	1.078
385	IPI00005024.3	Isoform 1 of Myb-binding protein 1A	4.018	3.097	0.797
386	IPI00877948.1	Minichromosome maintenance complex component 5	1.991	2.491	1.079
387	IPI00953696.1	glutathione reductase, mitochondrial isoform 4 precursor	1.697	1.817	1.064
388	IPI01012867.1	ubiquitin-conjugating enzyme E2 variant 2	2.900	2.056	0.709
389	IPI00867679.2	cDNA FLJ51729, highly similar to Proteasome subunit alpha	2.355	1.934	0.762
390	IPI00879160.1	RAN binding protein 1	2.349	1.866	0.735
391	IPI00291646.3	Methylenetetrahydrofolate dehydrogenase (NADP+ depen	2.101	1.845	0.820
392	IPI00306960.3	Asparaginyl-tRNA synthetase, cytoplasmic	2.708	1.922	0.698
393	IPI00922359.1	Protein-L-isoaspartate O-methyltransferase	2.136	1.790	0.743
394	IPI00012795.3	Eukaryotic translation initiation factor 3 subunit I	2.873	2.932	1.077
395	IPI00020127.1	Replication protein A 70 kDa DNA-binding subunit	2.588	0.928	0.421
396	IPI00644668.3	Four and a half LIM domains 1	3.269	2.602	0.797
397	IPI00025874.2	Dolichyl-diphosphooligosaccharide--protein glycosyltrans	3.456	2.953	1.200
398	IPI00645201.1	Ribosomal protein S8	3.017	2.595	0.804
399	IPI00218830.1	Isoform Short of Glycylpeptide N-tetradecanoyltransferase	2.927	2.990	0.837
400	IPI01014177.1	ST13 protein	2.168	2.041	0.934
401	IPI00023647.4	Isoform 1 of Ubiquitin-like modifier-activating enzyme 6	2.251	2.148	0.902
402	IPI00026833.4	Adenylosuccinate synthetase isozyme 2	2.565	2.145	1.243
403	IPI00306708.5	Lymphokine-activated killer T-cell-originated protein kina	3.457	2.599	0.826
404	IPI00607884.2	cDNA, FLJ79413, highly similar to Hematological and neuro	1.929	1.460	0.765
405	IPI00414384.1	Isoform 1 of Hydroxysteroid dehydrogenase-like protein 2	2.073	2.103	1.015
406	IPI00026328.3	Thioredoxin domain-containing protein 12	2.484	2.130	0.871
407	IPI00291175.7	Isoform 1 of Vinculin	2.028	1.556	0.818
408	IPI00549885.4	Isoform 2 of Pyruvate dehydrogenase E1 component subur	2.172	2.300	1.117
409	IPI00983098.1	lysophospholipase I	1.953	1.515	0.842
410	IPI00978288.1	proteasome subunit beta type-2 isoform 2	2.723	2.445	0.776
411	IPI00783982.1	Coatomer subunit gamma	2.143	2.359	1.145
412	IPI00062037.1	Dynein light chain 2, cytoplasmic	2.072	1.349	0.651
413	IPI00008552.6	Glutaredoxin-3	2.738	2.448	0.902
414	IPI00028055.4	Transmembrane emp24 domain-containing protein 10	2.436	1.852	0.801
415	IPI00917605.1	cytochrome c, somatic	3.302	2.253	0.632
416	IPI00788836.1	dihydrolipoamide S-acetyltransferase	2.669	2.481	0.899
417	IPI00003886.3	Isoform 2 of Guanine nucleotide-binding protein-like 3	2.995	1.429	0.410
418	IPI00939560.1	thioredoxin domain-containing protein 5 isoform 3	1.876	1.944	1.036
419	IPI00783378.3	Ubiquitin-conjugating enzyme E2 O	3.249	2.757	0.879
420	IPI00646415.1	RAB14, member RAS oncogene family	2.291	1.569	0.679

421	IPI01013402.1	cDNA FLJ46429 fis, clone THYMU3014372, highly similar to D	2.748	3.522	0.980
422	IPI00792135.2	ATP5H protein (Fragment)	2.015	1.670	0.823
423	IPI00397526.3	Isoform 1 of Myosin-10	1.916	1.825	0.953
424	IPI00963825.1	ATP synthase, H+ transporting, mitochondrial Fo complex,	2.567	2.802	0.735
425	IPI00001757.1	Isoform 1 of RNA-binding protein 8A	1.852	1.550	0.819
426	IPI00004839.1	Crk-like protein	3.577	3.226	0.874
427	IPI00026089.4	Splicing factor 3B subunit 1	3.141	2.627	0.814
428	IPI00006980.1	chromosome 14 open reading frame 166	2.526	1.296	0.550
429	IPI00554521.2	Ferritin heavy chain	1.796	1.404	0.788
430	IPI00786995.1	DNA-dependent protein kinase catalytic subunit-like	3.054	2.815	0.887
431	IPI00456969.1	Cytoplasmic dynein 1 heavy chain 1	3.743	2.938	0.818
432	IPI00946636.2	cDNA FLJ51804, highly similar to Vacuolar ATP synthase cat	2.456	2.394	0.955
433	IPI00302850.4	Small nuclear ribonucleoprotein Sm D1	2.722	1.543	0.577
434	IPI00645329.1	Isoform 3 of Histone-binding protein RBBP4	1.841	1.664	0.934
435	IPI00465361.4	60S ribosomal protein L13	2.926	2.482	0.736
436	IPI00977156.1	eukaryotic translation initiation factor 3, subunit E	2.152	1.995	0.975
437	IPI00218414.5	Carbonic anhydrase 2	3.112	2.365	0.760
438	IPI00291939.1	Structural maintenance of chromosomes protein 1A	3.833	2.920	0.790
439	IPI00514724.1	Ubiquitin-conjugating enzyme E2 variant 1	2.424	1.697	0.700
440	IPI00294911.1	Succinate dehydrogenase [ubiquinone] iron-sulfur subuni	2.630	2.067	0.795
441	IPI00031570.1	Cancer-related nucleoside-triphosphatase	2.373	1.870	0.786
442	IPI00982721.1	transcription elongation factor B (SIII), polypeptide 1 (15k	3.939	2.470	0.627
443	IPI00294955.3	U6 snRNA-associated Sm-like protein LSm4	3.270	2.080	0.603
444	IPI01009339.1	paraspeckle component 1	2.809	1.405	0.500
445	IPI00017963.1	Small nuclear ribonucleoprotein Sm D2	3.255	1.929	0.589
446	IPI01014812.1	cDNA FLJ52595, highly similar to Medium-chain specific ac	2.609	2.024	0.737
447	IPI00642213.1	RNA binding protein, autoantigenic	2.319	2.608	1.074
448	IPI00221091.9	40S ribosomal protein S15a	4.289	2.330	0.565
449	IPI00063245.2	far upstream element (FUSE) binding protein 3	2.680	2.252	0.840
450	IPI00387130.1	Isoform 1 of Anamorsin	3.692	3.417	0.892
451	IPI00943173.1	Coronin-1C	3.450	2.288	0.723
452	IPI00220667.3	Isoform 4 of Hexokinase-1	1.491	1.603	0.919
453	IPI00105598.3	Proteasome 26S non-ATPase subunit 11 variant (Fragment)	1.822	2.353	1.232
454	IPI00103467.5	Aldehyde dehydrogenase X, mitochondrial	1.766	1.931	1.153
455	IPI00005613.3	Splicing factor U2AF 35 kDa subunit	2.546	2.539	0.988
456	IPI01015738.1	Alpha actinin 4 short isoform	1.959	1.818	0.928
457	IPI00031836.3	Developmentally-regulated GTP-binding protein 1	2.864	2.459	0.859
458	IPI00019640.1	Serine/threonine-protein kinase VRK1	2.123	2.207	1.040
459	IPI00979610.1	S-phase kinase-associated protein 1	3.144	2.327	0.726
460	IPI00927677.1	heterogeneous nuclear ribonucleoprotein A3	2.817	2.211	0.895
461	IPI00021435.3	26S protease regulatory subunit 7	1.684	1.884	1.093
462	IPI00219025.3	Glutaredoxin-1	1.888	0.717	0.380
463	IPI00218568.7	Pterin-4-alpha-carbinolamine dehydratase	1.621	1.205	0.743
464	IPI00014151.3	26S proteasome non-ATPase regulatory subunit 6	2.766	2.422	0.864
465	IPI00009922.3	SRA stem-loop-interacting RNA-binding protein, mitochon	2.769	1.678	0.597
466	IPI00297982.7	Eukaryotic translation initiation factor 2 subunit 3	1.987	1.966	0.985
467	IPI01010654.1	cDNA FLJ57899, highly similar to Mitotic checkpoint protein	2.735	2.133	0.776

468	IPI01009456.1	cDNA FLJ40884 fis, clone UTERU2000607, highly similar to A	1.505	1.721	1.143
469	IPI01015965.1	eukaryotic translation elongation factor 1 delta (guanine	2.301	2.462	1.070
470	IPI00925601.1	5-aminoimidazole-4-carboxamide ribonucleotide formyltr	3.186	2.035	0.683
471	IPI01012099.1	PRP6 pre-mRNA processing factor 6 homolog (S. cerevisiae	2.339	2.021	0.867
472	IPI00304409.3	Calcium-regulated heat stable protein 1	2.495	2.039	0.702
473	IPI00644813.1	Small nuclear ribonucleoprotein polypeptide C	2.109	1.495	0.677
474	IPI00745893.2	small ubiquitin-related modifier 2 isoform b precursor	4.159	2.626	0.631
475	IPI00295857.7	Isoform 1 of Coatomer subunit alpha	2.980	2.520	0.789
476	IPI00334907.3	Isoform 1 of Phosphatidylinositol transfer protein beta is	2.168	2.397	1.108
477	IPI00983658.1	adenosine kinase isoform d	2.747	1.499	0.542
478	IPI00008527.3	60S acidic ribosomal protein P1	5.131	3.303	0.644
479	IPI00942408.1	Isoform 1 of Cyclin-dependent kinase inhibitor 2A, isoform	4.106	2.614	0.637
480	IPI00909229.1	cDNA FLJ51308	1.955	1.410	0.623
481	IPI00921820.1	cDNA, FLJ78950, highly similar to Isocitrate dehydrogenase	2.266	1.847	0.815
482	IPI00945574.1	RAB7A, member RAS oncogene family	3.152	2.130	0.702
483	IPI00023234.3	SUMO-activating enzyme subunit 2	2.170	1.908	0.938
484	IPI00219153.4	60S ribosomal protein L22	2.934	1.647	0.530
485	IPI00815843.1	RPL14 protein (Fragment)	3.465	2.728	0.597
486	IPI00977658.1	Eukaryotic translation initiation factor 3 subunit H	3.359	2.620	0.767
487	IPI00029557.3	GrpE protein homolog 1, mitochondrial	2.130	1.665	0.797
488	IPI01009361.1	N(alpha)-acetyltransferase 15, NatA auxiliary subunit	1.890	2.033	1.050
489	IPI00012369.1	Mitotic spindle assembly checkpoint protein MAD2A	1.973	1.541	0.727
490	IPI00334627.3	Putative annexin A2-like protein	2.364	2.662	1.126
491	IPI00878484.1	Ewing sarcoma breakpoint region 1	2.594	2.068	1.092
492	IPI00977915.3	HYOU1 protein	3.330	2.779	0.812
493	IPI00170972.2	UPF0553 protein C9orf64	2.533	2.287	1.054
494	IPI00020451.4	Isoform 1 of Protein IMPACT	2.729	2.233	0.836
495	IPI00013847.4	Cytochrome b-c1 complex subunit 1, mitochondrial	2.240	1.852	0.827
496	IPI00965680.1	nucleoporin 155kDa	3.192	2.828	0.746
497	IPI00218372.1	Isoform 2 of Proteasome subunit alpha type-7	2.593	1.693	0.701
498	IPI01015591.1	cDNA FLJ55635, highly similar to pre-mRNA-splicing factorA	2.664	2.080	0.781
499	IPI00955815.2	pyruvate dehydrogenase E1 component subunit alpha, son	1.993	1.311	0.641
500	IPI00926495.1	ribosomal protein L35a	4.530	2.216	0.524
501	IPI00177008.1	Phosphoglycolate phosphatase	2.790	2.764	1.067
502	IPI00016736.1	Isoform 1 of 1-phosphatidylinositol-4,5-bisphosphate pho	4.052	2.856	0.603
503	IPI00789792.1	dynactin 2 (p50)	1.916	1.992	0.968
504	IPI00020602.1	Casein kinase II subunit alpha'	4.707	4.464	0.948
505	IPI01012417.1	NOP2/Sun RNA methyltransferase family, member 2	2.007	2.081	0.938
506	IPI00945855.1	profilin 2	4.255	2.485	0.584
507	IPI01014975.1	Talin 1	4.295	3.187	0.767
508	IPI00011698.4	histone deacetylase complex subunit SAP18	3.101	2.225	0.711
509	IPI00909657.1	cDNA FLJ50378, highly similar to Phenylalanyl-tRNA synthe	2.464	1.903	0.735
510	IPI00787559.1	thymidylate kinase isoform 2	2.353	2.289	0.895
511	IPI00299147.8	Small ubiquitin-related modifier 3	3.508	1.968	0.561
512	IPI00983602.1	mitochondrial carrier 2	4.026	4.743	1.093
513	IPI00789806.2	Isoform 2 of Cytosol aminopeptidase	2.420	2.435	1.044
514	IPI00514607.2	Isoform 2 of Histone-arginine methyltransferase CARM1	3.223	2.208	0.733

515	IPI00647813.1	Isoform 2 of Inosine-5'-monophosphate dehydrogenase 1	1.494	1.900	1.272
516	IPI00895865.1	electron transfer flavoprotein subunit alpha, mitochondri	2.323	1.938	0.934
517	IPI00982162.1	ras homolog family member C	2.886	2.151	0.648
518	IPI00215790.6	60S ribosomal protein L38	2.347	1.232	0.544
519	IPI00000643.1	BAG family molecular chaperone regulator 2	2.173	1.462	0.682
520	IPI01012205.1	cDNA FLJ53863, highly similar to Cystathionine beta-syntha	2.590	2.268	0.866
521	IPI00513775.1	Isoform 2 of 14 kDa phosphohistidine phosphatase	3.013	1.668	0.572
522	IPI00908582.1	cDNA FLJ50164, highly similar to Protein flightless-1 homol	3.886	2.917	0.736
523	IPI00428288.1	Isoform 4 of 39S ribosomal protein L43, mitochondrial	2.883	2.170	0.747
524	IPI00295386.7	Carbonyl reductase [NADPH] 1	2.657	1.919	0.722
525	IPI00022334.1	Ornithine aminotransferase, mitochondrial	2.702	0.991	0.413
526	IPI00022442.2	Acyl carrier protein, mitochondrial	2.275	1.668	0.768
527	IPI00973884.1	S-phase kinase-associated protein 1	2.482	2.757	1.111
528	IPI00759715.1	Isoform Cytoplasmic of Fumarate hydratase, mitochondria	2.456	2.400	1.000
529	IPI01012065.1	proteasome (prosome, macropain) subunit, alpha type, 1	2.530	2.068	0.831
530	IPI00003327.1	ADP-ribosylation factor-like protein 3	2.868	2.050	0.770
531	IPI00797249.1	L-xylulose reductase isoform 2	2.302	2.227	0.831
532	IPI01012026.1	chromodomain helicase DNA binding protein 4	3.096	2.470	0.830
533	IPI00012202.1	Methylosome protein 50	3.172	2.043	0.644
534	IPI01009016.1	Isoform 4 of Cellular tumor antigen p53	1.880	1.768	0.932
535	IPI00746004.2	40S ribosomal protein S27-like	2.465	1.973	0.800
536	IPI01014044.1	Isoform 1 of NADH dehydrogenase [ubiquinone] 1 beta su	2.259	1.868	0.752
537	IPI00873286.2	cDNA FLJ55750, highly similar to Eukaryotic translation init	2.191	1.650	0.841
538	IPI00171798.1	Metastasis-associated protein MTA2	2.589	2.486	0.956
539	IPI00016786.1	Isoform 2 of Cell division control protein 42 homolog	2.143	1.797	0.838
540	IPI00908889.1	cDNA FLJ54065, moderately similar to Mus musculus pitrily	1.954	1.726	0.912
541	IPI00925237.1	non-SMC condensin I complex, subunit H	2.001	2.088	0.960
542	IPI00980919.1	Serine/threonine-protein phosphatase	6.424	6.094	0.991
543	IPI00006052.3	Prefoldin subunit 2	3.667	2.536	0.622
544	IPI00794581.1	tropomodulin 2 (neuronal)	1.697	1.011	0.596
545	IPI00025039.1	rRNA 2'-O-methyltransferase fibrillarin	2.536	2.446	0.906
546	IPI00853093.3	Isoform 1 of Methyltransferase-like protein 2B	3.197	3.015	0.971
547	IPI00550234.4	Isoform 1 of Actin-related protein 2/3 complex subunit 5	2.465	1.953	0.674
548	IPI00010130.3	Glutamine synthetase	2.410	2.237	0.845
549	IPI00219077.4	Isoform 1 of Leukotriene A-4 hydrolase	2.484	1.213	0.447
550	IPI00384016.1	Full-length cDNA 5-PRIME end of clone CS0DJ009YL13 of T c	1.767	1.653	0.943
551	IPI00873948.3	DNA-directed RNA polymerase	3.095	2.516	0.773
552	IPI00184284.6	Isoform 2 of Vacuolar protein sorting-associated protein 2	2.456	2.214	0.901
553	IPI00419919.6	Ribosomal protein L29	2.336	2.074	0.848
554	IPI01018329.1	cDNA FLJ57316, highly similar to DNA mismatch repair prot	1.984	1.851	1.110
555	IPI00029534.1	Amidophosphoribosyltransferase	2.647	1.966	0.743
556	IPI00008454.1	DnaJ homolog subfamily B member 11	2.522	2.099	0.834
557	IPI00332371.9	Isoform 1 of 6-phosphofructokinase, liver type	1.713	2.082	1.216
558	IPI00216508.3	Isoform 2 of Sorting nexin-3	2.738	1.960	0.670
559	IPI00386755.2	ERO1-like protein alpha	2.784	1.933	0.709
560	IPI00743142.2	Isoform 1 of 6-phosphofructokinase, muscle type	2.405	1.901	0.790
561	IPI01010195.1	cDNA FLJ55629, highly similar to Transcription elongation f	3.271	3.311	0.997

562	IPI00021785.2	Cytochrome c oxidase subunit 5B, mitochondrial	2.684	1.725	0.609
563	IPI01014174.1	PRP19/PSO4 pre-mRNA processing factor 19 homolog (S. ce	2.372	2.729	0.945
564	IPI00977749.1	cysteine and histidine-rich domain (CHORD) containing 1	3.123	3.882	1.184
565	IPI00026546.1	Platelet-activating factor acetylhydrolase IB subunit beta	2.268	1.640	0.724
566	IPI00946039.1	tRNA methyltransferase 10 homolog C (S. cerevisiae)	2.603	2.502	0.922
567	IPI00005087.1	Tropomodulin-3	2.132	1.826	0.857
568	IPI00250297.3	L-aminoadipate-semialdehyde dehydrogenase-phosphop	4.238	3.259	0.987
569	IPI00910113.1	cDNA FLJ52902, highly similar to Rab GDP dissociation inhi	4.334	3.106	0.717
570	IPI00106495.1	Condensin complex subunit 3	2.017	2.265	1.013
571	IPI00007402.3	Importin-7	2.615	1.822	0.697
572	IPI00641924.2	28S ribosomal protein S9, mitochondrial	2.408	1.907	0.817
573	IPI00982694.1	serum amyloid A-like 1	3.281	2.116	0.627
574	IPI00644349.4	cDNA FLJ60449, highly similar to Homo sapiens prion prote	2.901	2.318	0.801
575	IPI00556021.3	DNA polymerase (Fragment)	3.485	3.511	1.007
576	IPI00028946.2	Isoform 3 of Reticulon-3	2.345	2.115	0.855
577	IPI00215719.6	60S ribosomal protein L18	10.555	6.181	0.577
578	IPI00219678.3	Eukaryotic translation initiation factor 2 subunit 1	2.674	2.529	1.043
579	IPI00013122.1	Hsp90 co-chaperone Cdc37	1.887	2.117	1.122
580	IPI00411937.4	Nucleolar protein 56	2.125	2.111	0.993
581	IPI01015342.1	cDNA, FLJ79540, highly similar to Serine-threonine kinase	3.143	2.997	0.985
582	IPI00433833.1	THOC3 protein	2.658	2.099	0.813
583	IPI00001589.1	Mitochondrial import inner membrane translocase subun	1.973	1.296	0.657
584	IPI00375145.1	Isoform Short of Ubiquitin carboxyl-terminal hydrolase 5	2.251	2.200	0.977
585	IPI00184821.1	Isoform 1 of Bifunctional coenzyme A synthase	3.020	1.866	0.681
586	IPI01010004.1	cDNA FLJ50858, highly similar to Homo sapiens abhydrolas	1.905	1.037	0.789
587	IPI00039626.3	Isoform D of Constitutive coactivator of PPAR-gamma-like	4.051	3.011	0.747
588	IPI00644724.1	HIV-1 Tat specific factor 1	2.112	1.905	0.905
589	IPI00937278.2	26S proteasome non-ATPase regulatory subunit 8	2.900	2.160	0.725
590	IPI00893431.2	cDNA FLJ53410, highly similar to Eukaryotic translation init	2.062	2.161	1.048
591	IPI00025019.3	Proteasome subunit beta type-1	2.227	1.719	0.755
592	IPI00335385.4	Scavenger mRNA-decapping enzyme DcpS	2.141	2.317	1.093
593	IPI00552546.1	Isoform 2 of Mini-chromosome maintenance complex-bin	2.857	3.062	1.096
594	IPI00023064.1	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex a	2.233	1.979	0.765
595	IPI00556640.1	PSAP protein	2.281	2.291	1.005
596	IPI00019326.1	Adrenodoxin, mitochondrial	2.843	1.772	0.554
597	IPI01013095.1	cDNA, FLJ79243, highly similar to Eukaryotic translation ini	2.564	1.829	0.707
598	IPI00893219.2	LUC7-like	2.395	2.655	1.109
599	IPI00009464.1	Isoform 1 of Exosome component 10	2.320	1.863	0.829
600	IPI01015801.1	cDNA FLJ16138 fis, clone BRALZ2017531, highly similar to G	1.550	1.636	1.056
601	IPI00719622.1	40S ribosomal protein S28	2.497	1.144	0.458
602	IPI00012866.2	RAC-alpha serine/threonine-protein kinase	3.314	2.355	0.711
603	IPI00940656.2	ANP32A protein	2.559	2.043	0.798
604	IPI01014610.1	tRNA methyltransferase 11-2 homolog (S. cerevisiae)	2.243	1.697	0.720
605	IPI01011099.1	cDNA FLJ53046, highly similar to 26S proteasome non-ATPa	2.727	1.987	0.737
606	IPI00909299.1	cDNA FLJ51288, highly similar to Kinesin heavy chain	2.059	2.005	0.974
607	IPI00011770.1	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex s	2.354	1.359	0.575
608	IPI01010794.1	cDNA FLJ61096, highly similar to THO complex subunit 2	2.589	2.183	1.121

609	IPI00553165.4	Protein (Peptidylprolyl cis/trans isomerase) NIMA-interact	2.601	1.513	0.537
610	IPI00019407.1	Sterol-4-alpha-carboxylate 3-dehydrogenase, decarboxylat	2.093	1.727	0.787
611	IPI00910487.1	cDNA FLJ52569, highly similar to Collagen-binding protein	2.138	1.930	0.980
612	IPI00967473.1	DEK oncogene	2.817	2.494	0.863
613	IPI01010979.1	zinc finger CCCH-type containing 15	3.031	2.044	0.768
614	IPI00550037.3	28S ribosomal protein S15, mitochondrial	2.172	1.506	0.693
615	IPI00639819.1	TAR DNA binding protein	2.500	2.116	0.805
616	IPI00983383.1	cDNA FLJ54904, highly similar to Homo sapiens dendritic c	2.542	1.920	0.755
617	IPI00220871.4	60S ribosomal protein L37	3.575	2.284	0.700
618	IPI00940152.1	ataxin-10 isoform 2	1.994	2.241	1.056
619	IPI00180128.4	Isoform 2 of Basic leucine zipper and W2 domain-containi	2.787	1.715	0.615
620	IPI00016676.1	Mitochondrial import receptor subunit TOM20 homolog	2.694	1.775	0.861
621	IPI00646917.1	Cleavage and polyadenylation specificity factor subunit 5	2.989	2.276	0.762
622	IPI01014783.1	cDNA FLJ58533, highly similar to Leucyl-tRNA synthetase, cy	2.830	1.974	0.691
623	IPI00037448.3	Glyoxylate reductase/hydroxypyruvate reductase	2.200	2.288	0.955
624	IPI00184525.2	Isoform 2 of Methylthioribose-1-phosphate isomerase	2.654	2.219	0.812
625	IPI00007074.5	Tyrosyl-tRNA synthetase, cytoplasmic	2.226	1.571	0.684
626	IPI01018318.1	cDNA FLJ54744, highly similar to Scaffold attachment facto	4.256	3.239	0.761
627	IPI01011782.1	cDNA FLJ61430, highly similar to ATP-dependent RNA helica	3.549	2.477	0.698
628	IPI00449201.2	Isoform 2 of Ubiquitin-like-conjugating enzyme ATG3	1.877	1.866	1.004
629	IPI00788781.1	fatty acid binding protein 5 (psoriasis-associated)	4.128	2.098	0.488
630	IPI00937239.2	40S ribosomal protein S21	1.875	1.002	0.546
631	IPI00940890.1	Isoform 3 of RNA-binding protein 4	2.917	2.405	0.824
632	IPI01015427.1	cDNA FLJ58247, highly similar to 26S protease regulatory su	2.919	1.830	0.627
633	IPI00032957.1	SUMO-conjugating enzyme UBC9	3.267	2.100	0.643
634	IPI00025086.4	Cytochrome c oxidase subunit 5A, mitochondrial	3.883	2.117	0.545
635	IPI00221325.3	E3 SUMO-protein ligase RanBP2	4.446	3.044	0.685
636	IPI00472003.1	Isoform 4 of BH3-interacting domain death agonist	3.018	4.338	0.843
637	IPI00167572.4	Protein FAM98B	2.057	2.368	1.184
638	IPI00937682.1	Opioid growth factor receptor	2.520	2.275	0.901
639	IPI00003927.5	Peptidyl-prolyl cis-trans isomerase D	2.491	2.630	1.056
640	IPI00968128.1	ribosomal protein L9	1.968	1.584	0.780
641	IPI00216770.1	Isoform 2 of 26S protease regulatory subunit 6B	1.890	1.884	0.997
642	IPI00925570.1	regulator of chromosome condensation 1	2.007	1.969	0.981
643	IPI01015278.1	cDNA FLJ58314, highly similar to Mitogen-activated protein	2.838	2.159	0.761
644	IPI00953925.1	Aryl hydrocarbon receptor interacting protein	3.696	3.745	1.013
645	IPI00966482.1	cDNA FLJ36919 fis, clone BRACE2003987, highly similar to C0	2.641	2.597	0.984
646	IPI00979370.1	K-RAS protein (Fragment)	2.248	1.704	0.758
647	IPI00946099.1	sorcin	2.460	1.653	0.672
648	IPI00980330.1	RAP2A, member of RAS oncogene family	2.108	1.703	0.808
649	IPI00303207.3	ATP-binding cassette sub-family E member 1	2.586	1.565	0.555
650	IPI00289819.5	Cation-independent mannose-6-phosphate receptor	4.060	3.065	0.755
651	IPI00010896.3	Chloride intracellular channel protein 1	3.893	2.847	0.731
652	IPI00032900.1	BolA-like protein 1	1.672	1.397	0.835
653	IPI00306516.1	Mitochondrial import inner membrane translocase subun	2.452	2.514	1.026
654	IPI00792186.4	ATP-binding cassette, sub-family F (GCN20), member 1	2.301	1.794	0.780
655	IPI00909058.1	cDNA FLJ54246, highly similar to Homo sapiens BRCA2 and	2.050	2.164	1.107

656	IPI01011924.1	ubiquitin specific peptidase 7 (herpes virus-associated)	3.215	2.651	0.824
657	IPI00470922.2	Isoform 2 of N-alpha-acetyltransferase 50, NatE catalytic s	3.337	2.432	0.729
658	IPI00977975.1	chromosome 11 open reading frame 58	2.303	1.720	0.747
659	IPI00978083.1	Uncharacterized protein	2.164	1.699	0.785
660	IPI00014238.2	Isoform Cytoplasmic of Lysyl-tRNA synthetase	2.485	1.985	0.799
661	IPI01008912.1	NADH dehydrogenase (ubiquinone) Fe-S protein 8, 23kDa	2.285	1.636	0.716
662	IPI00982639.1	chromosome 11 open reading frame 31	2.657	1.695	0.638
663	IPI00967533.1	transmembrane protein 33	4.675	3.615	0.773
664	IPI00647084.2	programmed cell death protein 4 isoform 3	4.134	3.036	0.734
665	IPI01014222.1	damage-specific DNA binding protein 1, 127kDa	2.132	1.831	0.859
666	IPI00917463.1	Isoform 3 of Ancient ubiquitous protein 1	3.145	2.560	0.814
667	IPI00012197.1	dCTP pyrophosphatase 1	2.486	1.875	0.754
668	IPI00014230.1	Complement component 1 Q subcomponent-binding prote	2.123	1.198	0.564
669	IPI00410615.2	Isoform 3 of Low molecular weight phosphotyrosine prote	2.945	2.160	0.734
670	IPI00010414.4	PDZ and LIM domain protein 1	2.268	2.842	1.253
671	IPI00290142.5	CTP synthase 1	2.521	2.076	0.824
672	IPI00258833.1	sorting nexin-6 isoform a	2.005	1.829	0.913
673	IPI00646864.1	signal sequence receptor, delta	3.223	2.155	0.669
674	IPI00783302.1	Isoform 1 of Pentatricopeptide repeat-containing protein	2.715	1.697	0.625
675	IPI00017672.4	cDNA FLJ25678 fis, clone TST04067, highly similar to PURINE	2.141	1.724	0.805
676	IPI00010270.1	Ras-related C3 botulinum toxin substrate 2	1.842	1.709	0.928
677	IPI00218922.5	Translocation protein SEC63 homolog	1.813	2.331	1.286
678	IPI00984586.1	trypsin-3 isoform 4 preproprotein	1.541	1.084	0.704
679	IPI01012629.1	aspartyl aminopeptidase	2.393	2.180	0.911
680	IPI00642944.1	Poly(A) binding protein, cytoplasmic 4 (Inducible form), isc	2.871	2.563	0.892
681	IPI00440719.2	N(alpha)-acetyltransferase 10, NatA catalytic subunit	2.611	2.049	0.785
682	IPI00973891.1	NudC domain containing 2	2.523	1.967	0.780
683	IPI00797679.1	Inosine triphosphatase (Nucleoside triphosphate pyroph	2.546	1.718	0.675
684	IPI00294495.5	Ubiquitin-fold modifier-conjugating enzyme 1	1.754	1.531	0.873
685	IPI00303105.3	Small ubiquitin-related modifier 1	3.897	2.277	0.584
686	IPI00028004.2	Proteasome subunit beta type-3	2.801	1.747	0.708
687	IPI00909879.1	cDNA FLJ50886, highly similar to Aconitate hydratase, mito	2.786	2.187	0.785
688	IPI00000606.5	Tetratricopeptide repeat protein 4	2.051	2.048	0.998
689	IPI00879792.1	Cytochrome b5 reductase 3	2.312	2.607	1.128
690	IPI00377080.1	COP9 signalosome complex subunit 8 isoform 2	2.156	1.576	0.731
691	IPI00556611.1	39S ribosomal protein L22, mitochondrial isoform b	2.767	1.976	0.714
692	IPI00448725.1	RAB4B protein	1.865	3.320	1.780
693	IPI00981273.2	cDNA FLJ14161 fis, clone NT2RM2001803, highly similar to I	3.562	3.791	1.064
694	IPI00001146.1	U6 snRNA-associated Sm-like protein LSm6	2.448	1.326	0.542
695	IPI00645836.1	esterase D	2.445	2.476	1.013
696	IPI00178047.7	proline, glutamate and leucine rich protein 1	2.174	3.276	1.507
697	IPI00925574.1	COP9 constitutive photomorphogenic homolog subunit 6 (A	3.088	3.438	1.113
698	IPI00073602.1	Exosome complex component MTR3	3.019	1.679	0.805
699	IPI00879002.1	Tubulin tyrosine ligase-like family, member 12	3.052	2.679	0.878
700	IPI00181728.1	Ribosome biogenesis protein BRX1 homolog	3.432	2.270	0.661
701	IPI00062866.4	Isoform 1 of Zinc finger CCCH-type antiviral protein 1-like	2.590	2.770	1.070
702	IPI00794082.2	cDNA FLJ57650, highly similar to Bleomycin hydrolase	2.534	2.463	0.972

703	IPI00291922.2	Proteasome subunit alpha type-5	2.973	2.087	0.702
704	IPI00015838.3	Cell growth-regulating nucleolar protein	2.101	2.243	1.067
705	IPI01014863.1	Acetyl-CoA acetyltransferase, cytosolic	4.044	2.972	0.735
706	IPI00162330.3	39S ribosomal protein L37, mitochondrial	2.667	2.284	0.856
707	IPI00022640.1	Neurogranin	3.763	2.308	0.613
708	IPI00976464.1	Sjogren syndrome/scleroderma autoantigen 1	2.177	1.595	0.733
709	IPI00014437.4	Sjoegren syndrome nuclear autoantigen 1	2.575	1.689	0.656
710	IPI00024821.1	26S proteasome non-ATPase regulatory subunit 14	2.690	2.618	0.973
711	IPI00646978.4	lysophospholipase II	2.039	1.463	0.718
712	IPI00925853.1	cDNA FLJ60586, highly similar to NADH-ubiquinone oxidore	5.404	4.810	1.117
713	IPI00235412.7	dynamin 1-like	2.466	1.987	0.806
714	IPI00030243.1	Isoform 1 of Proteasome activator complex subunit 3	3.658	1.704	0.466
715	IPI00966744.1	Ubiquitin carrier protein	2.630	1.922	0.731
716	IPI00299155.5	Proteasome subunit alpha type-4	2.387	1.962	0.822
717	IPI00794194.1	developmentally regulated GTP binding protein 2	2.134	1.856	0.870
718	IPI00016912.1	Tetratricopeptide repeat protein 1	6.247	6.968	1.115
719	IPI00784936.1	septin-9 isoform c	2.793	2.610	0.935
720	IPI00294398.2	Isoform 1 of Hydroxyacyl-coenzyme A dehydrogenase, mito	2.185	1.507	0.690
721	IPI00000873.3	Valyl-tRNA synthetase	2.085	2.211	1.060
722	IPI00032827.1	Pre-mRNA branch site protein p14	3.887	2.770	0.712
723	IPI00293434.2	Signal recognition particle 14 kDa protein	2.967	2.050	0.691
724	IPI00657698.2	cDNA FLJ59884, highly similar to Secernin-1	1.915	2.157	1.126
725	IPI00645380.1	Isoform 2 of E3 ubiquitin-protein ligase CHIP	2.305	2.593	1.125
726	IPI00643317.3	high mobility group box 3	2.203	1.336	0.606
727	IPI00448974.2	NUP107 protein	2.710	1.857	0.685
728	IPI00028414.3	Glia maturation factor gamma	2.044	1.554	0.760
729	IPI00060715.1	BTB/POZ domain-containing protein KCTD12	2.609	2.939	1.006
730	IPI00216057.6	Sorbitol dehydrogenase	2.541	2.083	0.820
731	IPI00939491.1	Isoform 2 of Cysteinyl-tRNA synthetase, cytoplasmic	2.690	2.003	0.786
732	IPI00290460.3	Eukaryotic translation initiation factor 3 subunit G	2.420	2.037	0.842
733	IPI00896410.1	Ribosomal protein L36a	5.359	2.556	0.477
734	IPI00936931.2	cDNA FLJ57553, highly similar to SPFH domain-containing p	2.319	2.025	0.873
735	IPI00412224.2	WD repeat-containing protein 11	1.928	2.150	1.115
736	IPI00554626.3	C-terminal-binding protein 1 isoform 2	1.644	1.853	1.127
737	IPI00922378.1	cDNA FLJ55038, highly similar to Nicotinamide phosphorib	1.455	1.441	0.990
738	IPI00639981.1	Phosphofructokinase, platelet	3.545	2.880	0.812
739	IPI01010750.1	DNA ligase (Fragment)	3.226	2.021	0.866
740	IPI00792207.3	aldehyde dehydrogenase, mitochondrial Isoform 2 precurs	2.414	2.194	0.909
741	IPI00030320.4	Probable ATP-dependent RNA helicase DDX6	1.995	1.821	0.913
742	IPI00009342.1	Ras GTPase-activating-like protein IQGAP1	2.655	2.012	0.758
743	IPI00026964.2	Cytochrome b-c1 complex subunit Rieske, mitochondrial	1.890	1.173	0.620
744	IPI01010035.1	cDNA FLJ52928, highly similar to COP9 signalosome comple	1.734	1.844	1.063
745	IPI00218200.8	B-cell receptor-associated protein 31	3.167	2.529	0.798
746	IPI01009610.1	cDNA FLJ57998, highly similar to Homo sapiens myo-inosit	1.925	2.807	1.458
747	IPI00642256.2	Isoform 2 of F-actin-capping protein subunit beta	2.434	1.922	0.789
748	IPI00399170.1	Isoform 2 of Regulator of nonsense transcripts 1	4.314	2.970	0.689
749	IPI00745613.2	Exosome complex component RRP41	2.900	2.337	0.806

750	IPI00027547.2	Dermcidin	1.686	0.837	0.496
751	IPI00429689.3	Serine/threonine-protein phosphatase 2A catalytic subun	3.300	2.694	0.817
752	IPI00018691.1	Isoform 1 of 28S ribosomal protein S18a, mitochondrial	2.826	2.264	0.801
753	IPI00967112.1	mitochondrial ribosomal protein S27	2.119	1.786	0.843
754	IPI00011726.1	Isoform 1 of RNA 3'-terminal phosphate cyclase	2.371	1.781	0.751
755	IPI00014458.1	Protein SCO2 homolog, mitochondrial	2.402	1.707	0.711
756	IPI00006113.1	DNA-directed RNA polymerase II subunit RPB9	2.582	1.927	0.746
757	IPI00031106.1	Proteasome assembly chaperone 3	6.824	4.055	0.594
758	IPI00383046.3	Carboxymethylenebutenolidase homolog	2.838	1.788	0.690
759	IPI00215777.1	Isoform B of Phosphate carrier protein, mitochondrial	3.545	2.478	0.699
760	IPI00946474.1	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 5	3.101	1.462	0.924
761	IPI00030877.2	15 kDa selenoprotein isoform 1 precursor	2.540	1.853	0.729
762	IPI01012198.1	tRNA methyltransferase 11 homolog	2.098	2.159	1.029
763	IPI00921488.1	Isoform 4 of COP9 signalosome complex subunit 1	2.817	1.936	0.687
764	IPI00000335.1	Histidine triad nucleotide-binding protein 2, mitochondria	2.578	1.729	0.670
765	IPI00922583.1	phosphatidylinositol-4-phosphate 5-kinase type-1 alpha i	2.784	1.515	0.544
766	IPI01012747.1	aldehyde dehydrogenase 5 family, member A1	2.159	1.826	0.846
767	IPI00155054.3	cDNA FLJ50635, highly similar to ATP-dependent RNA helica	2.616	1.702	0.651
768	IPI00925071.1	nucleoporin 205kDa	3.645	3.072	0.843
769	IPI00375533.5	Isoform 2 of NEDD8-activating enzyme E1 catalytic subunit	2.371	1.816	0.766
770	IPI00793076.1	general transcription factor IIA, 2, 12kDa	2.122	1.153	0.543
771	IPI00219005.3	Peptidyl-prolyl cis-trans isomerase FKBP4	2.143	1.773	0.827
772	IPI00303318.2	Protein FAM49B	2.272	3.090	1.360
773	IPI00003217.3	Proteasome subunit beta type-7	3.059	1.995	0.652
774	IPI00026970.4	FACT complex subunit SPT16	4.823	3.009	0.624
775	IPI00926917.1	eukaryotic translation initiation factor 4 gamma, 1	3.165	2.438	0.770
776	IPI00377233.1	Isoform 2 of 39S ribosomal protein L11, mitochondrial	2.192	1.692	0.772
777	IPI01011967.1	cDNA FLJ54535, highly similar to Ribosomal protein S6 kina	2.600	1.925	0.740
778	IPI00430781.1	chromosome 8 open reading frame 82	2.416	1.799	0.745
779	IPI00220059.5	NADH dehydrogenase [ubiquinone] 1 beta subcomplex su	3.058	2.374	0.777
780	IPI00964692.1	exportin 5	2.475	2.114	0.854
781	IPI01013481.1	cDNA FLJ50601, highly similar to Glutathione synthetase	2.255	2.475	1.097
782	IPI00966735.1	28 kDa protein	2.747	2.290	0.834
783	IPI00966258.1	ubiquitin carboxyl-terminal esterase L1 (ubiquitin thioles	2.146	1.764	0.822
784	IPI00940901.1	Isoform 2 of RRP12-like protein	5.202	2.854	0.549
785	IPI00093057.6	Coproporphyrinogen-III oxidase, mitochondrial	2.577	2.605	1.011
786	IPI00031526.3	chromosome 19 open reading frame 43	1.864	1.295	0.695
787	IPI00908327.1	Isoform 2 of RING finger protein 114	2.511	2.192	0.873
788	IPI01013918.1	mannose-6-phosphate receptor (cation dependent)	2.134	1.635	0.766
789	IPI00397700.5	Isoform 2 of PHD finger protein 6	3.123	2.048	0.656
790	IPI00916535.1	prolyl 4-hydroxylase subunit alpha-1 isoform 3 precursor	2.800	2.054	0.734
791	IPI00909399.2	xaa-Pro dipeptidase isoform 3	2.437	2.567	1.053
792	IPI01011453.1	SUMO-activating enzyme subunit 1 isoform c	2.662	2.479	0.931
793	IPI00513841.1	Nicastrin	2.749	2.277	0.828
794	IPI00022648.2	Eukaryotic translation initiation factor 5	3.182	3.422	1.075
795	IPI00014263.1	Isoform Long of Eukaryotic translation initiation factor 4H	2.299	1.646	0.716
796	IPI00719256.2	SART3 protein	3.351	3.069	0.916

797	IPI00292020.3	Spermidine synthase	2.230	2.343	1.051
798	IPI00514522.1	chromosome 1 open reading frame 123	2.005	1.453	0.725
799	IPI00947116.1	dihydrofolate reductase-like 1	2.313	1.752	0.758
800	IPI00966243.1	cytochrome b5 type B (outer mitochondrial membrane)	2.299	1.775	0.772
801	IPI00894110.1	polyribonucleotide nucleotidyltransferase 1	2.189	1.886	0.861
802	IPI00514669.1	SH3 domain binding glutamic acid-rich protein like 3	1.780	1.033	0.581
803	IPI00003326.4	ADP-ribosylation factor-like protein 2	2.511	1.969	0.784
804	IPI00909691.1	cDNA FLJ50174, highly similar to Homo sapiens SNARE prot	3.220	2.524	0.784
805	IPI00980207.1	signal recognition particle 19 kDa protein isoform 3	3.782	2.620	0.693
806	IPI00940222.2	Isoform 3 of A-kinase anchor protein 12	4.888	3.044	0.623
807	IPI00182289.6	40S ribosomal protein S29	2.108	1.108	0.525
808	IPI00939707.1	clustered mitochondria (cluA/CLU1) homolog	2.519	2.489	0.988
809	IPI00005675.3	NF-kappa-B-repressing factor	1.993	2.072	1.040
810	IPI00396329.1	Ribosome production factor 2 homolog	2.990	2.136	0.714
811	IPI00299214.7	Thymidine kinase, cytosolic	4.849	4.582	0.945
812	IPI00023728.1	Gamma-glutamyl hydrolase	2.484	2.858	1.150
813	IPI00643709.1	Solute carrier family 16, member 1	3.415	2.668	0.781
814	IPI00917193.1	hexokinase 2	2.090	1.811	0.867
815	IPI00943181.1	proteasome (prosome, macropain) activator subunit 2 (PA	2.981	2.827	0.948
816	IPI00013180.2	Protein BUD31 homolog	2.944	2.154	0.732
817	IPI00892533.1	chromosome 7 open reading frame 50	2.682	1.828	0.681
818	IPI00005050.1	28S ribosomal protein S14, mitochondrial			0.343
819	IPI00978325.1	cathepsin C	2.305	1.492	0.647
820	IPI00452731.6	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex s	3.039	1.675	0.551
821	IPI00641181.5	MARCKS-related protein	3.731	3.671	0.984
822	IPI00006754.1	DDB1- and CUL4-associated factor 7	2.423	1.968	0.812
823	IPI01015967.1	DnaJ (Hsp40) homolog, subfamily A, member 1	2.114	1.915	0.906
824	IPI00002824.7	Cysteine and glycine-rich protein 2	2.587	1.514	0.585
825	IPI00021266.1	60S ribosomal protein L23a	3.833	1.775	0.463
826	IPI00964725.1	succinate dehydrogenase complex, subunit A, flavoprotein	0.869		
827	IPI00967916.1	cytochrome c oxidase subunit VIIc	2.410	1.109	0.460
828	IPI00219351.3	Isoform 3 of 28S ribosomal protein S11, mitochondrial	3.212	2.152	0.670
829	IPI00604652.1	NEDD8-activating enzyme E1 regulatory subunit isoform c	2.773	1.721	0.621
830	IPI00514049.1	Cytidine monophosphate (UMP-CMP) kinase 1, cytosolic	3.965	2.380	0.600
831	IPI00016339.4	Ras-related protein Rab-5C	1.869	0.801	0.429
832	IPI00847896.1	Similar to Glutamate-rich WD repeat-containing protein 1	7.164	5.378	0.751
833	IPI00217563.4	Isoform Beta-1A of Integrin beta-1	3.743	3.076	0.822
834	IPI01009997.1	cDNA FLJ51981, highly similar to Histone deacetylase 1	2.711	1.364	0.503
835	IPI00032533.3	WD repeat-containing protein 18	2.950	2.088	0.708
836	IPI01018037.1	replication factor C subunit 5 isoform 4	2.413	2.617	1.084
837	IPI00023530.7	Cyclin-dependent kinase 5	2.616	2.035	0.778
838	IPI00844040.2	cDNA FLJ59759, highly similar to Protein SET	3.080	2.531	0.821
839	IPI00965548.1	thyroid hormone receptor interactor 13	1.950	2.213	1.135
840	IPI01015295.1	cDNA FLJ30049 fis, clone ADRGL1000033, highly similar to 2	2.738	2.641	0.965
841	IPI00745105.1	chromosome 16 open reading frame 13	2.094	1.559	0.745
842	IPI00964335.1	eukaryotic translation termination factor 1	3.823	4.749	1.242
843	IPI00641266.4	calpain-2 catalytic subunit isoform 2	2.380	2.177	0.915

844	IPI00902463.1	cDNA FLJ46898 fis, clone UTERU3022168, highly similar to Protein FAM62A			0.759
845	IPI00916207.1	3-hydroxyisobutyryl-CoA hydrolase	2.806	2.330	0.830
846	IPI00854677.1	fused in sarcoma	2.574	2.182	0.848
847	IPI00966135.1	histidine triad nucleotide binding protein 1	3.201	2.255	0.704
848	IPI00979071.1	tumor protein, translationally-controlled 1	2.653	1.824	0.687
849	IPI00797616.2	Isoform 3 of BRCA1-associated ATM activator 1	3.946	2.358	0.598
850	IPI00908614.1	cDNA FLJ51287, highly similar to WD repeat protein 39	2.637	1.951	0.740
851	IPI00798211.1	tubulin folding cofactor B	2.433	1.925	0.791
852	IPI00185146.5	Importin-9	2.664	0.929	0.349
853	IPI00008557.6	Insulin-like growth factor 2 mRNA-binding protein 1	2.263	0.748	0.330
854	IPI00980519.1	Conserved hypothetical protein	2.025	1.969	0.972
855	IPI00927827.1	replication factor C (activator 1) 4, 37kDa	2.698	2.152	0.798
856	IPI00917166.1	dynactin 1			0.397
857	IPI00980429.1	chloride channel, nucleotide-sensitive, 1A	2.701	2.561	0.948
858	IPI00791490.1	pyridoxal (pyridoxine, vitamin B6) kinase	4.426	4.951	1.119
859	IPI00641815.1	Isoform 2 of TIP41-like protein	3.098	2.525	0.815
860	IPI00005969.3	F-actin-capping protein subunit alpha-1	3.799	3.596	0.946
861	IPI00443657.2	cold inducible RNA binding protein	3.701	2.239	0.605
862	IPI00024911.1	Endoplasmic reticulum resident protein 29	2.356	1.632	0.693
863	IPI00964348.1	DTW domain containing 2	3.410	5.144	1.509
864	IPI00848298.1	Isoform 2 of Apolipoprotein A-I-binding protein	2.322	1.784	0.768
865	IPI00925058.1	Ribosomal protein L15	2.993	2.573	0.860
866	IPI00410714.5	Hemoglobin subunit alpha	2.568	1.389	0.541
867	IPI00917535.1	mitochondrial ribosomal protein L30	2.769	1.834	0.662
868	IPI01015489.1	cDNA FLJ60345, highly similar to Protein transport protein S	2.280	1.720	0.755
869	IPI00174852.4	Mediator of RNA polymerase II transcription subunit 20	2.548	1.985	0.779
870	IPI00012315.2	Nucleoside diphosphate kinase 3	1.893	1.639	0.866
871	IPI01012187.1	cDNA, FLJ79426, highly similar to Serine/threonine-protein	3.187	4.229	1.327
872	IPI00747810.3	fascin homolog 1, actin-bundling protein (Strongylocentro	4.249	6.229	1.466
873	IPI00924813.1	Similar to Ribosomal protein L37a	3.527	2.034	0.577
874	IPI00025178.3	Pre-mRNA-splicing factor SPF27	3.303	1.948	0.590
875	IPI00030929.4	myosin regulatory light polypeptide 9 isoform b	2.667	1.790	0.671
876	IPI00029114.1	Peptidyl-tRNA hydrolase ICT1, mitochondrial	2.846	1.963	0.690
877	IPI00922290.1	cDNA FLJ53094, highly similar to Receptor expression-enha	3.823	2.661	0.696
878	IPI00018203.1	Isoform SRP55-2 of Serine/arginine-rich splicing factor 6	2.375	1.707	0.719
879	IPI00016532.4	chromosome 4 open reading frame 27			0.927
880	IPI00844002.1	LYST-interacting protein LIP5 (Fragment)	3.452	3.185	0.923
881	IPI00026496.3	Nucleoplasmin-3	2.001	1.537	0.768
882	IPI00419797.5	signal recognition particle 9kDa	1.806	0.879	0.487
883	IPI00029239.2	Isoform 2 of L-2-hydroxyglutarate dehydrogenase, mitocho	4.814	4.519	0.939
884	IPI00917449.1	gamma-glutamylcyclotransferase	2.296	1.721	0.750
885	IPI00910220.1	cDNA FLJ60230, highly similar to Arsenical pump-driving AT	3.281	2.688	0.819
886	IPI00981356.1	3-hydroxyacyl-CoA dehydratase 3-like isoform 3, partial	4.172	2.903	0.696
887	IPI00868858.1	Isoform 3 of MYC-induced nuclear antigen	2.429	2.772	1.141
888	IPI00925203.1	glutaminyl-tRNA synthetase			2.922
889	IPI00892788.1	high density lipoprotein binding protein	7.226	2.066	0.286
890	IPI01015780.1	cDNA FLJ57449, highly similar to Notchless homolog 1	1.859	2.084	1.121

891	IPI00909038.1	cDNA FLJ58068, highly similar to Seryl-tRNA synthetase, mi	1.866	2.015	1.080
892	IPI00219783.7	Ubiquitin-conjugating enzyme E2 G1	2.591	2.192	0.846
893	IPI00925737.1	phosphoserine phosphatase	2.759	2.181	0.791
894	IPI00100984.4	Isoform 1 of HEAT repeat-containing protein 3	2.466	2.494	1.011
895	IPI00004454.3	Isoform 1 of Dolichol-phosphate mannosyltransferase sul	2.544	2.135	0.839
896	IPI00915874.1	partner of NOB1 homolog (S. cerevisiae)	3.406	0.889	0.261
897	IPI00006379.1	Nucleolar protein 58	2.835	0.970	0.342
898	IPI00184854.1	FK506 binding protein 10, 65 kDa	2.422	2.057	0.849
899	IPI00101734.5	family with sequence similarity 105, member B	2.016	1.417	0.703
900	IPI00186338.1	barrier-to-autointegration factor-like	1.924	0.551	0.287
901	IPI00926139.1	mitochondrial ribosomal protein S25	4.682	3.599	0.769
902	IPI00409639.1	Isoform 4 of Methyltransferase-like protein 13	1.656	1.871	1.130
903	IPI00910420.1	Isoform 3 of Alpha-aminoadipic semialdehyde dehydroge	1.686	1.962	1.164
904	IPI00924740.1	programmed cell death 6 interacting protein	1.860	1.837	0.988
905	IPI00301051.3	Isoform 1 of NHL repeat-containing protein 2	3.799	2.256	0.594
906	IPI00335589.5	RNA methyltransferase-like protein 1	1.915	2.480	1.295
907	IPI00032849.2	Nucleolar protein 16	1.942	1.526	0.785
908	IPI00032903.3	Peptidyl-tRNA hydrolase 2, mitochondrial	3.312	3.700	1.117
909	IPI00552190.1	Proteasome (Prosome, macropain) 26S subunit, non-ATPas	2.192	1.287	0.587
910	IPI00940264.1	Galactokinase	2.557	3.010	1.177
911	IPI00218112.1	Isoform Short of Glutaryl-CoA dehydrogenase, mitochondri	2.354	1.449	0.616
912	IPI00983446.1	UV radiation resistance associated	4.931	1.856	0.376
913	IPI00061525.3	Glucosamine 6-phosphate N-acetyltransferase	2.142	1.885	0.880
914	IPI00017704.3	Coactosin-like protein	3.031	1.794	0.592
915	IPI00792829.1	cDNA FLJ57094, highly similar to Probable ATP-dependent l	2.587	2.343	0.906
916	IPI00926756.1	Isoform 4 of TBC1 domain family member 4	3.090	2.892	0.936
917	IPI00910540.1	cDNA FLJ51496, highly similar to Tyrosine-protein kinase C	1.915	2.219	1.159
918	IPI00922322.1	cDNA FLJ54129, highly similar to Nucleosome assembly pro	3.344	2.988	0.894
919	IPI00940293.5	cDNA FLJ56433, highly similar to Collagen alpha-2(IV) chai	2.944	1.794	0.609
920	IPI01011794.1	cDNA FLJ55643, highly similar to SEC23-interacting protein	1.859	1.320	0.710
921	IPI00965185.1	aminoacyl tRNA synthetase complex-interacting multifunc	2.288	3.295	1.440
922	IPI00395779.4	chromosome 20 open reading frame 27	2.534	1.686	0.666
923	IPI01015329.1	cDNA FLJ52203, highly similar to 3'(2'),5'-bisphosphate nuc	3.475	3.103	0.893
924	IPI00976190.1	splicing factor 3b, subunit 2, 145kDa	4.347	3.358	0.772
925	IPI00023542.6	Transmembrane emp24 domain-containing protein 9	1.739	1.681	0.967
926	IPI01014928.1	cDNA FLJ55328, highly similar to Homo sapiens BPY2 intera	3.894	2.818	0.724
927	IPI00845493.1	Brain type mu-glutathione S-transferase	4.100	3.005	0.733
928	IPI00219065.2	Isoform 5 of Glycogen debranching enzyme	3.575	2.946	0.824
929	IPI00979951.1	proteasome (prosome, macropain) 26S subunit, ATPase, 3	1.682	1.423	0.846
930	IPI00549993.3	Isoform 1 of Protein FAM188A	2.963	3.028	1.022
931	IPI00791680.1	cortactin	2.526	2.019	0.799
932	IPI01009790.1	cDNA, FLJ79293, highly similar to WD repeat protein 71	2.719	2.069	0.761
933	IPI00946316.1	karyopherin alpha 4 (importin alpha 3)	2.852	1.685	0.591
934	IPI01014354.1	cDNA FLJ54039, highly similar to Protein arginine N-methyltransferase 5			0.301
935	IPI00910350.1	cDNA FLJ52068, highly similar to Microtubule-associated p	2.320	1.855	0.799
936	IPI00384155.1	Full-length cDNA clone CS0DI002YH20 of Placenta of Homo	2.855	3.138	1.099
937	IPI00981694.1	ATX1 antioxidant protein 1 homolog (yeast)	2.160	1.436	0.665

938	IPI00946674.1	aldo-keto reductase family 7, member A2 (aflatoxin aldeh	8.035	7.719	0.961
939	IPI00001655.1	chromosome 16 open reading frame 80	2.139	1.582	0.740
940	IPI00654793.2	NAD kinase domain containing 1	6.247	3.579	0.573
941	IPI01015376.1	ATP synthase gamma chain	1.992	1.458	0.732
942	IPI00002214.1	Importin subunit alpha-2	3.253	2.384	0.733
943	IPI00908375.1	cDNA FLJ52821, highly similar to Protein transport protein S	3.052	1.676	0.549
944	IPI00978272.1	methylcrotonoyl-CoA carboxylase beta chain, mitochondria	3.035	1.741	0.574
945	IPI00945912.1	cDNA FLJ59963, highly similar to Homo sapiens multiple s	2.105	2.442	1.160
946	IPI00927809.1	DEAH (Asp-Glu-Ala-His) box polypeptide 30	3.310	2.757	0.833
947	IPI00927458.1	ribosomal protein L32	4.089	3.120	0.763
948	IPI00183603.3	Oligosaccharyltransferase complex subunit OSTC	8.362	4.496	0.538
949	IPI00894139.1	golgi to ER traffic protein 4 homolog (S. cerevisiae)	5.418	5.435	1.003
950	IPI00878039.2	coiled-coil domain containing 117	2.228	2.479	1.112
951	IPI00795057.1	mitochondrial ribosomal protein S28	2.925	2.252	0.770
952	IPI00641692.3	Ribonuclease P	3.031	1.810	0.597
953	IPI00642048.2	GDP-mannose 4,6-dehydratase	3.094	2.520	0.815
954	IPI00334282.2	Protein FAM3C			1.020
955	IPI01008950.1	Isoform 4 of UDP-N-acetylglucosamine--peptide N-acetylgl	2.168	1.951	0.900
956	IPI00885131.1	Isoform 3 of tRNA (adenine-N(1)-)-methyltransferase non-	2.616	1.633	0.624
957	IPI00903191.1	Eukaryotic translation initiation factor 3, subunit D	2.972	2.215	0.745
958	IPI00886797.1	Isoform 2 of 2',5'-phosphodiesterase 12	2.582	2.133	0.826
959	IPI01015636.1	pogo transposable element with ZNF domain	3.742	3.187	0.852
960	IPI00871780.1	RNA-binding protein 12B	3.431	3.040	0.886
961	IPI00908741.1	FAD-dependent oxidoreductase domain containing 1	1.919	2.585	1.347
962	IPI00893867.1	hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/e	1.488	1.894	1.273
963	IPI00940816.2	Isoform 3 of Rho guanine nucleotide exchange factor 2	2.306	1.978	0.858
964	IPI00007019.1	Peptidyl-prolyl cis-trans isomerase-like 1	2.867	1.869	0.652
965	IPI00945733.1	karyopherin alpha 1 (importin alpha 5)	4.379	5.617	1.283
966	IPI00399089.4	LDLR chaperone MESD	1.868	1.485	0.795
967	IPI01014449.1	chromobox homolog 1	2.312	1.698	0.734
968	IPI00292894.5	Pre-rRNA-processing protein TSR1 homolog	1.797	1.876	1.044
969	IPI00008436.4	DNA polymerase epsilon subunit 4	2.749	2.284	0.831
970	IPI00981292.1	cDNA FLJ53391, highly similar to ATP-binding cassette sub-	4.960	3.100	0.625
971	IPI00220835.7	Protein transport protein Sec61 subunit beta	5.362	3.242	0.605
972	IPI00061531.4	39S ribosomal protein L53, mitochondrial	3.948	2.101	0.532
973	IPI00297626.4	Syntaxin-binding protein 3	2.726	1.236	0.453
974	IPI01014726.1	cDNA, FLJ79305, highly similar to Calponin-1	2.413	1.579	0.654
975	IPI00024284.6	Basement membrane-specific heparan sulfate proteoglyc	2.833	2.348	0.829
976	IPI00329373.3	Protein QIL1	1.913	0.926	0.484
977	IPI00015833.1	Coiled-coil-helix-coiled-coil-helix domain-containing prot	2.578	1.907	0.740
978	IPI00874145.2	dyskeratosis congenita 1, dyskerin	2.384	1.598	0.670
979	IPI00788157.1	Isoform 2 of 5'-3' exoribonuclease 2	2.102	2.014	0.958
980	IPI00306290.5	Exportin-T	1.257	0.808	0.643
981	IPI00783001.1	Isoform 1 of Probable methyltransferase-like protein 15	2.824	2.151	0.762
982	IPI00477853.2	zinc finger protein 235	3.082	2.182	0.708
983	IPI00926599.1	glycerol-3-phosphate dehydrogenase 1-like	2.512	2.391	0.951
984	IPI00908410.1	cDNA FLJ56566, highly similar to Small glutamine-rich tetra	1.720	1.936	1.126

985	IPI00032881.2	28S ribosomal protein S23, mitochondrial	2.074	1.587	0.765
986	IPI00794240.1	mitochondrial ribosomal protein L39	2.990	2.768	0.926
987	IPI00966215.1	TROVE domain family, member 2	2.401	1.678	0.699
988	IPI00868803.2	Similar to Survival of motor neuron 2, centromeric isoform	2.784	3.119	1.120
989	IPI00985284.1	La ribonucleoprotein domain family, member 1	2.129	1.816	0.853
990	IPI01015748.1	cDNA FLJ54999, highly similar to Mitochondrial-processing	1.620	1.476	0.911
991	IPI00845477.1	Isoform 2 of Alpha-ketoglutarate-dependent dioxygenase	2.884	2.061	0.715
992	IPI00062882.4	Cytoplasmic tRNA 2-thiolation protein 1	2.931	2.506	0.855
993	IPI00941385.2	Isoform 3 of Ubiquitin carboxyl-terminal hydrolase 10	2.074	1.522	0.734
994	IPI01011431.1	cDNA FLJ60167, highly similar to Cytosolic acyl coenzyme A thioester hydrolase			0.666
995	IPI01009918.1	Protease serine 1	1.671	1.127	0.674
996	IPI00642982.1	LONP1 protein	3.097	2.134	0.689
997	IPI00647368.1	isocitrate dehydrogenase 3 (NAD+) gamma	2.886	2.075	0.719
998	IPI00446669.1	Isoform 2 of Multiple myeloma tumor-associated protein	2.754	3.241	1.177
999	IPI00398758.1	Isoform 2 of Enoyl-CoA delta isomerase 1, mitochondrial	2.832	2.088	0.737
1000	IPI01015385.1	Isocitrate dehydrogenase	8.725	4.943	0.566
1001	IPI00797738.1	Cytochrome c oxidase subunit 6B1	2.063	1.310	0.635
1002	IPI00946017.1	ubiquitin specific peptidase 9, X-linked	3.737	2.796	0.748
1003	IPI00030968.4	chromosome 9 open reading frame 142	2.547	1.776	0.697
1004	IPI01013430.1	Selenophosphate synthetase 1 +E9a variant	4.037	3.503	0.868
1005	IPI00107339.4	Isoform 1 of Guanine nucleotide-binding protein subunit	2.983	3.335	1.118
1006	IPI00967384.2	translocase of inner mitochondrial membrane 8 homolog	1.961	0.883	0.450
1007	IPI00644506.1	cDNA FLJ58756, highly similar to Nuclear pore complex pro	2.598	2.234	0.860
1008	IPI00328298.6	Isoform 2 of Structural maintenance of chromosomes prot	3.847	2.616	0.680
1009	IPI00514902.1	Ubiquitin protein ligase E3 component n-recognin 4	2.907	2.482	0.854
1010	IPI00018331.3	SNARE-associated protein Snapin	3.185	2.799	0.879
1011	IPI00975492.1	pyruvate dehydrogenase complex, component X	1.710	1.605	0.939
1012	IPI00880148.1	lectin, galactoside-binding, soluble, 1	2.954	1.842	0.624
1013	IPI00878100.2	GTP binding protein 1	2.220	1.955	0.881
1014	IPI00221089.5	40S ribosomal protein S13	2.269	2.011	0.886
1015	IPI00793395.1	cDNA FLJ37679 fis, clone BRHIP2012922, highly similar to Co	2.913	2.314	0.794
1016	IPI00291755.6	Isoform 1 of Nuclear pore membrane glycoprotein 210	3.019	2.519	0.834
1017	IPI00974419.1	minichromosome maintenance complex component 4	1.937	2.194	1.132
1018	IPI00025285.3	V-type proton ATPase subunit G 1	3.081	1.949	0.633
1019	IPI01011252.2	phosphatidylinositol transfer protein, alpha	2.155	3.220	1.494
1020	IPI00893025.1	mutS homolog 6 (E. coli)	4.563	3.178	0.696
1021	IPI00916549.1	budding uninhibited by benzimidazoles 1 homolog (yeast	1.859	1.930	1.038
1022	IPI00947340.1	FKBP8 isoform 1	2.999	1.948	0.650
1023	IPI00301609.8	Serine/threonine-protein kinase Nek9	2.673	2.473	0.925
1024	IPI00980165.2	Mesencephalic astrocyte-derived neurotrophic factor	1.674	1.749	1.045
1025	IPI00894420.1	dihydropyrimidinase-like 5	3.363	2.218	0.660
1026	IPI00915422.1	coatomer subunit delta isoform 2	2.156	1.560	0.724
1027	IPI00940506.2	cDNA FLJ58519, highly similar to Hermansky-Pudlak syndro	2.425	1.603	0.661
1028	IPI01011998.1	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 8	2.381	1.972	0.828
1029	IPI00945124.1	Brain my045 protein	2.495	2.240	0.898
1030	IPI00300299.6	Signal peptidase complex subunit 3	2.157	1.833	0.850
1031	IPI00940755.2	density-regulated protein	2.503	1.962	0.784

1032	IPI00909010.1	cDNA FLJ59356, highly similar to N-acetylserotonin O-meth	2.876	2.446	0.851
1033	IPI00916807.1	MKI67 (FHA domain) interacting nucleolar phosphoprotein	2.286	2.563	1.121
1034	IPI00644418.3	endophilin-A2 isoform 3	2.160	1.980	0.917
1035	IPI00890793.1	iron-sulfur cluster scaffold homolog (E. coli)	2.828	1.839	0.650
1036	IPI00477468.1	RNA polymerase-associated protein CTR9 homolog	3.616	3.113	0.861
1037	IPI00984662.1	28S ribosomal protein S29, mitochondrial isoform 3	2.792	2.050	0.734
1038	IPI00015809.1	Probable tRNA threonylcarbamoyladenosine biosynthesis	2.388	2.535	1.062
1039	IPI00219411.3	Isoform 2 of RAC-gamma serine/threonine-protein kinase	2.772	1.837	0.663
1040	IPI00385642.1	WD repeat domain 57 (U5 snRNP specific), isoform CRA_b	2.357	2.232	0.947
1041	IPI00032851.1	Coatomer subunit zeta-1	1.899	1.618	0.852
1042	IPI00514469.1	N-acetylneuraminic acid synthase	2.521	2.133	0.846
1043	IPI00001539.8	3-ketoacyl-CoA thiolase, mitochondrial	2.258	1.561	0.691
1044	IPI00514444.1	Insulin-degrading enzyme	2.201	1.840	0.836
1045	IPI00017592.1	Isoform 1 of LETM1 and EF-hand domain-containing protei	2.241	1.815	0.810
1046	IPI00983309.1	STT3, subunit of the oligosaccharyltransferase complex, h	5.327	3.403	0.639
1047	IPI00145260.3	Putative transferase CAF17, mitochondrial	2.385	2.180	0.914
1048	IPI00374272.3	chromosome 5 open reading frame 51	2.387	2.624	1.100
1049	IPI00655644.4	inner membrane protein, mitochondrial	2.790	2.286	0.819
1050	IPI01011236.1	TUFT1	4.813	2.885	0.599
1051	IPI00643078.1	RAD23 homolog B	2.952	2.205	0.747
1052	IPI00025115.1	AP-3 complex subunit sigma-2	2.215	1.542	0.696
1053	IPI00220648.5	Phosphomevalonate kinase	4.776	5.338	1.118
1054	IPI00641843.3	cDNA, FLJ78963, highly similar to Ubiquitin carboxyl-termin	2.141	2.189	1.022
1055	IPI00830039.1	Isoform 2 of Splicing factor U2AF 65 kDa subunit	3.215	1.907	0.593
1056	IPI01012107.1	defender against cell death 1	2.112	1.590	0.753
1057	IPI00305668.7	28S ribosomal protein S6, mitochondrial	2.905	1.502	0.517
1058	IPI00643648.1	Phosphatidylserine decarboxylase	2.530	2.148	0.849
1059	IPI00028091.3	Actin-related protein 3	2.257	2.091	0.927
1060	IPI00427502.1	Isoform 2 of GH3 domain-containing protein	2.474	2.172	0.878
1061	IPI00029629.4	E3 ubiquitin/ISG15 ligase TRIM25	2.987	2.558	0.856
1062	IPI01010716.1	cDNA FLJ90324 fis, clone NT2RP2001817, highly similar to N	2.060	1.771	0.860
1063	IPI00396090.3	Isoform 3 of Diphosphoinositol polyphosphate phosphoh	2.252	1.608	0.714
1064	IPI00902580.1	cDNA FLJ11050 fis, clone PLACE1004564, highly similar to Cl	2.217	2.106	0.950
1065	IPI00022865.2	Cyclin-A2	2.254	2.302	1.021
1066	IPI00401804.3	Isoform 3 of Vesicle-associated membrane protein 7	2.024	1.739	0.859
1067	IPI00658162.2	cDNA FLJ36570 fis, clone TRACH2011302, highly similar to S	2.301	2.826	1.228
1068	IPI00974168.1	heat-responsive protein 12	3.834	2.102	0.548
1069	IPI00893645.1	septin 2	2.320	1.886	0.813
1070	IPI00005692.1	28S ribosomal protein S12, mitochondrial	4.084	1.917	0.469
1071	IPI00902652.1	cDNA FLJ37148 fis, clone BRACE2025333, highly similar to H	2.207	1.890	0.856
1072	IPI00977065.1	cold shock domain containing E1, RNA-binding	2.890	1.940	0.671
1073	IPI00398822.1	Isoform 2 of Zinc phosphodiesterase ELAC protein 2	1.850	2.177	1.177
1074	IPI00219090.1	Isoform 2 of Protein arginine N-methyltransferase 7	2.640	2.296	0.869
1075	IPI00219604.3	Isoform 1 of Dual specificity mitogen-activated protein kin	2.618	1.778	0.679
1076	IPI00411886.5	Nucleolar complex protein 2 homolog	2.064	1.977	0.958
1077	IPI00973882.1	ATPase, H+ transporting, lysosomal 50/57kDa, V1 subunit F	2.737	2.126	0.777
1078	IPI00025329.1	60S ribosomal protein L19	3.648	2.929	0.803

1079	IPI00041325.1	H/ACA ribonucleoprotein complex subunit 2	2.331	1.286	0.552
1080	IPI01013434.1	superoxide dismutase 2, mitochondrial	1.510	1.248	0.826
1081	IPI00176527.1	ATP synthase subunit epsilon-like protein, mitochondrial	2.254	1.263	0.560
1082	IPI00797314.1	COP9 constitutive photomorphogenic homolog subunit 3 (A	2.457	1.857	0.756
1083	IPI00943212.2	ATPase, H+ transporting, lysosomal 38kDa, V0 subunit d1	1.992	2.495	1.252
1084	IPI00556437.1	Dynamin 2 isoform 4 variant (Fragment)	3.066	2.248	0.733
1085	IPI00026219.4	Cleavage and polyadenylation specificity factor subunit 1	3.868	2.734	0.707
1086	IPI00219718.3	retinol-binding protein 1 isoform a	4.374	2.082	0.476
1087	IPI01012894.1	cell division cycle and apoptosis regulator 1	5.202	7.323	1.408
1088	IPI00847986.1	Isoform 2 of 40S ribosomal protein S24	2.579	2.005	0.777
1089	IPI00514217.6	Succinate-CoA ligase, ADP-forming, beta subunit	2.566	1.815	0.707
1090	IPI00926706.1	actin related protein 2/3 complex, subunit 1A, 41kDa	2.145	1.594	0.743
1091	IPI00549942.3	cDNA FLJ30306 fis, clone BRACE2003319	3.656	1.979	0.541
1092	IPI00979224.1	family with sequence similarity 203, member A	5.407	2.194	0.406
1093	IPI01009730.1	Putative uncharacterized protein DKFZp547A1913	3.538	3.570	1.009
1094	IPI00103263.3	Wings apart-like homolog	3.612	2.862	0.792
1095	IPI00742682.2	Nucleoprotein TPR	2.504	2.441	0.975
1096	IPI00003815.3	Rho GDP-dissociation inhibitor 1	2.717	2.175	0.800
1097	IPI01010344.1	PRP8 pre-mRNA processing factor 8 homolog (S. cerevisiae	5.064	2.906	0.574
1098	IPI00879774.1	Cysteine-rich with EGF-like domains 2	2.940	2.228	0.758
1099	IPI00005162.3	Actin-related protein 2/3 complex subunit 3	3.401	2.155	0.634
1100	IPI00984053.1	serine hydroxymethyltransferase 1 (soluble)	1.908	1.579	0.828
1101	IPI00658053.1	cathepsin D	3.031	1.859	0.613
1102	IPI00873515.2	Isoform 2 of Probable bifunctional methylenetetrahydrofo	2.020	2.302	1.139
1103	IPI00925248.1	Uncharacterized protein	2.724	2.571	0.944
1104	IPI00376117.1	Isoform 2 of Mitochondrial import receptor subunit TOM40	2.882	1.931	0.670
1105	IPI00916763.1	heat shock 10kDa protein 1 (chaperonin 10)	1.971	1.339	0.679
1106	IPI00423157.4	Isoform 11 of Serine/threonine-protein kinase Chk2	2.785	1.322	0.475
1107	IPI00216237.5	60S ribosomal protein L36	2.494	1.878	0.753
1108	IPI00784650.3	uncharacterized LOC100131551	5.900	3.021	0.512
1109	IPI00917636.1	acyl-CoA synthetase long-chain family member 3	2.455	2.460	1.002
1110	IPI00061282.2	Protein kinase, AMP-activated, alpha 1 catalytic subunit, is	3.425	2.043	0.596
1111	IPI00977736.1	calcyclin-binding protein isoform 2	2.736	2.001	0.732
1112	IPI00220919.1	Isoform 3 of DNA (cytosine-5)-methyltransferase 1	2.816	2.448	0.869
1113	IPI00014603.1	Ras-related protein Rab-9B	2.963	1.662	0.561
1114	IPI00418290.1	39S ribosomal protein L14, mitochondrial			1.284
1115	IPI00903276.1	cDNA FLJ36073 fis, clone TESTI2019697, highly similar to TH	2.725	1.973	0.724
1116	IPI00902466.1	cDNA FLJ11861 fis, clone HEMBA1006885, highly similar to P	2.473	1.926	0.779
1117	IPI00419898.1	uncharacterized LOC440157	2.161	1.533	0.709
1118	IPI00789985.1	Isoform 2 of Ran guanine nucleotide release factor	1.916	1.429	0.746
1119	IPI00975997.1	cancer/testis antigen family 45 member A5-like isoform 2,	2.885	2.298	0.796
1120	IPI00790648.2	transferrin	1.675	2.094	1.250
1121	IPI00978109.1	DIS3 mitotic control homolog (S. cerevisiae)	1.909	1.668	0.874
1122	IPI00017283.2	Isoleucyl-tRNA synthetase, mitochondrial	1.646	1.887	1.147
1123	IPI00939558.2	cDNA FLJ38696 fis, clone KIDNE2001931, highly similar to HI	2.542	1.978	0.778
1124	IPI00294742.7	Isoform 1 of La-related protein 7	2.653	2.077	0.783
1125	IPI00973715.2	dihydropyrimidinase	5.058	2.835	0.561

1126	IPI00909332.2	replication termination factor 2 domain containing 1	2.124	2.600	1.224
1127	IPI00301323.1	ATP-dependent RNA helicase DDX18	2.578	1.525	0.591
1128	IPI00788612.2	LIM and senescent cell antigen-like-containing domain pr	2.453	2.440	0.995
1129	IPI00247439.3	Isoform 2 of STE20-like serine/threonine-protein kinase	3.760	2.860	0.761
1130	IPI00219197.3	Isoform I of Ubiquitin-protein ligase E3A	2.008	2.234	1.112
1131	IPI00893703.1	ribosomal protein S7	2.254	2.147	0.953
1132	IPI00872684.2	cDNA FLJ54141, highly similar to Ezrin	2.026	1.668	0.823
1133	IPI00514858.1	Adenylyl cyclase-associated protein	2.345	2.532	1.080
1134	IPI00909477.1	cDNA FLJ54108, highly similar to Homo sapiens smooth mu	1.346	2.272	1.687
1135	IPI01009526.1	cDNA FLJ61034, highly similar to Mitochondrial dicarboxyla	2.514	1.811	0.720
1136	IPI00220716.2	Isoform 2 of Putative RNA-binding protein 15	2.848	2.472	0.868
1137	IPI00914006.2	cDNA FLJ56235, highly similar to Dynactin subunit 4	2.767	2.768	1.000
1138	IPI00219833.2	Mitochondrial import inner membrane translocase subun	2.900	2.237	0.771
1139	IPI00796237.1	DUSP3 protein	2.766	1.800	0.651
1140	IPI00443909.1	Isoform 1 of Protein canopy homolog 2	2.782	2.130	0.766
1141	IPI00910004.1	cDNA FLJ59139, highly similar to Vesicle-associated memb	3.625	2.229	0.615
1142	IPI01012992.1	Coiled-coil domain-containing protein 12	2.621	2.533	0.966
1143	IPI00020793.3	Isoform 2 of 60S ribosome subunit biogenesis protein NIP	1.861	1.630	0.876
1144	IPI00922847.1	cDNA FLJ50115, moderately similar to Membrane-associate	1.854	1.264	0.682
1145	IPI00479722.2	Proteasome activator complex subunit 1	3.502	2.108	0.602

Table S6. A list of selected known substrates of EuHMT1 and EuHMT2 identified in the current study. These substrates are pulled down either only in mutant-transfected cell lysates (for non-quantitative MS) or enriched with at least >1.5 fold in mutant-transfected cell lysates than control (for TMT-based MS).

Substrates	EuHMT1/2 Mutant-transfected	Control vector-transfected
Histone H1.4	YES	NO
Histone H3	YES	NO
EuHMT1/2 (automethylation)	YES	NO
Widely Interspaced Zinc Finger Motifs Protein (WIZ)	YES	NO
Chromodomain Y-Like Protein (CDYL)	YES	NO
DNA (cytosine-5)-methyltransferase 1	YES	NO
Cellular tumor antigen p53	TMT ratio > 1.8 in both samples than in control	--
highly similar to Histone deacetylase 1	TMT ratio > 1.8 in both samples than in control	--

Table S7. Analysis of EuHMT1 and EuHMT2 substrates by IPA (Ingenuity® Systems, www.ingenuity.com). The IPI (International Protein Index) accession numbers (common proteins present in Table S2-S5) were uploaded to search the cellular localization using Ingenuity database.

Serial	Accession	Location	Serial	Accession	Location	Serial	Accession	Location
1	IPI00027442.4	Cytoplasm	47	IPI00449201.2	Cytoplasm	93	IPI00553185.2	Cytoplasm
2	IPI00250297.3	Cytoplasm	48	IPI00925601.1	Cytoplasm	94	IPI01014604.1	Cytoplasm
3	IPI00981292.1	Cytoplasm	49	IPI00977640.1	Plasma Membrane	95	IPI00010720.1	Cytoplasm
4	IPI00303207.3	Cytoplasm	50	IPI00177817.4	Cytoplasm	96	IPI00552590.1	Cytoplasm
5	IPI00792186.4	Cytoplasm	51	IPI00471928.6	Cytoplasm	97	IPI00952607.1	Cytoplasm
6	IPI01010004.1	Cytoplasm	52	IPI00456747.1	Cytoplasm	98	IPI00784090.2	Cytoplasm
7	IPI00001539.8	Cytoplasm	53	IPI00963825.1	Cytoplasm	99	IPI00013122.1	Cytoplasm
8	IPI01014863.1	Cytoplasm	54	IPI00007611.1	Cytoplasm	100	IPI00016786.1	Cytoplasm
9	IPI00021290.5	Cytoplasm	55	IPI00025285.3	Cytoplasm	101	IPI00023530.7	Nucleus
10	IPI00909879.1	Cytoplasm	56	IPI00973882.1	Cytoplasm	102	IPI00942408.1	Nucleus
11	IPI01011431.1	Cytoplasm	57	IPI00917463.1	Cytoplasm	103	IPI00012011.6	Nucleus
12	IPI00410615.2	Cytoplasm	58	IPI00000643.1	Cytoplasm	104	IPI00015833.1	Cytoplasm
13	IPI00917636.1	Cytoplasm	59	IPI00218200.8	Cytoplasm	105	IPI00748354.1	Cytoplasm
14	IPI00021439.1	Cytoplasm	60	IPI00025178.3	Nucleus	106	IPI01012026.1	Nucleus
15	IPI01009456.1	Cytoplasm	61	IPI00472003.1	Cytoplasm	107	IPI00977749.1	unknown
16	IPI01015738.1	Cytoplasm	62	IPI00794082.2	Cytoplasm	108	IPI00022977.1	Cytoplasm
17	IPI00760588.2	Nucleus	63	IPI00032900.1	Cytoplasm	109	IPI00010896.3	Nucleus
18	IPI00983658.1	Nucleus	64	IPI01015329.1	Nucleus	110	IPI00980429.1	Plasma Membrane
19	IPI00945912.1	Cytoplasm	65	IPI00797616.2	Cytoplasm	111	IPI00514049.1	Nucleus
20	IPI00219065.2	Cytoplasm	66	IPI00916549.1	Nucleus	112	IPI00430813.3	Nucleus
21	IPI00012007.6	Cytoplasm	67	IPI01010654.1	Nucleus	113	IPI01014726.1	Cytoplasm
22	IPI00965185.1	Extracellular Space	68	IPI00013180.2	Nucleus	114	IPI00443909.1	Plasma Membrane
23	IPI00011916.1	Plasma Membrane	69	IPI00180128.4	Cytoplasm	115	IPI00184821.1	Cytoplasm
24	IPI00218988.4	Cytoplasm	70	IPI00006980.1	Nucleus	116	IPI00940293.5	Extracellular Space
25	IPI00940222.2	Cytoplasm	71	IPI00001655.1	Nucleus	117	IPI00783982.1	Cytoplasm
26	IPI00413641.7	Cytoplasm	72	IPI00031526.3	Nucleus	118	IPI00797314.1	Cytoplasm
27	IPI01012747.1	Cytoplasm	73	IPI00550689.3	Cytoplasm	119	IPI00966482.1	Cytoplasm
28	IPI00910420.1	Cytoplasm	74	IPI00374272.3	unknown	120	IPI00925574.1	Nucleus
29	IPI01010794.1	Nucleus	75	IPI00892533.1	unknown	121	IPI00032851.1	Cytoplasm
30	IPI00759824.2	Nucleus	76	IPI00430781.1	Cytoplasm	122	IPI00943173.1	Cytoplasm
31	IPI00964635.1	Plasma Membrane	77	IPI00170972.2	unknown	123	IPI00017704.3	Cytoplasm
32	IPI01011531.2	Plasma Membrane	78	IPI00218414.5	Cytoplasm	124	IPI00025086.4	Cytoplasm
33	IPI00215911.3	Nucleus	79	IPI00893035.1	Cytoplasm	125	IPI00021785.2	Cytoplasm
34	IPI00848298.1	Extracellular Space	80	IPI00020599.1	Cytoplasm	126	IPI00797738.1	Cytoplasm
35	IPI00642457.1	Cytoplasm	81	IPI00604431.1	Cytoplasm	127	IPI00967916.1	Cytoplasm
36	IPI00215914.5	Cytoplasm	82	IPI00941747.1	Cytoplasm	128	IPI00093057.6	Cytoplasm
37	IPI00792330.2	Cytoplasm	83	IPI00514858.1	Plasma Membrane	129	IPI00026219.4	Nucleus
38	IPI00853337.1	Cytoplasm	84	IPI00641266.4	Cytoplasm	130	IPI00902580.1	Nucleus
39	IPI00003815.3	Cytoplasm	85	IPI00025084.3	Cytoplasm	131	IPI00004839.1	Cytoplasm
40	IPI00003326.4	Cytoplasm	86	IPI00304409.3	Cytoplasm	132	IPI00383539.5	Cytoplasm
41	IPI00003327.1	Cytoplasm	87	IPI00939491.1	Cytoplasm	133	IPI00977065.1	Cytoplasm
42	IPI00926706.1	Cytoplasm	88	IPI01012205.1	Cytoplasm	134	IPI00219994.2	Nucleus
43	IPI00005162.3	Cytoplasm	89	IPI01014449.1	Nucleus	135	IPI00020602.1	Cytoplasm
44	IPI00550234.4	Cytoplasm	90	IPI00297579.4	Nucleus	136	IPI00002824.7	Nucleus
45	IPI00909010.1	Cytoplasm	91	IPI00878039.2	unknown	137	IPI00021828.1	Cytoplasm
46	IPI00925572.1	Cytoplasm	92	IPI00297779.7	Cytoplasm	138	IPI00554626.3	Nucleus

Serial	Accession	Location	Serial	Accession	Location	Serial	Accession	Location
139	IPI00908512.2	Cytoplasm	185	IPI01013095.1	Cytoplasm	231	IPI00218112.1	Cytoplasm
140	IPI00290142.5	Nucleus	186	IPI00025491.1	Cytoplasm	232	IPI00001159.11	Cytoplasm
141	IPI00978325.1	Cytoplasm	187	IPI00926917.1	Cytoplasm	233	IPI00910113.1	Cytoplasm
142	IPI00966243.1	Cytoplasm	188	IPI00014263.1	Cytoplasm	234	IPI00640006.1	Cytoplasm
143	IPI00879792.1	Cytoplasm	189	IPI00022648.2	Cytoplasm	235	IPI00291783.4	Nucleus
144	IPI00917605.1	Cytoplasm	190	IPI00411704.9	Cytoplasm	236	IPI00894139.1	Cytoplasm
145	IPI01012107.1	Cytoplasm	191	IPI00398822.1	Nucleus	237	IPI00917449.1	Cytoplasm
146	IPI00984662.1	Cytoplasm	192	IPI00940851.1	Cytoplasm	238	IPI00023728.1	Cytoplasm
147	IPI00006754.1	Cytoplasm	193	IPI00013452.11	Cytoplasm	239	IPI00219025.3	Cytoplasm
148	IPI00917166.1	Cytoplasm	194	IPI00029631.1	Nucleus	240	IPI01015801.1	Cytoplasm
149	IPI00914006.2	Nucleus	195	IPI00644349.4	Plasma Membrane	241	IPI00028414.3	Cytoplasm
150	IPI00952778.2	Nucleus	196	IPI00936931.2	Plasma Membrane	242	IPI00026268.3	Plasma Membrane
151	IPI00155054.3	Nucleus	197	IPI00386755.2	Cytoplasm	243	IPI00964515.1	Cytoplasm
152	IPI00798375.2	Nucleus	198	IPI00024911.1	Cytoplasm	244	IPI00003886.3	Nucleus
153	IPI01011782.1	Nucleus	199	IPI00645836.1	Cytoplasm	245	IPI00061525.3	Cytoplasm
154	IPI00030320.4	Nucleus	200	IPI00902463.1	unknown	246	IPI00018206.4	Cytoplasm
155	IPI00967473.1	Nucleus	201	IPI00895865.1	Cytoplasm	247	IPI00926599.1	Cytoplasm
156	IPI00940755.2	unknown	202	IPI00878484.1	Nucleus	248	IPI00908881.2	Extracellular Space
157	IPI00010882.3	Nucleus	203	IPI00009464.1	Nucleus	249	IPI00927606.1	Cytoplasm
158	IPI00927809.1	Nucleus	204	IPI00073602.1	Nucleus	250	IPI00037448.3	Cytoplasm
159	IPI00978109.1	Nucleus	205	IPI00872684.2	Plasma Membrane	251	IPI00029557.3	Cytoplasm
160	IPI00008454.1	Cytoplasm	206	IPI00788781.1	Cytoplasm	252	IPI00847896.1	Nucleus
161	IPI00794610.2	Cytoplasm	207	IPI00101734.5	Cytoplasm	253	IPI00218829.9	Cytoplasm
162	IPI00235412.7	Cytoplasm	208	IPI00039626.3	Cytoplasm	254	IPI00953696.1	Cytoplasm
163	IPI00220919.1	Nucleus	209	IPI00303722.5	Cytoplasm	255	IPI00845493.1	Cytoplasm
164	IPI00004454.3	Cytoplasm	210	IPI00334282.2	Extracellular Space	256	IPI00019755.3	Cytoplasm
165	IPI00894420.1	Cytoplasm	211	IPI00909657.1	Cytoplasm	257	IPI00219757.13	Cytoplasm
166	IPI00031836.3	Cytoplasm	212	IPI00300074.4	Cytoplasm	258	IPI00793076.1	Nucleus
167	IPI00964348.1	unknown	213	IPI00026781.3	Cytoplasm	259	IPI00294398.2	Cytoplasm
168	IPI00794545.1	Nucleus	214	IPI00019326.1	Cytoplasm	260	IPI00910697.1	Cytoplasm
169	IPI00456969.1	Cytoplasm	215	IPI00759715.1	Cytoplasm	261	IPI01009997.1	Nucleus
170	IPI00019329.1	Cytoplasm	216	IPI00644668.3	Cytoplasm	262	IPI00100984.4	unknown
171	IPI00062037.1	Cytoplasm	217	IPI00184854.1	Cytoplasm	263	IPI00916207.1	Cytoplasm
172	IPI00398758.1	Cytoplasm	218	IPI00219005.3	Nucleus	264	IPI00966135.1	Nucleus
173	IPI00396485.3	Cytoplasm	219	IPI00553169.5	Cytoplasm	265	IPI00000335.1	Cytoplasm
174	IPI00014424.1	Cytoplasm	220	IPI00382699.2	Cytoplasm	266	IPI00170924.2	unknown
175	IPI00178440.3	Cytoplasm	221	IPI00908741.1	Cytoplasm	267	IPI00003935.6	Nucleus
176	IPI01015965.1	Cytoplasm	222	IPI00747810.3	Cytoplasm	268	IPI00220667.3	Cytoplasm
177	IPI00003588.1	Cytoplasm	223	IPI00554521.2	Cytoplasm	269	IPI00644653.1	Nucleus
178	IPI00917777.1	Nucleus	224	IPI00845477.1	Nucleus	270	IPI00643317.3	Nucleus
179	IPI00942420.2	Nucleus	225	IPI00983652.2	Nucleus	271	IPI00026824.2	Cytoplasm
180	IPI00220795.4	Nucleus	226	IPI00854677.1	Nucleus	272	IPI00465365.4	Nucleus
181	IPI00219678.3	Cytoplasm	227	IPI00011454.1	Cytoplasm	273	IPI00414696.1	Nucleus
182	IPI00903191.1	Cytoplasm	228	IPI00219018.7	Cytoplasm	274	IPI00927677.1	Nucleus
183	IPI00977658.1	Cytoplasm	229	IPI00783097.4	Cytoplasm	275	IPI00964686.1	Nucleus
184	IPI00012795.3	Cytoplasm	230	IPI00025273.1	Cytoplasm	276	IPI00759596.1	Nucleus

Serial	Accession	Location	Serial	Accession	Location	Serial	Accession	Location
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278	IPI00013881.6	Nucleus	324	IPI00219217.3	Cytoplasm	370	IPI00032881.2	Cytoplasm
279	IPI00216492.1	Nucleus	325	IPI00384155.1	Cytoplasm	371	IPI00926139.1	Cytoplasm
280	IPI00807545.1	Nucleus	326	IPI01010750.1	Nucleus	372	IPI00967112.1	Cytoplasm
281	IPI00383296.5	Nucleus	327	IPI00788612.2	Plasma Membrane	373	IPI00795057.1	Cytoplasm
282	IPI00856038.2	Nucleus	328	IPI00642982.1	Cytoplasm	374	IPI01018329.1	Nucleus
283	IPI00644079.4	Nucleus	329	IPI00396321.1	Cytoplasm	375	IPI00893025.1	Nucleus
284	IPI00045498.4	Nucleus	330	IPI00001146.1	Nucleus	376	IPI00171798.1	Nucleus
285	IPI00218493.7	Cytoplasm	331	IPI00219077.4	Cytoplasm	377	IPI00983602.1	Cytoplasm
286	IPI00336094.5	Cytoplasm	332	IPI00893219.2	Nucleus	378	IPI00873515.2	unknown
287	IPI00414384.1	Cytoplasm	333	IPI00983098.1	Cytoplasm	379	IPI00924816.1	Nucleus
288	IPI00027230.3	Cytoplasm	334	IPI00646978.4	Cytoplasm	380	IPI00005024.3	Nucleus
289	IPI00002966.2	Cytoplasm	335	IPI00012369.1	Nucleus	381	IPI00397526.3	Cytoplasm
290	IPI00964409.3	Cytoplasm	336	IPI00219306.1	Nucleus	382	IPI00019502.3	Cytoplasm
291	IPI00966238.2	Cytoplasm	337	IPI00219604.3	Cytoplasm	383	IPI00440719.2	Nucleus
292	IPI00784154.1	Cytoplasm	338	IPI00888475.2	Cytoplasm	384	IPI00470922.2	Cytoplasm
293	IPI00916763.1	Cytoplasm	339	IPI00641181.5	Cytoplasm	385	IPI00654793.2	Cytoplasm
294	IPI00218993.1	Cytoplasm	340	IPI00008240.2	Cytoplasm	386	IPI00604652.1	Cytoplasm
295	IPI00982482.2	Cytoplasm	341	IPI00911041.1	Cytoplasm	387	IPI00922322.1	Nucleus
296	IPI00017283.2	Cytoplasm	342	IPI00010157.1	Cytoplasm	388	IPI00306960.3	Cytoplasm
297	IPI00145260.3	Cytoplasm	343	IPI00967721.1	Nucleus	389	IPI00925237.1	Nucleus
298	IPI00514444.1	Extracellular Space	344	IPI01013402.1	Nucleus	390	IPI00604620.3	Nucleus
299	IPI01015385.1	Cytoplasm	345	IPI00013214.2	Nucleus	391	IPI00513841.1	Plasma Membrane
300	IPI00921820.1	Cytoplasm	346	IPI00974419.1	Nucleus	392	IPI00011770.1	Cytoplasm
301	IPI00304417.7	Cytoplasm	347	IPI00877948.1	Nucleus	393	IPI00946474.1	Cytoplasm
302	IPI00008557.6	Cytoplasm	348	IPI00552546.1	Nucleus	394	IPI00023064.1	Cytoplasm
303	IPI00289819.5	Plasma Membrane	349	IPI00915869.3	Cytoplasm	395	IPI01014044.1	Cytoplasm
304	IPI00005198.2	Nucleus	350	IPI00291006.2	Cytoplasm	396	IPI00220059.5	Cytoplasm
305	IPI00219330.2	Nucleus	351	IPI00399089.4	Extracellular Space	397	IPI00925853.1	Cytoplasm
306	IPI00156374.6	Nucleus	352	IPI00022239.7	Cytoplasm	398	IPI00301609.8	Nucleus
307	IPI00793443.2	Nucleus	353	IPI00409639.1	unknown	399	IPI00301051.3	unknown
308	IPI00007402.3	Nucleus	354	IPI00783001.1	unknown	400	IPI00041325.1	Nucleus
309	IPI00185146.5	Nucleus	355	IPI00293276.10	Extracellular Space	401	IPI00026167.5	Nucleus
310	IPI00009342.1	Cytoplasm	356	IPI00916807.1	Nucleus	402	IPI00020793.3	Nucleus
311	IPI00217563.4	Plasma Membrane	357	IPI00184525.2	Cytoplasm	403	IPI00005675.3	Nucleus
312	IPI00060715.1	Plasma Membrane	358	IPI00418290.1	Cytoplasm	404	IPI01015780.1	Nucleus
313	IPI00385834.3	Nucleus	359	IPI00556611.1	Cytoplasm	405	IPI00012315.2	Cytoplasm
314	IPI00909299.1	Cytoplasm	360	IPI00162330.3	Cytoplasm	406	IPI00411886.5	Nucleus
315	IPI00002214.1	Nucleus	361	IPI00794240.1	Cytoplasm	407	IPI00922367.1	Nucleus
316	IPI00946316.1	Nucleus	362	IPI00061531.4	Cytoplasm	408	IPI00032849.2	Nucleus
317	IPI00001639.2	Nucleus	363	IPI00219351.3	Cytoplasm	409	IPI00411937.4	Nucleus
318	IPI00029239.2	Cytoplasm	364	IPI00005692.1	Cytoplasm	410	IPI01015230.1	Cytoplasm
319	IPI00789806.2	Cytoplasm	365	IPI00005050.1	Cytoplasm	411	IPI00220740.1	Nucleus
320	IPI00985284.1	Cytoplasm	366	IPI00550037.3	Cytoplasm	412	IPI00022640.1	Cytoplasm
321	IPI01014783.1	Cytoplasm	367	IPI00032872.3	Cytoplasm	413	IPI00019407.1	Cytoplasm
322	IPI00296370.2	unknown	368	IPI00018691.1	Cytoplasm	414	IPI01012417.1	Nucleus

Serial	Accession	Location	Serial	Accession	Location	Serial	Accession	Location
415	IPI00549389.3	Nucleus	461	IPI00927892.1	Cytoplasm	507	IPI01015427.1	Nucleus
416	IPI00973891.1	unknown	462	IPI00220648.5	Cytoplasm	508	IPI00021435.3	Nucleus
417	IPI00646917.1	Nucleus	463	IPI00915874.1	Nucleus	509	IPI00979951.1	Nucleus
418	IPI00396090.3	Cytoplasm	464	IPI00017672.4	Nucleus	510	IPI00216770.1	Nucleus
419	IPI00448974.2	Nucleus	465	IPI00894110.1	Cytoplasm	511	IPI00555749.1	Nucleus
420	IPI00291755.6	Nucleus	466	IPI01015636.1	Nucleus	512	IPI00456695.1	Cytoplasm
421	IPI00644506.1	Nucleus	467	IPI00556021.3	Nucleus	513	IPI00552190.1	Cytoplasm
422	IPI00290416.3	Cytoplasm	468	IPI00008436.4	Nucleus	514	IPI00105598.3	Cytoplasm
423	IPI00015809.1	unknown	469	IPI00873948.3	Nucleus	515	IPI00335069.2	Cytoplasm
424	IPI01012383.1	Cytoplasm	470	IPI00006113.1	Nucleus	516	IPI00024821.1	Cytoplasm
425	IPI00916535.1	Cytoplasm	471	IPI00015018.1	Cytoplasm	517	IPI01015295.1	Cytoplasm
426	IPI00010796.1	Cytoplasm	472	IPI00419585.9	Cytoplasm	518	IPI00019927.2	Cytoplasm
427	IPI01009790.1	unknown	473	IPI00646304.4	Cytoplasm	519	IPI00937278.2	Cytoplasm
428	IPI00642944.1	Cytoplasm	474	IPI00003927.5	Cytoplasm	520	IPI00479722.2	Cytoplasm
429	IPI00026546.1	Cytoplasm	475	IPI00026519.1	Cytoplasm	521	IPI00943181.1	Cytoplasm
430	IPI00815732.1	Cytoplasm	476	IPI00643915.1	Nucleus	522	IPI00031106.1	unknown
431	IPI00449049.5	Nucleus	477	IPI00007019.1	Plasma Membrane	523	IPI01009339.1	Nucleus
432	IPI00218568.7	Nucleus	478	IPI01015454.1	Nucleus	524	IPI00179964.5	Nucleus
433	IPI00900327.2	Nucleus	479	IPI00980919.1	Cytoplasm	525	IPI00783302.1	Cytoplasm
434	IPI00922359.1	Cytoplasm	480	IPI00429689.3	Cytoplasm	526	IPI00303568.3	Cytoplasm
435	IPI00647084.2	Nucleus	481	IPI00908543.1	Cytoplasm	527	IPI00908647.1	Cytoplasm
436	IPI00924740.1	Cytoplasm	482	IPI00332511.5	Cytoplasm	528	IPI00032903.3	Cytoplasm
437	IPI00549885.4	Cytoplasm	483	IPI01012187.1	Nucleus	529	IPI00376503.2	Cytoplasm
438	IPI00893541.1	Cytoplasm	484	IPI00000874.1	Cytoplasm	530	IPI00016513.5	Cytoplasm
439	IPI01013559.1	Cytoplasm	485	IPI00909207.1	Cytoplasm	531	IPI00646415.1	Cytoplasm
440	IPI00010414.4	Cytoplasm	486	IPI00374151.1	Cytoplasm	532	IPI00005719.1	Cytoplasm
441	IPI00791490.1	Cytoplasm	487	IPI00759663.1	Cytoplasm	533	IPI00008964.3	Cytoplasm
442	IPI00219446.5	Cytoplasm	488	IPI00220301.5	Cytoplasm	534	IPI00016339.4	Cytoplasm
443	IPI00178047.7	Nucleus	489	IPI00061282.2	Cytoplasm	535	IPI00945574.1	Cytoplasm
444	IPI00909399.2	Cytoplasm	490	IPI01014354.1	Cytoplasm	536	IPI00014603.1	Plasma Membrane
445	IPI00006052.3	Cytoplasm	491	IPI00219090.1	Cytoplasm	537	IPI00010270.1	Cytoplasm
446	IPI00332371.9	Cytoplasm	492	IPI00902466.1	Cytoplasm	538	IPI00643078.1	Nucleus
447	IPI00743142.2	Cytoplasm	493	IPI01014174.1	Nucleus	539	IPI00642213.1	Nucleus
448	IPI00639981.1	Cytoplasm	494	IPI01010344.1	Nucleus	540	IPI00879160.1	Nucleus
449	IPI00216691.5	Cytoplasm	495	IPI00003168.1	unknown	541	IPI00221325.3	Nucleus
450	IPI00795892.1	unknown	496	IPI01009918.1	Extracellular Space	542	IPI00908754.1	Cytoplasm
451	IPI01012504.1	Cytoplasm	497	IPI00984586.1	Extracellular Space	543	IPI00980330.1	Plasma Membrane
452	IPI01011912.1	Cytoplasm	498	IPI00556640.1	Extracellular Space	544	IPI00645329.1	Nucleus
453	IPI00922847.1	Plasma Membrane	499	IPI00001734.3	Cytoplasm	545	IPI00220716.2	Nucleus
454	IPI00017334.1	Nucleus	500	IPI00299155.5	Cytoplasm	546	IPI00001757.1	Nucleus
455	IPI00922583.1	Cytoplasm	501	IPI00291922.2	Cytoplasm	547	IPI00939558.2	Nucleus
456	IPI00334907.3	Cytoplasm	502	IPI00218372.1	Cytoplasm	548	IPI00925570.1	Cytoplasm
457	IPI00479186.7	Cytoplasm	503	IPI00028004.2	Cytoplasm	549	IPI00465044.2	Nucleus
458	IPI00016736.1	Cytoplasm	504	IPI00479306.1	Cytoplasm	550	IPI00927827.1	Nucleus
459	IPI01011191.1	Cytoplasm	505	IPI00000811.2	Cytoplasm	551	IPI01018037.1	Nucleus
460	IPI01015748.1	Cytoplasm	506	IPI00003217.3	Cytoplasm	552	IPI00982162.1	Plasma Membrane

Serial	Accession	Location	Serial	Accession	Location	Serial	Accession	Location
553	IPI00908327.1	Extracellular Space	599	IPI00514399.1	Cytoplasm	645	IPI00878876.1	Nucleus
554	IPI00335589.5	Cytoplasm	600	IPI00746004.2	Nucleus	646	IPI00029266.1	Nucleus
555	IPI00020127.1	Nucleus	601	IPI00182289.6	Cytoplasm	647	IPI00216508.3	Cytoplasm
556	IPI00396329.1	Nucleus	602	IPI00011253.3	Cytoplasm	648	IPI01013434.1	Cytoplasm
557	IPI00554723.5	Cytoplasm	603	IPI00419880.6	Cytoplasm	649	IPI00216057.6	Cytoplasm
558	IPI00412579.6	Nucleus	604	IPI00217030.10	Cytoplasm	650	IPI00300299.6	Cytoplasm
559	IPI00746438.2	Cytoplasm	605	IPI00008433.4	Cytoplasm	651	IPI00946099.1	Cytoplasm
560	IPI00465361.4	Cytoplasm	606	IPI00021840.1	Cytoplasm	652	IPI00292020.3	Cytoplasm
561	IPI00304612.9	Cytoplasm	607	IPI01011967.1	Cytoplasm	653	IPI00980207.1	Cytoplasm
562	IPI00925058.1	Cytoplasm	608	IPI00893703.1	Cytoplasm	654	IPI00843996.1	Nucleus
563	IPI00413324.6	Cytoplasm	609	IPI00645201.1	Cytoplasm	655	IPI00646864.1	Cytoplasm
564	IPI00215719.6	Cytoplasm	610	IPI00221088.5	Cytoplasm	656	IPI00976464.1	unknown
565	IPI00026202.1	Cytoplasm	611	IPI00979136.1	Nucleus	657	IPI00013894.1	Cytoplasm
566	IPI00025329.1	Cytoplasm	612	IPI00940901.1	Nucleus	658	IPI00983309.1	Plasma Membrane
567	IPI00219153.4	Nucleus	613	IPI00011726.1	Nucleus	659	IPI00645380.1	Cytoplasm
568	IPI00010153.5	Cytoplasm	614	IPI00909332.2	unknown	660	IPI00297626.4	Plasma Membrane
569	IPI00021266.1	Cytoplasm	615	IPI00021187.4	Nucleus	661	IPI00514217.6	Cytoplasm
570	IPI00946221.1	Cytoplasm	616	IPI00009104.7	Nucleus	662	IPI00026970.4	Nucleus
571	IPI00977964.1	Nucleus	617	IPI01018318.1	Nucleus	663	IPI01010195.1	Nucleus
572	IPI00182533.5	Cytoplasm	618	IPI00220637.5	Cytoplasm	664	IPI00023344.2	Cytoplasm
573	IPI00651660.1	Cytoplasm	619	IPI00014458.1	Cytoplasm	665	IPI00402182.2	Nucleus
574	IPI00927458.1	Cytoplasm	620	IPI00479934.1	Cytoplasm	666	IPI00550363.3	Cytoplasm
575	IPI00926495.1	Cytoplasm	621	IPI00964725.1	Cytoplasm	667	IPI00744692.1	Cytoplasm
576	IPI00216237.5	Cytoplasm	622	IPI00294911.1	Cytoplasm	668	IPI00639819.1	Nucleus
577	IPI00896410.1	Cytoplasm	623	IPI00908375.1	Cytoplasm	669	IPI00329633.5	Nucleus
578	IPI00924813.1	Cytoplasm	624	IPI01015489.1	Cytoplasm	670	IPI00926756.1	Cytoplasm
579	IPI00215790.6	Cytoplasm	625	IPI00218922.5	Cytoplasm	671	IPI00981739.1	Cytoplasm
580	IPI00003918.6	Cytoplasm	626	IPI00030877.2	Cytoplasm	672	IPI00798211.1	Cytoplasm
581	IPI00640037.2	Cytoplasm	627	IPI00658162.2	unknown	673	IPI00982721.1	Nucleus
582	IPI00867533.1	Cytoplasm	628	IPI00784936.1	Cytoplasm	674	IPI00790648.2	Extracellular Space
583	IPI00299573.12	Cytoplasm	629	IPI00470498.1	Nucleus	675	IPI00001589.1	Cytoplasm
584	IPI00012772.8	Cytoplasm	630	IPI00026089.4	Nucleus	676	IPI00219833.2	Cytoplasm
585	IPI00968128.1	Cytoplasm	631	IPI00032827.1	Nucleus	677	IPI00306516.1	Cytoplasm
586	IPI00008530.1	Cytoplasm	632	IPI00976190.1	Nucleus	678	IPI00641815.1	unknown
587	IPI00008527.3	Cytoplasm	633	IPI00300371.5	Nucleus	679	IPI00940673.1	Cytoplasm
588	IPI00025874.2	Cytoplasm	634	IPI00514669.1	Nucleus	680	IPI01014975.1	Plasma Membrane
589	IPI00641692.3	Nucleus	635	IPI00984053.1	Cytoplasm	681	IPI00028055.4	Cytoplasm
590	IPI00008438.1	Cytoplasm	636	IPI00789370.3	Cytoplasm	682	IPI00023542.6	Cytoplasm
591	IPI00025091.3	Cytoplasm	637	IPI00973884.1	Nucleus	683	IPI00967533.1	Cytoplasm
592	IPI00013917.3	Cytoplasm	638	IPI01009526.1	Cytoplasm	684	IPI00005087.1	Cytoplasm
593	IPI00221091.9	Cytoplasm	639	IPI00007188.6	Cytoplasm	685	IPI00395887.4	Cytoplasm
594	IPI00013485.3	Cytoplasm	640	IPI00291467.7	Cytoplasm	686	IPI00016676.1	Cytoplasm
595	IPI00218606.7	Cytoplasm	641	IPI00902652.1	Plasma Membrane	687	IPI00376117.1	Cytoplasm
596	IPI00847986.1	Cytoplasm	642	IPI00328298.6	Nucleus	688	IPI01009016.1	Nucleus
597	IPI00012750.3	Cytoplasm	643	IPI00910438.1	Nucleus	689	IPI00642042.3	Cytoplasm
598	IPI00655650.2	Cytoplasm	644	IPI00385642.1	Nucleus	690	IPI00742682.2	Nucleus

Serial	Accession	Location	Serial	Accession	Location	Serial	Accession	Location
691	IPI00979071.1	Cytoplasm	709	IPI00645078.1	Cytoplasm	727	IPI01013843.1	Cytoplasm
692	IPI00646055.2	Cytoplasm	710	IPI00375533.5	Cytoplasm	728	IPI00291175.7	Plasma Membrane
693	IPI00643876.2	Nucleus	711	IPI00023647.4	Cytoplasm	729	IPI00022774.3	Cytoplasm
694	IPI00029629.4	Cytoplasm	712	IPI01015565.1	Cytoplasm	730	IPI00910830.1	Cytoplasm
695	IPI00438230.3	Nucleus	713	IPI00032957.1	Nucleus	731	IPI00024145.2	Cytoplasm
696	IPI00965548.1	Cytoplasm	714	IPI00909975.1	Cytoplasm	732	IPI00031804.1	Cytoplasm
697	IPI00946039.1	Cytoplasm	715	IPI00022597.1	Cytoplasm	733	IPI00418471.6	Cytoplasm
698	IPI01014610.1	unknown	716	IPI00003949.1	Cytoplasm	734	IPI00298961.3	Nucleus
699	IPI00472176.1	unknown	717	IPI00783378.3	unknown	735	IPI00964692.1	Nucleus
700	IPI00885131.1	unknown	718	IPI01012867.1	Cytoplasm	736	IPI00220834.8	Nucleus
701	IPI00292894.5	Nucleus	719	IPI00514902.1	Nucleus	737	IPI00644712.4	Nucleus
702	IPI00000606.5	unknown	720	IPI00966258.1	Cytoplasm	738	IPI00788157.1	Nucleus
703	IPI00218343.4	Cytoplasm	721	IPI00641843.3	Cytoplasm	739	IPI00909691.1	Cytoplasm
704	IPI00645452.1	Cytoplasm	722	IPI00294495.5	unknown	740	IPI00000816.1	Cytoplasm
705	IPI00031370.3	Cytoplasm	723	IPI00941385.2	Cytoplasm	741	IPI00018146.1	Cytoplasm
706	IPI00027107.5	Cytoplasm	724	IPI00375145.1	Cytoplasm	742	IPI00021263.3	Cytoplasm
707	IPI00216298.6	Cytoplasm	725	IPI01011924.1	Nucleus	743	IPI01010979.1	Nucleus
708	IPI00026328.3	Cytoplasm	726	IPI00910004.1	Plasma Membrane	744	IPI00062866.4	unknown
						745	IPI00477853.2	Nucleus

Table S8. Analysis of EuHMT1 and EuHMT2 substrates by IPA (Ingenuity® Systems, www.ingenuity.com). The IPI (International Protein Index) accession numbers (common proteins present in Table S2-S5) were uploaded to search functions in Ingenuity database. Only statistically significant proteins (see *p*-values in the table below) were further considered for functional analysis.

1. Cellular and Molecular Functions of EuHMT1 and EuHMT2 targets:

Function name	p-value	# of proteins
Protein synthesis	4.24E-25 – 7.97E-03	135
RNA Post-Transcriptional Modification	1.49E-16 – 9.76E-03	54
Gene Expression	5.48E-15 – 5.35E-03	155
Cell Death and Survival	9.33E-15 – 9.76E-03	276
Post-Translational Modification	3.35E-13 – 8.37E-03	64

2. Physiological Functions of EuHMT1 and EuHMT2 targets:

Function name	p-value	# of proteins
Embryonic Development	1.33E-06 – 9.76E-03	42
Organismal Development	1.33E-06 – 6.10E-03	149
Tissue Development	1.91E-05 – 9.76E-03	24
Connective Tissue Development	3.87E-05 – 9.76E-03	81
Endocrine System Development	3.13E-04 – 3.13E-04	4

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