

Appendix 8: Minimotif Analysis

Motifs Found in the Protein Sequence from those found in the Proteomes of the Species HOMO SAPIENS, HUMAN, MAN

Subcellular Localization chosen for search : ALL

Motif #: 1

Known Motif: K/R-STQT

Expected Count in Protein: 0.0010

Observed Count in Protein: 1

Motif Score in Protein: 912.503

Expected Count in Proteome: 21.284965146697427

Observed Count in Proteome: 14

Enrichment Factor in Proteome: 0.6577412696478969

Annotation: Light chain 8 of dynein binding motif

Occurring Positions: 746

Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14760703

Motif #: 2

Known Motif: S-S/T-L>

Expected Count in Protein: 0.0020

Observed Count in Protein: 1

Motif Score in Protein: 659.677

Expected Count in Proteome: 51.07957121261286

Observed Count in Proteome: 54

Enrichment Factor in Proteome: 1.0571741053821926

Annotation: "PDZ binding motif on GluR1,2,3,5"

Occurring Positions: 849

Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11741967

Motif #: 3

Known Motif: K/R-?TQT

Expected Count in Protein: 0.013

Observed Count in Protein: 1

Motif Score in Protein: 76.064

Expected Count in Proteome: 255.34633933667442

Observed Count in Proteome: 199

Enrichment Factor in Proteome: 0.779333670954328

Annotation: Motif for interaction with Dynein light chain

Occurring Positions: 746

Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11148209&dopt=Abstract

Motif #: 4

Known Motif: LG?GD

Expected Count in Protein: 0.018

Observed Count in Protein: 1

Motif Score in Protein: 56.032

Expected Count in Proteome: 346.63257024098897

Observed Count in Proteome: 405

Enrichment Factor in Proteome: 1.168384147278579

Annotation: Aspartyl protease active site in Presenilin also a YD motif

Occurring Positions: 294

Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12808018

Motif #: 5

Known Motif: S/T-?-L/V>

Expected Count in Protein: 0.027

Observed Count in Protein: 1

Motif Score in Protein: 36.681

Expected Count in Proteome: 918.6148526312666

Observed Count in Proteome: 1230

Enrichment Factor in Proteome: 1.3389724719525342
Annotation: PDZ Class 1 binding motif
Occurring Positions: 849
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11741967

Motif #: 6
Known Motif: LLTP
Expected Count in Protein: 0.029
Observed Count in Protein: 1
Motif Score in Protein: 35.042
Expected Count in Proteome: 554.2593531089325
Observed Count in Proteome: 526
Enrichment Factor in Proteome: 0.9490142061646392
Annotation: "WD40 domain of Cdc4 binding motif, Thr must be phosphorylated, CPD motif"
Occurring Positions: 675
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&list_uids=12553912&dopt=Abstract

Motif #: 7
Known Motif: W??LF
Expected Count in Protein: 0.036
Observed Count in Protein: 1
Motif Score in Protein: 27.817
Expected Count in Proteome: 698.2278199617427
Observed Count in Proteome: 727
Enrichment Factor in Proteome: 1.0412074386263122
Annotation: Androgen receptor motif that interacts with AF2
Occurring Positions: 736
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&list_uids=10816582&dopt=Abstract

Motif #: 8
Known Motif: T/V/I/Y-?Y-A/S/T/V-Q/I/T/V/S-L/I/V
Expected Count in Protein: 0.058
Observed Count in Protein: 1
Motif Score in Protein: 17.102
Expected Count in Proteome: 1135.6979377489374
Observed Count in Proteome: 1457
Enrichment Factor in Proteome: 1.2829115485477716
Annotation: SH2 ligand for SHP-2-C (PTP11c) (Tyr must be phosphorylated)
Occurring Positions: 345
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16274240&query_hl=40&itool=pubmed_DocSum

Motif #: 9
Known Motif: DRY
Expected Count in Protein: 0.06
Observed Count in Protein: 1
Motif Score in Protein: 16.738
Expected Count in Proteome: 1160.3634677039267
Observed Count in Proteome: 1639
Enrichment Factor in Proteome: 1.4124884535042945
Annotation: "Motif in Melanocortin receptors and G- protein receptors for control of receptor activation, located in cytoplasmic loop"
Occurring Positions: 681
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15215606

Motif #: 10
Known Motif: G/A-????GK-S/T
Expected Count in Protein: 0.062
Observed Count in Protein: 1
Motif Score in Protein: 16.203
Expected Count in Proteome: 1198.6810343970278
Observed Count in Proteome: 2028
Enrichment Factor in Proteome: 1.69185958716711
Annotation: Purine nucleotide triphosphate binding motif
Occurring Positions: 81
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8903506

Motif #: 11
Known Motif: F???W??-I/L/V

Expected Count in Protein: 0.073
Observed Count in Protein: 1
Motif Score in Protein: 13.769
Expected Count in Proteome: 1410.5707814967432
Observed Count in Proteome: 1690
Enrichment Factor in Proteome: 1.198096559328102
Annotation: MDM2 binding motif on p53
Occurring Positions: 732
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8875929&dopt=Abstract

Motif #: 12
Known Motif: W/F/Y-G-P/D/E-W/F/Y/L/M
Expected Count in Protein: 0.148
Observed Count in Protein: 2
Motif Score in Protein: 13.51
Expected Count in Proteome: 2875.3055587674953
Observed Count in Proteome: 2508
Enrichment Factor in Proteome: 0.8722551216695934
Annotation: gamma-adaptin ear binding motif
Occurring Positions: 287, 736
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&list_uids=14665628&dopt=Abstract

Motif #: 13
Known Motif: L?-L/I/V/F/M-??L?-L/I/V
Expected Count in Protein: 0.405
Observed Count in Protein: 4
Motif Score in Protein: 9.88
Expected Count in Proteome: 7863.757941838904
Observed Count in Proteome: 12160
Enrichment Factor in Proteome: 1.5463344739164795
Annotation: Nuclear export signal
Occurring Positions: 475, 482, 586, 628
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12520031

Motif #: 14
Known Motif: IY
Expected Count in Protein: 0.911
Observed Count in Protein: 5
Motif Score in Protein: 5.489
Expected Count in Proteome: 17691.626429120824
Observed Count in Proteome: 21433
Enrichment Factor in Proteome: 1.2114770841374305
Annotation: cFGR and Csk kinase phosphorylation site (peptide screen)
Occurring Positions: 346, 398, 460, 584, 608
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11286893

Motif #: 15
Known Motif: D??LL
Expected Count in Protein: 0.376
Observed Count in Protein: 2
Motif Score in Protein: 5.315
Expected Count in Proteome: 7308.299177267676
Observed Count in Proteome: 7150
Enrichment Factor in Proteome: 0.9783398060987893
Annotation: Di-Leu motif for receptor endocytosis (recognized by VHS domain of GGA proteins)
Occurring Positions: 322, 697
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11859375&dopt=Abstract

Motif #: 16
Known Motif: LFG
Expected Count in Protein: 0.199
Observed Count in Protein: 1
Motif Score in Protein: 5.033
Expected Count in Proteome: 3858.7632688174995
Observed Count in Proteome: 3377
Enrichment Factor in Proteome: 0.8751508617513264
Annotation: "Protease Papain substrate, a prototype cysteine proteinase"
Occurring Positions: 739
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7612652

Motif #: 17
Known Motif: R/K-?V?F
Expected Count in Protein: 0.203
Observed Count in Protein: 1
Motif Score in Protein: 4.936
Expected Count in Proteome: 3935.075304052194
Observed Count in Proteome: 3669
Enrichment Factor in Proteome: 0.9323836817612614
Annotation: PPI binding sites
Occurring Positions: 515
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15060979

Motif #: 18
Known Motif: R/K-V?F
Expected Count in Protein: 0.203
Observed Count in Protein: 1
Motif Score in Protein: 4.926
Expected Count in Proteome: 3943.1634786853556
Observed Count in Proteome: 3836
Enrichment Factor in Proteome: 0.9728229683439136
Annotation: PPI binding sites
Occurring Positions: 495
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15060979

Motif #: 19
Known Motif: I/V/L/M-?Y-T/V/A-?-I/V/L/F
Expected Count in Protein: 0.203
Observed Count in Protein: 1
Motif Score in Protein: 4.918
Expected Count in Proteome: 3949.5662130363617
Observed Count in Proteome: 4145
Enrichment Factor in Proteome: 1.0494823422173727
Annotation: SH2 ligand for SHP-2N (SHP-2)(Tyr must be phosphorylated)
Occurring Positions: 345
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16274240&query_hl=40&itool=pubmed_DocSum

Motif #: 20
Known Motif: L-I/V/L/M/F-I/V/L/M/F-D/E
Expected Count in Protein: 0.629
Observed Count in Protein: 3
Motif Score in Protein: 4.766
Expected Count in Proteome: 12226.450681554543
Observed Count in Proteome: 10521
Enrichment Factor in Proteome: 0.8605113842132881
Annotation: Clathrin box motif on cargo adapter proteins
Occurring Positions: 171, 552, 686
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11489622&dopt=Abstract

Motif #: 21
Known Motif: PPR
Expected Count in Protein: 0.221
Observed Count in Protein: 1
Motif Score in Protein: 4.531
Expected Count in Proteome: 4286.766514943515
Observed Count in Proteome: 7263
Enrichment Factor in Proteome: 1.6942840191275734
Annotation: WW domain group III binding motif
Occurring Positions: 717
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12592019&dopt=Abstract

Motif #: 22
Known Motif: YM
Expected Count in Protein: 0.457
Observed Count in Protein: 2
Motif Score in Protein: 4.379
Expected Count in Proteome: 8870.066089356675
Observed Count in Proteome: 8402
Enrichment Factor in Proteome: 0.9472308227874069

Annotation: SH2 ligand for Vav1 (group II) (phospho-peptide)
Occurring Positions: 399, 683
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7511210

Motif #: 23
Known Motif: R/K-L/V/I-????-H/Q-L/A
Expected Count in Protein: 0.24
Observed Count in Protein: 1
Motif Score in Protein: 4.161
Expected Count in Proteome: 4667.350303576768
Observed Count in Proteome: 5286
Enrichment Factor in Proteome: 1.1325483745989962
Annotation: PTS2 peroxisome targeting motif
Occurring Positions: 254
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15312767

Motif #: 24
Known Motif: F/W-??L-F/W/Y
Expected Count in Protein: 0.287
Observed Count in Protein: 1
Motif Score in Protein: 3.486
Expected Count in Proteome: 5572.325777907939
Observed Count in Proteome: 6866
Enrichment Factor in Proteome: 1.2321605508459261
Annotation: Regulatory motif in androgen receptors
Occurring Positions: 736
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12714604

Motif #: 25
Known Motif: R/K-??-D/E-???-Y
Expected Count in Protein: 0.29
Observed Count in Protein: 1
Motif Score in Protein: 3.453
Expected Count in Proteome: 5624.699434440816
Observed Count in Proteome: 5630
Enrichment Factor in Proteome: 1.0009423731207268
Annotation: Tyrosine protein kinase phosphorylation site
Occurring Positions: 392
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6280176

Motif #: 26
Known Motif: L??RR
Expected Count in Protein: 0.29
Observed Count in Protein: 1
Motif Score in Protein: 3.444
Expected Count in Proteome: 5638.960444584615
Observed Count in Proteome: 6667
Enrichment Factor in Proteome: 1.1823101200155899
Annotation: ERK docking motif in RSK less stringent
Occurring Positions: 436
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10074458

Motif #: 27
Known Motif: K/R/H/D/E-C-D/E
Expected Count in Protein: 0.585
Observed Count in Protein: 2
Motif Score in Protein: 3.42
Expected Count in Proteome: 11359.043632552002
Observed Count in Proteome: 10703
Enrichment Factor in Proteome: 0.9422448179816868
Annotation: "Cys nitrosylation consensus motif, Cys is nitrosylated"
Occurring Positions: 23, 444
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10987371

Motif #: 28
Known Motif: PTL
Expected Count in Protein: 0.292
Observed Count in Protein: 1
Motif Score in Protein: 3.419
Expected Count in Proteome: 5680.233878065894

Observed Count in Proteome: 4653
Enrichment Factor in Proteome: 0.8191564114934534
Annotation: Motif in Fos for proteosome degradation
Occurring Positions: 633
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=11709728&query_hl=60&itool=pubmed_ExternalLink

Motif #: 29
Known Motif: E?Y?-Q/S/G
Expected Count in Protein: 0.301
Observed Count in Protein: 1
Motif Score in Protein: 3.321
Expected Count in Proteome: 5848.541376212785
Observed Count in Proteome: 5060
Enrichment Factor in Proteome: 0.8651729849394681
Annotation: Protease TEV
Occurring Positions: 25
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3285343

Motif #: 30
Known Motif: L?R??-S/T
Expected Count in Protein: 0.667
Observed Count in Protein: 2
Motif Score in Protein: 2.997
Expected Count in Proteome: 12961.976575319899
Observed Count in Proteome: 13157
Enrichment Factor in Proteome: 1.0150458090667618
Annotation: RSK phosphorylation site
Occurring Positions: 252, 385
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8622665

Motif #: 31
Known Motif: S-Q/T-Q
Expected Count in Protein: 0.337
Observed Count in Protein: 1
Motif Score in Protein: 2.964
Expected Count in Proteome: 6553.552835463798
Observed Count in Proteome: 5999
Enrichment Factor in Proteome: 0.9153813436182433
Annotation: ATM phosphorylation of this motif on Chk2
Occurring Positions: 747
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10973490

Motif #: 32
Known Motif: V/I-?Y??-L/V
Expected Count in Protein: 0.34
Observed Count in Protein: 1
Motif Score in Protein: 2.944
Expected Count in Proteome: 6597.018664396142
Observed Count in Proteome: 6837
Enrichment Factor in Proteome: 1.0363772406616079
Annotation: ITSM immunoreceptor tyrosine based inhibitory motifs (ITMS) -stringent
Occurring Positions: 345
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10872892

Motif #: 33
Known Motif: Y-L/I/M-?-V/L/I
Expected Count in Protein: 0.688
Observed Count in Protein: 2
Motif Score in Protein: 2.906
Expected Count in Proteome: 13367.154448507576
Observed Count in Proteome: 16206
Enrichment Factor in Proteome: 1.2123747101470335
Annotation: Thyroid hormone binding motif in apolipoproteins
Occurring Positions: 585, 683
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9292950

Motif #: 34
Known Motif: R/K-?-V/I-?F

Expected Count in Protein: 0.347
Observed Count in Protein: 1
Motif Score in Protein: 2.879
Expected Count in Proteome: 6746.594069127374
Observed Count in Proteome: 6500
Enrichment Factor in Proteome: 0.9634491023765909
Annotation: PP1 protein phosphatase substrate recognition motif
Occurring Positions: 515
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9155014&dopt=Abstract

Motif #: 35
Known Motif: R/K-V/I-?F
Expected Count in Protein: 0.348
Observed Count in Protein: 1
Motif Score in Protein: 2.873
Expected Count in Proteome: 6760.461054329402
Observed Count in Proteome: 6777
Enrichment Factor in Proteome: 1.0024464227421304
Annotation: PP1 protein phosphatase substrate recognition motif
Occurring Positions: 495
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9155014&dopt=Abstract

Motif #: 36
Known Motif: DLL
Expected Count in Protein: 0.378
Observed Count in Protein: 1
Motif Score in Protein: 2.647
Expected Count in Proteome: 7338.342210983583
Observed Count in Proteome: 8354
Enrichment Factor in Proteome: 1.138404255322986
Annotation: Binding motif for clathrin heavy chain ear
Occurring Positions: 674
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12732633

Motif #: 37
Known Motif: Y??-F/Y/L
Expected Count in Protein: 3.416
Observed Count in Protein: 9
Motif Score in Protein: 2.635
Expected Count in Proteome: 66350.97169286989
Observed Count in Proteome: 71915
Enrichment Factor in Proteome: 1.0838575255971423
Annotation: Endocytosis internalization motif
Occurring Positions: 168, 382, 461, 466, 585, 609, 680, 683, 786
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2257624

Motif #: 38
Known Motif: E-S/T-D
Expected Count in Protein: 0.38
Observed Count in Protein: 1
Motif Score in Protein: 2.632
Expected Count in Proteome: 7380.025141727143
Observed Count in Proteome: 5762
Enrichment Factor in Proteome: 0.7807561477563643
Annotation: Ankyrin G binding motif in KNCQ2 and KNCQ3 potassium channels
Occurring Positions: 724
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=16525039&query_hl=1&itol=pubmed_docsum

Motif #: 39
Known Motif: A/G-R
Expected Count in Protein: 7.056
Observed Count in Protein: 18
Motif Score in Protein: 2.551
Expected Count in Proteome: 137050.15794655296
Observed Count in Proteome: 139144
Enrichment Factor in Proteome: 1.0152779251393755
Annotation: Protease matriptase protease site
Occurring Positions: 16, 34, 73, 192, 246, 281, 292, 314, 386, 405, 443, 455, 579, 652, 664, 755, 799, 809
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10962009

Motif #: 40
Known Motif: L??LL
Expected Count in Protein: 0.789
Observed Count in Protein: 2
Motif Score in Protein: 2.535
Expected Count in Proteome: 15324.66676315495
Observed Count in Proteome: 25188
Enrichment Factor in Proteome: 1.6436246470663514
Annotation: "Motif for interaction with nuclear receptors, docking motif for p300 on p53 to promote acetylation"
Occurring Positions: 485, 785
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9192902&dopt=Abstract;
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14612423

Motif #: 41
Known Motif: R??-S/T-V
Expected Count in Protein: 0.403
Observed Count in Protein: 1
Motif Score in Protein: 2.482
Expected Count in Proteome: 7823.993688819008
Observed Count in Proteome: 7482
Enrichment Factor in Proteome: 0.9562891149429557
Annotation: CamKII consensus phosphorylation site more stringent
Occurring Positions: 74
Reference: http://www.neb.com/nebecomm/tech_reference/protein_tools/protein_kinase_substrate_recognition.asp

Motif #: 42
Known Motif: L?-L/I/V/F/M-??L?-L/I/V
Expected Count in Protein: 0.406
Observed Count in Protein: 1
Motif Score in Protein: 2.465
Expected Count in Proteome: 7880.088986160318
Observed Count in Proteome: 12468
Enrichment Factor in Proteome: 1.5822156351149537
Annotation: Nuclear export signal
Occurring Positions: 191
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12520031

Motif #: 43
Known Motif: L?-L/I/V/F/M-??L?-L/I/V
Expected Count in Protein: 0.407
Observed Count in Protein: 1
Motif Score in Protein: 2.46
Expected Count in Proteome: 7896.420030481731
Observed Count in Proteome: 10770
Enrichment Factor in Proteome: 1.3639092092904994
Annotation: Nuclear export signal
Occurring Positions: 197
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12520031

Motif #: 44
Known Motif: Y??L
Expected Count in Protein: 2.108
Observed Count in Protein: 5
Motif Score in Protein: 2.372
Expected Count in Proteome: 40939.085426855374
Observed Count in Proteome: 40776
Enrichment Factor in Proteome: 0.9960163881250657
Annotation: Motif for down regulation of the CD46 receptor
Occurring Positions: 168, 382, 585, 683, 786
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8985414&dopt=Abstract

Motif #: 45
Known Motif: I/V/L-Y??-P/F
Expected Count in Protein: 0.434
Observed Count in Protein: 1
Motif Score in Protein: 2.305
Expected Count in Proteome: 8426.636646896337
Observed Count in Proteome: 8353
Enrichment Factor in Proteome: 0.9912614427342777

Annotation: ABL phosphorylation site
Occurring Positions: 460
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14757045

Motif #: 46
Known Motif: I/V/L-Y?-P/F
Expected Count in Protein: 0.435
Observed Count in Protein: 1
Motif Score in Protein: 2.3
Expected Count in Proteome: 8443.95680051579
Observed Count in Proteome: 8019
Enrichment Factor in Proteome: 0.9496732621263727
Annotation: ABL phosphorylation site
Occurring Positions: 183
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14757045

Motif #: 47
Known Motif: R?L
Expected Count in Protein: 4.915
Observed Count in Protein: 11
Motif Score in Protein: 2.238
Expected Count in Proteome: 95464.07439614375
Observed Count in Proteome: 104847
Enrichment Factor in Proteome: 1.0982875041025408
Annotation: Cyclin A motif that binds cdk2 complexes
Occurring Positions: 35, 93, 200, 248, 323, 389, 526, 529, 572, 783, 810
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9724724

Motif #: 48
Known Motif: F/I/L/V/W-???-F/A/I/L/V/W-??-F/A/I/L/V/W-????-F/I/L/V/W
Expected Count in Protein: 5.094
Observed Count in Protein: 11
Motif Score in Protein: 2.16
Expected Count in Proteome: 98933.81874991025
Observed Count in Proteome: 134870
Enrichment Factor in Proteome: 1.3632345511794202
Annotation: "Calmodulin binding motif type A in calcineurin, NOS and many CaM binding proteins"
Occurring Positions: 42, 128, 147, 219, 303, 320, 326, 353, 478, 570, 622
Reference: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>

Motif #: 49
Known Motif: D/E-?LL
Expected Count in Protein: 0.944
Observed Count in Protein: 2
Motif Score in Protein: 2.118
Expected Count in Proteome: 18338.442666347026
Observed Count in Proteome: 17102
Enrichment Factor in Proteome: 0.9325764630703333
Annotation: Di-Leu acidic motif for receptor endocytosis (recognized by VHS domain of GGA proteins)
Occurring Positions: 322, 697
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11859375

Motif #: 50
Known Motif: R?-S/Y/F/W/T/Q/A/D-?-S/T-?-P/L/M
Expected Count in Protein: 0.474
Observed Count in Protein: 1
Motif Score in Protein: 2.111
Expected Count in Proteome: 9202.537155618333
Observed Count in Proteome: 8558
Enrichment Factor in Proteome: 0.9299609287396542
Annotation: "14-3-3 motifs, Ser must be phosphorylated"
Occurring Positions: 122
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11069759

Motif #: 51
Known Motif: T??I
Expected Count in Protein: 1.896
Observed Count in Protein: 4
Motif Score in Protein: 2.11
Expected Count in Proteome: 36818.37747587087

Observed Count in Proteome: 38347
Enrichment Factor in Proteome: 1.0415179219978101
Annotation: FHA domain bind this ligand in Chk2
Occurring Positions: 89, 138, 581, 614
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12702867

Motif #: 52
Known Motif: L???I??-I/L
Expected Count in Protein: 0.482
Observed Count in Protein: 1
Motif Score in Protein: 2.076
Expected Count in Proteome: 9356.396044223502
Observed Count in Proteome: 11597
Enrichment Factor in Proteome: 1.2394729707021983
Annotation: Corepressor nuclear box motif binds to nuclear receptors
Occurring Positions: 731
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11865025&dopt=Abstract

Motif #: 53
Known Motif: T??-I/L
Expected Count in Protein: 6.3
Observed Count in Protein: 13
Motif Score in Protein: 2.063
Expected Count in Proteome: 122366.99935699205
Observed Count in Proteome: 118489
Enrichment Factor in Proteome: 0.9683084542616067
Annotation: "FHA2 binding motif, Thr must be phosphorylated"
Occurring Positions: 88, 89, 104, 116, 138, 257, 352, 412, 434, 581, 614, 623, 696
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11069759

Motif #: 54
Known Motif: F/W-W
Expected Count in Protein: 0.5
Observed Count in Protein: 1
Motif Score in Protein: 2.0
Expected Count in Proteome: 9710.290389033284
Observed Count in Proteome: 11493
Enrichment Factor in Proteome: 1.1835897320825846
Annotation: "EH(3) EF hand domain binding motif of EPS15, Class II"
Occurring Positions: 498
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10757979

Motif #: 55
Known Motif: F?E
Expected Count in Protein: 2.1
Observed Count in Protein: 4
Motif Score in Protein: 1.905
Expected Count in Proteome: 40784.333860486135
Observed Count in Proteome: 38659
Enrichment Factor in Proteome: 0.9478884743402598
Annotation: Motif that recognizes unpaired thymidine in DNA in MutS
Occurring Positions: 123, 287, 309, 553
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11602569&dopt=Abstract

Motif #: 56
Known Motif: V/I/L/S-?Y??-L/V/I/S
Expected Count in Protein: 1.709
Observed Count in Protein: 3
Motif Score in Protein: 1.756
Expected Count in Proteome: 33186.669738412966
Observed Count in Proteome: 33372
Enrichment Factor in Proteome: 1.0055844790407673
Annotation: ITIM immunoreceptor tyrosine based inhibitory motifs (ITMS)-general
Occurring Positions: 132, 345, 380
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10872892

Motif #: 57
Known Motif: H???H
Expected Count in Protein: 0.573
Observed Count in Protein: 1

Motif Score in Protein: 1.744
Expected Count in Proteome: 11134.372518426115
Observed Count in Proteome: 23587
Enrichment Factor in Proteome: 2.118395083419942
Annotation: Motif in Calprotectin/NIF8 for microstatic activity
Occurring Positions: 772
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8929560&dopt=Abstract

Motif #: 58
Known Motif: Y-I/V-?-V/I/L/P
Expected Count in Protein: 0.577
Observed Count in Protein: 1
Motif Score in Protein: 1.733
Expected Count in Proteome: 11204.91992256648
Observed Count in Proteome: 11552
Enrichment Factor in Proteome: 1.0309756856659464
Annotation: SH2 ligand for PTPN6-C (Tyr must be phosphorylated)
Occurring Positions: 368
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7511210

Motif #: 59
Known Motif: M???L
Expected Count in Protein: 1.741
Observed Count in Protein: 3
Motif Score in Protein: 1.723
Expected Count in Proteome: 33819.33333970161
Observed Count in Proteome: 35631
Enrichment Factor in Proteome: 1.0535689642992345
Annotation: PMSA motif for internalization
Occurring Positions: 198, 487, 650
Reference: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed&cmd=search&term=MXXXX>

Motif #: 60
Known Motif: F/I/L/V/W-???-F/I/L/V-???-F/I/L/V/W
Expected Count in Protein: 11.86
Observed Count in Protein: 20
Motif Score in Protein: 1.686
Expected Count in Proteome: 230349.74384907258
Observed Count in Proteome: 274103
Enrichment Factor in Proteome: 1.1899427167568069
Annotation: "Calmodulin binding motif type B 1-2-10 in CAM kinases, MARCKS, HSP90, synapsins "
Occurring Positions: 33, 119, 251, 255, 303, 316, 346, 351, 353, 411, 485, 510, 513, 558, 584, 622, 631, 686, 731, 765
Reference: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>

Motif #: 61
Known Motif: Y??-L/I/V
Expected Count in Protein: 4.285
Observed Count in Protein: 7
Motif Score in Protein: 1.634
Expected Count in Proteome: 83218.92767466007
Observed Count in Proteome: 86746
Enrichment Factor in Proteome: 1.0423830542389207
Annotation: JAK2 autophosphorylation signal
Occurring Positions: 168, 342, 347, 382, 585, 683, 786
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15143187

Motif #: 62
Known Motif: F/I/L/V/W-?????-F/I/L/V-????-F/I/L/V/W
Expected Count in Protein: 11.761
Observed Count in Protein: 19
Motif Score in Protein: 1.615
Expected Count in Proteome: 228436.23028263345
Observed Count in Proteome: 271505
Enrichment Factor in Proteome: 1.1885373859657882
Annotation: "Calmodulin binding motif type B in a-fodrin, smooth muscle MLCK, titan"
Occurring Positions: 42, 128, 147, 157, 219, 287, 300, 313, 320, 326, 344, 353, 475, 478, 570, 622, 628, 688, 722
Reference: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>

Motif #: 63
Known Motif: GP?

Expected Count in Protein: 3.824
Observed Count in Protein: 6
Motif Score in Protein: 1.569
Expected Count in Proteome: 74279.79522479388
Observed Count in Proteome: 81150
Enrichment Factor in Proteome: 1.0924908954637629
Annotation: Protease TTP cleavage site
Occurring Positions: 61, 161, 268, 272, 375, 668
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=2821828&query_hl=41&itool=pubmed_DocSum

Motif #: 64
Known Motif: D/E-?-S/T-I/L/F/W/M/V/A
Expected Count in Protein: 4.589
Observed Count in Protein: 7
Motif Score in Protein: 1.525
Expected Count in Proteome: 89129.29646036006
Observed Count in Proteome: 78493
Enrichment Factor in Proteome: 0.8806644180671782
Annotation: Plk phosphorylation site
Occurring Positions: 103, 212, 446, 451, 502, 537, 775
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12738781&dopt=Abstract

Motif #: 65
Known Motif: I/L/V-??Y?-L/V
Expected Count in Protein: 0.669
Observed Count in Protein: 1
Motif Score in Protein: 1.496
Expected Count in Proteome: 12984.836033281814
Observed Count in Proteome: 13500
Enrichment Factor in Proteome: 1.03967427585514
Annotation: Tyr phosphorylation motif
Occurring Positions: 165
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14709333

Motif #: 66
Known Motif: D/E-??L-L/I
Expected Count in Protein: 1.348
Observed Count in Protein: 2
Motif Score in Protein: 1.484
Expected Count in Proteome: 26177.018188067705
Observed Count in Proteome: 26942
Enrichment Factor in Proteome: 1.0292234129355877
Annotation: AP complex deuleucine sorting motif
Occurring Positions: 322, 671
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12651740

Motif #: 67
Known Motif: N?-T/S
Expected Count in Protein: 4.047
Observed Count in Protein: 6
Motif Score in Protein: 1.483
Expected Count in Proteome: 78596.7179427396
Observed Count in Proteome: 88217
Enrichment Factor in Proteome: 1.1224005570343167
Annotation: N-linked glycosylation site
Occurring Positions: 67, 621, 636, 694, 759, 847
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3549291

Motif #: 68
Known Motif: Y??-I/L/M
Expected Count in Protein: 3.47
Observed Count in Protein: 5
Motif Score in Protein: 1.441
Expected Count in Proteome: 67392.25702165507
Observed Count in Proteome: 70582
Enrichment Factor in Proteome: 1.0473310009089023
Annotation: SH2 ligand FOR Shc group 3 (phospho-peptide) Syk also
Occurring Positions: 168, 382, 585, 683, 786
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7511210

Motif #: 69
Known Motif: Y??P
Expected Count in Protein: 1.428
Observed Count in Protein: 2
Motif Score in Protein: 1.4
Expected Count in Proteome: 27743.720963755328
Observed Count in Proteome: 24079
Enrichment Factor in Proteome: 0.8679080946444439
Annotation: SH2 ligand for PLCgamma1 C-term.)group 3(phospho-peptide)
Occurring Positions: 239, 368
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7511210

Motif #: 70
Known Motif: Y??F
Expected Count in Protein: 0.759
Observed Count in Protein: 1
Motif Score in Protein: 1.318
Expected Count in Proteome: 14740.269546217407
Observed Count in Proteome: 16505
Enrichment Factor in Proteome: 1.1197217220654863
Annotation: SH2 ligand group 3 (HCP-n-term.)(phospho-peptide)
Occurring Positions: 461
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7511210

Motif #: 71
Known Motif: W??-W/F/Y
Expected Count in Protein: 0.765
Observed Count in Protein: 1
Motif Score in Protein: 1.308
Expected Count in Proteome: 14851.180820390782
Observed Count in Proteome: 17228
Enrichment Factor in Proteome: 1.1600424375916174
Annotation: AP1 binding site for endosomal trafficking
Occurring Positions: 339
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14973137

Motif #: 72
Known Motif: Y-I/E/Y/L-?-I/L/M
Expected Count in Protein: 0.818
Observed Count in Protein: 1
Motif Score in Protein: 1.223
Expected Count in Proteome: 15885.850018599653
Observed Count in Proteome: 17302
Enrichment Factor in Proteome: 1.08914537023466
Annotation: SH2 ligand for SHB (Tyr must be phosphorylated)
Occurring Positions: 585
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=7511210&query_hl=2&itool=pubmed_docsum

Motif #: 73
Known Motif: S?D
Expected Count in Protein: 3.294
Observed Count in Protein: 4
Motif Score in Protein: 1.214
Expected Count in Proteome: 63983.47545690591
Observed Count in Proteome: 65074
Enrichment Factor in Proteome: 1.0170438466386307
Annotation: CAMKII phosphorylation site
Occurring Positions: 9, 101, 274, 356
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=10347170&query_hl=6&itool=pubmed_DocSum

Motif #: 74
Known Motif: Y-T/L/V/F/I/C
Expected Count in Protein: 6.71
Observed Count in Protein: 8
Motif Score in Protein: 1.192

Expected Count in Proteome: 130331.92231494842
Observed Count in Proteome: 140972
Enrichment Factor in Proteome: 1.0816383085284336
Annotation: SH2 ligand for Stat5(Tyr must be phosphorylated)
Occurring Positions: 27, 134, 140, 347, 368, 469, 557, 585
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8647880&dopt=Abstract

Motif #: 75
Known Motif: S/T-P
Expected Count in Protein: 7.688
Observed Count in Protein: 9
Motif Score in Protein: 1.171
Expected Count in Proteome: 149320.8245734066
Observed Count in Proteome: 166876
Enrichment Factor in Proteome: 1.11756682617275
Annotation: "WW domain Class IV motif, Ser/Thr is phosphorylated"
Occurring Positions: 101, 185, 274, 278, 331, 412, 506, 638, 677
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11911877

Motif #: 76
Known Motif: S/T-??S
Expected Count in Protein: 9.612
Observed Count in Protein: 10
Motif Score in Protein: 1.04
Expected Count in Proteome: 186694.13023015027
Observed Count in Proteome: 223485
Enrichment Factor in Proteome: 1.1970649517716234
Annotation: GSK3-ALPHA consensus phosphorylation site (C-term Ser must first be phosphorylated)
Occurring Positions: 28, 101, 110, 133, 274, 304, 352, 380, 403, 814
Reference: http://www.neb.com/nebecomm/tech_reference/protein_tools/protein_kinase_substrate_recognition.asp

Motif #: 77
Known Motif: R/K-?-A/V/L/I/M/W/Y/F-L/T/K/F
Expected Count in Protein: 8.671
Observed Count in Protein: 9
Motif Score in Protein: 1.038
Expected Count in Proteome: 168413.3923558199
Observed Count in Proteome: 177098
Enrichment Factor in Proteome: 1.0515672033126169
Annotation: Protease Subtilisin/kexin isoszyme-1 (SKI1) cleavage site
Occurring Positions: 74, 113, 248, 282, 318, 323, 439, 467, 758
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=99145548&dopt=Abstract

Motif #: 78
Known Motif: K/R-R
Expected Count in Protein: 5.831
Observed Count in Protein: 6
Motif Score in Protein: 1.029
Expected Count in Proteome: 113255.4432242208
Observed Count in Proteome: 135607
Enrichment Factor in Proteome: 1.1973552541004855
Annotation: Protease Kexin2 cleavage site
Occurring Positions: 112, 247, 439, 606, 707, 793
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2646633&dopt=Abstract

Motif #: 79
Known Motif: S???S
Expected Count in Protein: 5.865
Observed Count in Protein: 6
Motif Score in Protein: 1.023
Expected Count in Proteome: 113911.47935483253
Observed Count in Proteome: 147591
Enrichment Factor in Proteome: 1.2956639737796423
Annotation: "WD40 binding motif, Ser residues must be phosphorylated"
Occurring Positions: 101, 110, 274, 304, 380, 403
Reference: N/A

Motif #: 80
Known Motif: R??-S/T
Expected Count in Protein: 6.854

Observed Count in Protein: 7
Motif Score in Protein: 1.021
Expected Count in Proteome: 133112.79928885633
Observed Count in Proteome: 132222
Enrichment Factor in Proteome: 0.9933079366250628
Annotation: CamKII consensus phosphorylation site
Occurring Positions: 74, 113, 254, 282, 318, 387, 813
Reference: http://www.neb.com/nebecomm/tech_reference/protein_tools/protein_kinase_substrate_recognition.asp

Motif #: 81
Known Motif: T??-S/A
Expected Count in Protein: 6.998
Observed Count in Protein: 7
Motif Score in Protein: 1.0
Expected Count in Proteome: 135913.856438119
Observed Count in Proteome: 138950
Enrichment Factor in Proteome: 1.022338734559146
Annotation: "FHA of KAPP binding motif, Thr must be phosphorylated"
Occurring Positions: 121, 133, 214, 599, 649, 725, 814
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11069759

Motif #: 82
Known Motif: Y-L/I
Expected Count in Protein: 3.027
Observed Count in Protein: 3
Motif Score in Protein: 0.991
Expected Count in Proteome: 58798.65948180719
Observed Count in Proteome: 63220
Enrichment Factor in Proteome: 1.07519458023632
Annotation: SH2 ligand for PLCgamma1 N-term.)group 3(phospho-peptide)
Occurring Positions: 140, 557, 585
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7511210

Motif #: 83
Known Motif: S??-S/T
Expected Count in Protein: 9.632
Observed Count in Protein: 9
Motif Score in Protein: 0.934
Expected Count in Proteome: 187077.8623347768
Observed Count in Proteome: 226038
Enrichment Factor in Proteome: 1.2082562692292467
Annotation: Casein Kinase I consensus phosphorylation site (N-term Ser must first be phosphorylated)
Occurring Positions: 29, 69, 85, 101, 271, 305, 431, 663, 747
Reference: http://www.neb.com/nebecomm/tech_reference/protein_tools/protein_kinase_substrate_recognition.asp

Motif #: 84
Known Motif: VP
Expected Count in Protein: 3.314
Observed Count in Protein: 3
Motif Score in Protein: 0.905
Expected Count in Proteome: 64374.56547988113
Observed Count in Proteome: 61682
Enrichment Factor in Proteome: 0.9581734577964237
Annotation: Interleukin converting enzyme protease
Occurring Positions: 46, 595, 805
Reference: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=Display&DB=pubmed>

Motif #: 85
Known Motif: T?Y
Expected Count in Protein: 1.151
Observed Count in Protein: 1
Motif Score in Protein: 0.869
Expected Count in Proteome: 22345.753724943133
Observed Count in Proteome: 21527
Enrichment Factor in Proteome: 0.9633597624398227
Annotation: MEK phosphorylation of MAPK activation site
Occurring Positions: 138
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1849075

Motif #: 86

Known Motif: R/K/H-S/T/A/V/L-?-S/T-?-P/E/S/R/D/I/F
Expected Count in Protein: 2.404
Observed Count in Protein: 2
Motif Score in Protein: 0.832
Expected Count in Proteome: 46688.45023594501
Observed Count in Proteome: 50172
Enrichment Factor in Proteome: 1.0746126664399975
Annotation: 14-3-3 motif
Occurring Positions: 387, 813
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10102273&dopt=Abstract

Motif #: 87
Known Motif: P??P
Expected Count in Protein: 3.714
Observed Count in Protein: 3
Motif Score in Protein: 0.808
Expected Count in Proteome: 72127.22056319795
Observed Count in Proteome: 125865
Enrichment Factor in Proteome: 1.7450415947986926
Annotation: "SH3 general ligand."
Occurring Positions: 266, 267, 270
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7855886

Motif #: 88
Known Motif: T/S-????-V/I
Expected Count in Protein: 11.62
Observed Count in Protein: 9
Motif Score in Protein: 0.775
Expected Count in Proteome: 225696.97025188274
Observed Count in Proteome: 225570
Enrichment Factor in Proteome: 0.9994374304106031
Annotation: SH2 ligand for Rasa-C (Tyr must be phosphorylated)
Occurring Positions: 101, 104, 136, 308, 331, 348, 479, 599, 761
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=11823424&query_hl=52&itool=pubmed_DocSum

Motif #: 89
Known Motif: P???D
Expected Count in Protein: 2.608
Observed Count in Protein: 2
Motif Score in Protein: 0.767
Expected Count in Proteome: 50653.11619570732
Observed Count in Proteome: 43793
Enrichment Factor in Proteome: 0.8645667490781408
Annotation: platelet fibrinogen receptor antagonist
Occurring Positions: 18, 359
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=9568289&query_hl=54&itool=pubmed_docsum

Motif #: 90
Known Motif: D??G
Expected Count in Protein: 2.686
Observed Count in Protein: 2
Motif Score in Protein: 0.745
Expected Count in Proteome: 52165.03421971401
Observed Count in Proteome: 48722
Enrichment Factor in Proteome: 0.9339972786136344
Annotation: motif that binds phosphate in GDP and GTP binding proteins
Occurring Positions: 11, 401
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8903506

Motif #: 91
Known Motif: R?-S/T
Expected Count in Protein: 6.868
Observed Count in Protein: 5
Motif Score in Protein: 0.728
Expected Count in Proteome: 133385.8388349916
Observed Count in Proteome: 121388
Enrichment Factor in Proteome: 0.9100516296198892

Annotation: PKA consensus phosphorylation site
Occurring Positions: 112, 456, 472, 600, 719
Reference: http://www.neb.com/nebecomm/tech_reference/protein_tools/protein_kinase_substrate_recognition.asp

Motif #: 92
Known Motif: S?R
Expected Count in Protein: 4.19
Observed Count in Protein: 3
Motif Score in Protein: 0.716
Expected Count in Proteome: 81385.40942850367
Observed Count in Proteome: 74485
Enrichment Factor in Proteome: 0.9152131877573754
Annotation: PKC phosphorylation motif
Occurring Positions: 110, 245, 663
Reference: "Woodget J.R., Gould K.L., Hunter T., Eur. J. Biochem. 161:177-184(1986), Prosite PS00005, <http://au.expasy.org/cgi-bin/nicedoc.pl?PDOC00005>"

Motif #: 93
Known Motif: R??K
Expected Count in Protein: 2.832
Observed Count in Protein: 2
Motif Score in Protein: 0.706
Expected Count in Proteome: 55002.542718357276
Observed Count in Proteome: 52437
Enrichment Factor in Proteome: 0.9533559251706918
Annotation: SH3 binding motif for GADS SH3 recognizing slp-76 motif (nonconventional)
Occurring Positions: 227, 439
Reference:
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=12620234&query_hl=16&itool=pubmed_docsum

Motif #: 94
Known Motif: S/T-?-K/R
Expected Count in Protein: 13.404
Observed Count in Protein: 9
Motif Score in Protein: 0.671
Expected Count in Proteome: 260337.51190674148
Observed Count in Proteome: 236272
Enrichment Factor in Proteome: 0.9075603368470301
Annotation: PKC phosphorylation motif
Occurring Positions: 72, 85, 110, 245, 321, 390, 506, 663, 781
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2413024

Motif #: 95
Known Motif: K/R-??-S/T
Expected Count in Protein: 13.376
Observed Count in Protein: 8
Motif Score in Protein: 0.598
Expected Count in Proteome: 259804.6034907219
Observed Count in Proteome: 251404
Enrichment Factor in Proteome: 0.9676656865280607
Annotation: RSK phosphorylation motif
Occurring Positions: 74, 113, 254, 282, 318, 387, 758, 813
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12832467

Motif #: 96
Known Motif: S/T-Q
Expected Count in Protein: 5.503
Observed Count in Protein: 3
Motif Score in Protein: 0.545
Expected Count in Proteome: 106888.43695569468
Observed Count in Proteome: 102244
Enrichment Factor in Proteome: 0.9565487428951759
Annotation: ATM kinase phosphorylation site
Occurring Positions: 116, 431, 748
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10608806

Motif #: 97
Known Motif: P?P
Expected Count in Protein: 3.721

Observed Count in Protein: 2
Motif Score in Protein: 0.537
Expected Count in Proteome: 72275.1671443816
Observed Count in Proteome: 126815
Enrichment Factor in Proteome: 1.7546137215658881
Annotation: SH3 binding motif in Pak that binds PIX Sh3 domain (nonconventional)
Occurring Positions: 267, 273
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12676796

Motif #: 98
Known Motif: S??S
Expected Count in Protein: 5.877
Observed Count in Protein: 3
Motif Score in Protein: 0.51
Expected Count in Proteome: 114145.61361315154
Observed Count in Proteome: 148151
Enrichment Factor in Proteome: 1.297912335922915
Annotation: "Casien kinase I phosphorylation site, 1st Ser must be phosphorylated"
Occurring Positions: 29, 271, 305
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1995625

Motif #: 99
Known Motif: T??D
Expected Count in Protein: 2.101
Observed Count in Protein: 1
Motif Score in Protein: 0.476
Expected Count in Proteome: 40797.94572847638
Observed Count in Proteome: 41327
Enrichment Factor in Proteome: 1.0129676693783713
Annotation: "FHA1 binding motif, Thr must be phosphorylated, binding motif of proteins binding to Chk2"
Occurring Positions: 506
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1270287

Motif #: 100
Known Motif: S/T-??-D/E
Expected Count in Protein: 13.52
Observed Count in Protein: 6
Motif Score in Protein: 0.444
Expected Count in Proteome: 262595.4667574014
Observed Count in Proteome: 261014
Enrichment Factor in Proteome: 0.9939775549938855
Annotation: "Casien kinase II phosphorylation site, "
Occurring Positions: 53, 308, 448, 506, 721, 723
Reference: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2207178

Motif #: 101
Known Motif: S/T-??E
Expected Count in Protein: 8.132
Observed Count in Protein: 3
Motif Score in Protein: 0.369
Expected Count in Proteome: 157945.01913901465
Observed Count in Proteome: 154661
Enrichment Factor in Proteome: 0.9792078334795462
Annotation: Casien kinase II consensus phosphorylation site
Occurring Positions: 53, 308, 721
Reference: http://www.neb.com/nebecomm/tech_reference/protein_tools/protein_kinase_substrate_recognition.asp
