

Appendix A – Supplementary Tables
Circadian Rhythm of the Human Plasma Proteome

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Supplementary table 1: Circadian-regulated plasma proteins.

This table lists plasma proteins identified as significantly circadian-regulated (Benjamini–Hochberg adjusted $p < 0.05$) and grouped into Cluster A and Cluster B based on hierarchical clustering of z-scored abundances across 24 hours. Columns include official gene and protein IDs, amplitude (calculated from the original, non-z-scored data), acrophase (derived from z-scored data), Benjamini–Hochberg–adjusted p-values, and cluster designation. Note: Acrophase values are absolute 24-h clock times (0–24 h), not times relative to sampling start.

Gene_ID	Protein_ID	Amplitude (from original measurement)	Acrophase_hr (from z-scored data)	Corrected p value	Cluster
IGKV2-28	A0A075B6P5;P01615	0.084106789	3.978978979	0.030094719	Cluster B
IGKV2D-29	A0A075B6S2	0.134317497	3.738738739	0.009019032	Cluster B
IGHV3-35	A0A0C4DH35	0.136534228	1.960960961	0.030094719	Cluster B
IGKV2-29	A2NVJ5	0.062343976	17.88888889	0.038683721	Cluster A
IGLL5	B9A064	0.060313714	0.327327327	0.006142401	Cluster B
PDLIM1	O00151	0.294280806	16.68768769	1.20821E-07	Cluster A
NRP1	O14786	0.083898878	10.53753754	0.026444072	Cluster A
ARPC5	O15511	0.206894195	8.831831832	0.000370144	Cluster A
CAVIN2	O95810	0.296362198	17.02402402	1.66834E-05	Cluster A
LDHA	P00338	0.11255609	9.864864865	0.002035156	Cluster A
GSR	P00390	0.077013771	17.79279279	0.009613803	Cluster A
PGK1	P00558	0.178566854	9.192192192	0.031474676	Cluster A
C1R	P00736	0.041675173	6.141141141	8.6056E-08	Cluster B
F9	P00740	0.047615827	1.768768769	0.046875845	Cluster B
CFD	P00746	0.136266372	2.537537538	1.93549E-14	Cluster B
SERPINC1	P01008	0.03689408	2.201201201	0.017889319	Cluster B
C3	P01024	0.031496587	3.066066066	0.013488751	Cluster B
CST3	P01034	0.106106406	1	1.04309E-08	Cluster B
IGLV2-11	P01706	0.093921752	2.105105105	0.011133479	Cluster B
IGLV3-19	P01714	0.045075928	2.633633634	0.005212911	Cluster B
IGLV3-1	P01715	0.092984253	0.711711712	0.04009785	Cluster B
IGLV3-25	P01717	0.080123252	2.921921922	0.001610632	Cluster B
IGHA2	P01877	0.084896427	19.47447447	0.002675044	Cluster A
HLA-B	P01889	0.143407509	7.054054054	0.001110762	Cluster A
MB	P02144	0.164890026	9.528528529	0.001187753	Cluster A
APOE	P02649	0.057071701	3.594594595	0.006039055	Cluster B
APOC2	P02655	0.090540852	12.93993994	5.80483E-05	Cluster A
APOC3	P02656	0.168546933	16.97597598	0.000141242	Cluster B
FGA	P02671	0.039101749	4.459459459	0.038972244	Cluster B
APCS	P02743	0.066744194	7.198198198	8.67302E-08	Cluster B
FN1	P02751	0.118013176	4.747747748	0.022807183	Cluster B
AMBP	P02760	0.055774533	1.528528529	7.14366E-07	Cluster B
ALB	P02768	0.049619442	0.135135135	0.049758483	Cluster B
PPBP	P02775	0.216120566	18.99399399	2.55625E-08	Cluster A
TFRC	P02786	0.035067415	18.51351351	0.045285187	Cluster A
ANG	P03950	0.139420681	2.201201201	0.00817038	Cluster B
F11	P03951	0.022680524	7.486486486	0.03830231	Cluster A

PROC	P04070	0.051330689	5.660660661	0.000395416	Cluster B
ALDOA	P04075	0.145257236	16.54354354	3.02157E-05	Cluster A
GAPDH	P04406	0.219167463	17.21621622	5.42334E-07	Cluster A
AMY2A	P04746	0.095747897	19.42642643	0.011502611	Cluster B
IGF1	P05019	0.05863861	6.333333333	0.042674525	Cluster B
ITGB3	P05106	0.221505921	16.15915916	0.000135803	Cluster A
S100A8	P05109	0.310600855	12.93993994	1.71695E-09	Cluster A
SERPINA5	P05154	0.221047081	3.018018018	0.002675044	Cluster B
SERPIND1	P05546	0.029939442	3.306306306	0.02235002	Cluster B
GSN	P06396	0.05826025	12.74774775	6.43678E-10	Cluster A
S100A9	P06702	0.337304754	12.7957958	1.01613E-13	Cluster A
APOA4	P06727	0.090493397	0.183183183	1.93549E-14	Cluster B
CKM	P06732	0.237844104	13.8048048	1.37999E-07	Cluster A
ENO1	P06733	0.205659879	7.678678679	0.002838926	Cluster A
TPM3	P06753	0.279510939	15.67867868	3.66863E-05	Cluster A
PFN1	P07737	0.314135093	16.63963964	6.29344E-10	Cluster A
HSP90AA1	P07900	0.191771554	18.56156156	0.003072395	Cluster A
THBS1	P07996	0.229260909	17.31231231	7.30447E-06	Cluster A
SERPINA6	P08185	0.029732773	2.201201201	0.011779384	Cluster B
SLC3A2	P08195	0.07119584	18.84984985	0.016156865	Cluster A
MGP	P08493	0.146689233	20.24324324	0.042316391	Cluster B
ITGA2B	P08514	0.321142171	15.91891892	5.20829E-06	Cluster A
PLEK	P08567	0.279350335	15.63063063	8.12322E-08	Cluster A
CD14	P08571	0.051001446	16.4954955	0.001836297	Cluster A
TPM1	P09493	0.185235389	14.52552553	0.006411383	Cluster A
CALM1	P0DP23;P0DP24;P0DP25	0.259079955	17.93693694	0.000192325	Cluster A
SRGN	P10124	0.268265815	18.8018018	2.51623E-06	Cluster A
TXN	P10599	0.147000857	17.16816817	0.04931872	Cluster A
PF4V1	P10720	0.254493741	18.65765766	1.36493E-05	Cluster A
HSPA8	P11142	0.589068331	16.35135135	0.000706786	Cluster A
F5	P12259	0.033010642	5.996996997	0.044901214	Cluster B
ACTN1	P12814	0.287937627	17.02402402	5.74265E-08	Cluster A
CDH1	P12830	0.114189518	10.53753754	0.00025947	Cluster A
NCAM1	P13591	0.075462	22.06906907	0.010927672	Cluster A
LCPI	P13796	0.055258445	13.70870871	0.000215459	Cluster A
PKM	P14618	0.298063361	17.21621622	3.28682E-05	Cluster A
VCL	P18206	0.259783302	16.63963964	6.43678E-10	Cluster A
MYL12A	P19105;O14950	0.203194186	16.11111111	0.003054135	Cluster A
ITIH2	P19823	0.02459064	5.18018018	0.049017931	Cluster B
FLNA	P21333	0.328048342	16.44744745	1.71695E-09	Cluster A
IGFBP4	P22692	0.11943495	3.642642643	0.000595217	Cluster B
CPN2	P22792	0.029976317	18.51351351	0.020339361	Cluster A
PROZ	P22891	0.047393559	9.912912913	0.023479102	Cluster A
CFL1	P23528	0.327075885	16.73573574	6.77109E-10	Cluster A

IGFBP6	P24592	0.152829912	1	6.43678E-10	Cluster B
AZGP1	P25311	0.046871218	0.471471471	0.009321463	Cluster B
MSN	P26038	0.198300677	17.02402402	1.66834E-05	Cluster A
CALML3	P27482	0.285769093	17.40840841	7.41566E-06	Cluster A
CALR	P27797	0.137215401	8.159159159	0.009613803	Cluster A
TKT	P29401	0.243367419	18.84984985	0.0001023	Cluster A
PRDX6	P30041	0.207668089	16.97597598	0.011416489	Cluster A
CORO1A	P31146	0.183092174	16.92792793	0.004273929	Cluster A
RNASE4	P34096	0.099595751	7.39039039	0.039094121	Cluster B
THBS4	P35443	0.190744476	13.03603604	2.89216E-06	Cluster A
MYH9	P35579	0.3119037	16.4954955	5.74265E-08	Cluster A
SERPINF1	P36955	0.0335624	3.306306306	2.98258E-05	Cluster B
TAGLN2	P37802	0.340237105	16.83183183	3.60727E-07	Cluster A
PTGDS	P41222	0.124180444	2.72972973	1.04516E-13	Cluster B
LIMS1	P48059	0.276004862	16.63963964	0.001224686	Cluster A
MASP1	P48740	0.034185073	8.303303303	0.02413035	Cluster A
COMP	P49747	0.153931798	12.36336336	8.56454E-12	Cluster A
APOC4	P55056	0.145473358	12.07507508	5.74265E-08	Cluster A
MTPN	P58546	0.285926852	16.73573574	0.027871134	Cluster A
RAB15	P59190	0.166310773	15.00600601	0.000648821	Cluster A
MYL6	P60660	0.371958253	16.44744745	1.51385E-06	Cluster A
ACTB	P60709	0.295110737	16.63963964	6.43678E-10	Cluster A
ARF1	P61204;P84077	0.241931526	11.59459459	1.50224E-05	Cluster A
RAP1B	P61224	0.270864848	15.67867868	3.89034E-06	Cluster A
LYZ	P61626	0.069276373	7.15015015	2.24403E-07	Cluster B
B2M	P61769	0.126658389	3.594594595	1.93549E-14	Cluster B
PPIA	P62937	0.207149724	15.82282282	5.20829E-06	Cluster A
YWHAZ	P63104	0.269696085	16.68768769	4.48418E-07	Cluster A
TPM4	P67936	0.32422086	16.63963964	1.50198E-07	Cluster A
ACTA1	P68133	0.253905895	16.25525526	5.56594E-07	Cluster A
GSTO1	P78417	0.126687442	16.92792793	0.031474676	Cluster A
CAP1	Q01518	0.276005429	8.399399399	2.82549E-05	Cluster A
CFHR1	Q03591	0.195175338	12.50750751	0.003711364	Cluster A
HGFAC	Q04756	0.051005887	19.66666667	0.013167388	Cluster A
LGALS3BP	Q08380	0.037035913	8.015015015	0.049015312	Cluster A
SPP2	Q13103	0.154937817	7.966966967	5.16318E-10	Cluster A
MMRN1	Q13201	0.144753245	19.42642643	0.048216074	Cluster A
ILK	Q13418	0.299172411	16.54354354	3.26932E-06	Cluster A
PCOLCE	Q15113	0.089137021	5.948948949	4.59219E-06	Cluster B
RSU1	Q15404	0.264426252	17.16816817	0.000441756	Cluster A
CST6	Q15828	0.190514789	22.11711712	0.003072395	Cluster B
ZYX	Q15942	0.282913402	16.83183183	2.26821E-06	Cluster A
IGFBP7	Q16270	0.091279652	1	0.013488751	Cluster B
CCL14	Q16627	0.132306248	2.585585586	0.000400987	Cluster B

PI16	Q6UXB8	0.078776211	11.45045045	0.021693642	Cluster A
FERMT3	Q86UX7	0.312972969	16.73573574	2.11078E-09	Cluster A
PRAP1	Q96NZ9	0.204885167	1.432432432	7.31723E-05	Cluster B
PEBP4	Q96S96	0.134517852	4.219219219	9.30663E-05	Cluster B
TUBA1C	Q9BQE3	0.55767094	16.87987988	5.15958E-06	Cluster A
TUBB1	Q9H4B7	0.343742844	16.59159159	7.69636E-07	Cluster A
PARVB	Q9HBI1	0.219585429	15.96696697	0.00175136	Cluster A
SEMA4B	Q9NPR2	0.897443779	17.31231231	0.000117672	Cluster A
CRTAC1	Q9NQ79	0.050410231	18.56156156	0.000701654	Cluster A
SERPINA10	Q9UK55	0.055156109	6.477477477	0.013488751	Cluster B
CORO1C	Q9ULV4	0.177600008	15.58258258	0.016156865	Cluster A
TLN1	Q9Y490	0.337156406	16.4954955	5.16318E-10	Cluster A
FCGBP	Q9Y6R7	0.053104097	7.726726727	0.04009785	Cluster A

Supplementary table 2: Acrophase distribution metrics for circadian protein clusters.

This table summarizes the timing characteristics (acrophase) of plasma proteins identified as significantly circadian-regulated and grouped into Cluster A (afternoon peak) and Cluster B (early-morning peak). Acrophase values are expressed in actual clock time (hours) rather than relative to the circadian cycle start time. Metrics include the mean, 95% confidence interval (CI) bounds (CI_lower and CI_upper), median, and interquartile range (q25 and q75). Cluster B proteins exhibited a significantly earlier peak (median = 3.31 hr; IQR: 2.03–5.80 hr), while Cluster A proteins peaked later in the day (median = 16.50 hr; IQR: 12.87–17.10 hr), corresponding approximately to late afternoon and early morning, respectively. These values reflect acrophases calculated using CosinorPy from z-scored protein abundance data. Note: Acrophase values are absolute 24-h clock times (0-24 h), not times relative to sampling start.

		acrophase_hr
Cluster B	mean	4.692544
	CI_lower	3.207388
	CI_upper	6.177699
	median	3.306306
	q25	2.033033
	q75	5.804805
Cluster A	mean	15.06039
	CI_lower	14.32894
	CI_upper	15.79184
	median	16.4955
	q25	12.86787
	q75	17.0961

Supplementary table 3: Tissue enrichment of circadian-regulated plasma proteins by cluster.

This table lists the tissue-specific enrichment of proteins grouped into Cluster A (afternoon peak) and Cluster B (early-morning peak). Enrichment was assessed using the DAVID bioinformatics resource (2024 version), referencing the UP_TISSUE database with Homo sapiens (9606) as the background species. Pathological, fetal, fluid-based, and placental tissue types were excluded. For each enriched tissue, the number of associated proteins (Count), the corresponding gene symbols (Genes), and the Benjamini–Hochberg adjusted p-value (Benjamini) are reported.

Cluster B			
Term	Protein Count	Genes	Benjamini
Liver	27	CCL14, APCS, ITIH2, C1R, SERPINC1, SERPINA10, SERPINA6, SERPINA5, C3, APOE, PTGDS, B2M, FGA, AMBP, SERPIND1, IGFBP4, SERPINF1, FN1, APOC3, APOA4, IGF1, PRAP1, AZGP1, F9, PROC, ALB, ANG	1.4162E-5
Cluster A			
Term	Protein Count	Genes	Benjamini
Platelet	34	ITGB3, THBS1, ACTB, RAP1B, PDLIM1, TUBB1, CFL1, FLNA, RSU1, CAPI, HSP90AA1, GSN, TPM4, TPM3, CAVIN2, ACTN1, MSN, PPBP, ARPC5, YWHAZ, PRDX6, PKM, MMRN1, ZYX, MYH9, TAGLN2, ALDOA, TKT, TLN1, GAPDH, PPIA, VCL, LIMS1, FERMT3	2.27E-26
Liver	66	LGALS3BP, NRPI, TFRC, ITGB3, ENO1, COMP, TUBA1C, CDH1, CFL1, HGFAC, CAPI, HSP90AA1, TPM4, TPM3, GSTO1, ACTN1, TPM1, HLA-B, YWHAZ, MYL6, PKM, MMRN1, MYH9, TAGLN2, MASP1, LCP1, TKT, TLN1, PFN1, ALDOA, S100A9, GAPDH, PPIA, S100A8, VCL, PROZ, SLC3A2, TXN, CORO1A, THBS1, MYL12A, CORO1C, PDLIM1, LDHA, PGK1, FLNA, SPP2, NCAM1, CD14, IGHA2, HSPA8, GSN, CKM, CAVIN2, F11, GSR, APOC4, MSN, PPBP, ARPC5, PRDX6, CFHR1, APOC2, ZYX, CALR, CALM1	5.788E-17
Lymphoblast	16	HSPA8, HSP90AA1, YWHAZ, ACTB, LDHA, MYL6, PKM, CFL1, PGK1, MYH9, LCP1, PFN1, CALM1, ALDOA, GAPDH, PPIA	3.022E-9
T-cell	10	CAPI, HSP90AA1, CAVIN2, PLEK, MYH9, FLNA, LCP1, ENO1, S100A9, CORO1A	1.727E-4
Skeletal muscle	14	NRPI, CKM, TPM3, ITGB3, TPM1, PARVB, MYL12A, ACTA1, CFHR1, MB, APOC2, NCAM1, PPIA, S100A8	1.727E-4
Keratinocyte	7	TPM4, TPM3, ITGB3, CALR, S100A9, CORO1A, S100A8	5.747E-4
Skin	21	ARF3, HSPA8, ACTN1, MSN, CALML3, ENO1, ARPC5, PARVB, YWHAZ, MYL12A, ACTB, TUBA1C, APOC2, PGK1, ZYX, FLNA, MYH9, CALR, RSU1, IGHA2, PPIA	0.00267
Tongue	13	GSN, TPM4, TPM3, GSTO1, CAVIN2, ACTN1, TPM1, YWHAZ, PKM, CDH1, S100A9, S100A8, LIMS1	0.00596
Fibroblast	6	LGALS3BP, TPM4, TPM3, TPM1, SLC3A2, ALDOA	0.0066
Lung	23	SRGN, LGALS3BP, ARF3, MTPN, NRPI, CAVIN2, GSR, ITGA2B, HLA-B, APOC4, SLC3A2, ENO1, CORO1C, MYL6, CFL1, PI16, PFN1, CALM1, ALDOA, GAPDH, PPIA, S100A9, FERMT3	0.048
Erythrocyte	3	GSR, PGK1, PRDX6	0.046

Supplementary table 4: Pathway enrichment of circadian-regulated plasma proteins by cluster.

This table presents Reactome pathway enrichment results for proteins exhibiting significant circadian rhythmicity, grouped into Cluster A (afternoon peak) and Cluster B (early-morning peak). Enrichment was performed using the DAVID bioinformatics resource (version 2024), referencing the REACTOME_PATHWAY database with Homo sapiens (9606) as the background. Clusters of enriched pathways were generated by DAVID's functional annotation clustering, while the annotation cluster names were manually assigned to improve interpretability and reflect shared biological themes. For each entry, the annotation cluster name, Reactome pathway ID, number of proteins involved (Count), gene symbols (Proteins), and the Benjamini–Hochberg adjusted p-values (Benjamini) are reported.

Cluster B				
Annotation Cluster	Pathway	Protein Count	Proteins	Benjamini
Insulin-like Growth Factor Regulation and Protein Metabolism	R-HSA-381426~Regulation of Insulin-like Growth Factor (IGF) transport and uptake by Insulin-like Growth Factor Binding Proteins (IGFBPs)	16	FGA, ITIH2, SERPIND1, SERPINC1, IGFBP4, SERPINA10, FN1, IGF1, F5, C3, CST3, PROC, ALB, IGFBP7, IGFBP6, APOE	1.248E-19
Insulin-like Growth Factor Regulation and Protein Metabolism	R-HSA-8957275~Post-translational protein phosphorylation	14	FGA, ITIH2, SERPIND1, SERPINC1, IGFBP4, SERPINA10, FN1, F5, C3, CST3, PROC, ALB, IGFBP7, APOE	5.774E-17
Insulin-like Growth Factor Regulation and Protein Metabolism	R-HSA-392499~Metabolism of proteins	21	FGA, APCS, ITIH2, SERPIND1, SERPINC1, IGFBP4, SERPINA10, FN1, APOA4, IGF1, LYZ, F5, C3, CST3, F9, PROC, ALB, IGFBP7, IGFBP6, APOE, B2M	1.132E-6
Insulin-like Growth Factor Regulation and Protein Metabolism	R-HSA-597592~Post-translational protein modification	15	FGA, ITIH2, SERPIND1, SERPINC1, IGFBP4, SERPINA10, FN1, F5, C3, CST3, F9, PROC, ALB, IGFBP7, APOE	3.34E-4
Coagulation Cascade and Fibrin Clot Formation	R-HSA-140877~Formation of Fibrin Clot (Clotting Cascade)	7	FGA, PROC, F9, SERPIND1, SERPINC1, SERPINA5, F5	5.88E-8
Coagulation Cascade and Fibrin Clot Formation	R-HSA-140875~Common Pathway of Fibrin Clot Formation	6	FGA, PROC, SERPIND1, SERPINC1, SERPINA5, F5	1.57E-7
Coagulation Cascade and Fibrin Clot Formation	R-HSA-140837~Intrinsic Pathway of Fibrin Clot Formation	5	PROC, F9, SERPIND1, SERPINC1, SERPINA5	1.44E-5
Coagulation Cascade and Fibrin Clot Formation	R-HSA-109582~Hemostasis	11	CFD, FGA, PROC, F9, SERPIND1, SERPINC1, ALB, FN1, IGF1, SERPINA5, F5	1.078E-4
Platelet Activation and Hemostasis	R-HSA-109582~Hemostasis	11	CFD, FGA, PROC, F9, SERPIND1, SERPINC1, ALB, FN1, IGF1, SERPINA5, F5	1.078E-4
Platelet Activation and Hemostasis	R-HSA-114608~Platelet degranulation	6	CFD, FGA, ALB, FN1, IGF1, F5	5.34E-4
Platelet Activation and Hemostasis	R-HSA-76005~Response to elevated platelet cytosolic Ca ²⁺	6	CFD, FGA, ALB, FN1, IGF1, F5	5.83E-4
Platelet Activation and Hemostasis	R-HSA-76002~Platelet activation, signaling and aggregation	6	CFD, FGA, ALB, FN1, IGF1, F5	0.00943
Lipoprotein Metabolism and Transport	R-HSA-8963899~Plasma lipoprotein remodeling	4	ALB, APOC3, APOA4, APOE	0.001912
Lipoprotein Metabolism and Transport	R-HSA-8963888~Chylomicron assembly	3	APOC3, APOA4, APOE	0.00462

Lipoprotein Metabolism and Transport	R-HSA-8963901~Chylomicron remodeling	3	APOC3, APOA4, APOE	0.00462
Lipoprotein Metabolism and Transport	R-HSA-8964058~HDL remodeling	3	ALB, APOC3, APOE	0.00462
Lipoprotein Metabolism and Transport	R-HSA-174824~Plasma lipoprotein assembly, remodeling, and clearance	4	ALB, APOC3, APOA4, APOE	0.0141
Lipoprotein Metabolism and Transport	R-HSA-8963898~Plasma lipoprotein assembly	3	APOC3, APOA4, APOE	0.01442
Cluster A				
Annotation cluster	Pathway	Count	Proteins	Benjamini
Platelet Activation and Hemostasis	R-HSA-114608~Platelet degranulation	21	SRGN, CAP1, LGALS3BP, ITGB3, ACTN1, ITGA2B, PLEK, PPBP, THBS1, MMRN1, CFL1, SPP2, FLNA, TAGLN2, PFN1, CALM1, ALDOA, TLN1, PPIA, VCL, FERMT3	2.65E-19
Platelet Activation and Hemostasis	R-HSA-76005~Response to elevated platelet cytosolic Ca ²⁺	21	SRGN, CAP1, LGALS3BP, ITGB3, ACTN1, ITGA2B, PLEK, PPBP, THBS1, MMRN1, CFL1, SPP2, FLNA, TAGLN2, PFN1, CALM1, ALDOA, TLN1, PPIA, VCL, FERMT3	2.94E-19
Platelet Activation and Hemostasis	R-HSA-76002~Platelet activation, signaling and aggregation	23	SRGN, CAP1, LGALS3BP, ITGB3, ACTN1, ITGA2B, PLEK, PPBP, YWHAZ, THBS1, RAP1B, MMRN1, CFL1, SPP2, FLNA, TAGLN2, PFN1, CALM1, ALDOA, TLN1, PPIA, VCL, FERMT3	5.39E-16
Platelet Activation and Hemostasis	R-HSA-109582~Hemostasis	29	LGALS3BP, ITGB3, ITGA2B, PLEK, SLC3A2, THBS1, ACTB, RAP1B, TUBA1C, TUBB1, CFL1, FLNA, SPP2, PF4V1, SRGN, CAP1, ACTN1, F11, PPBP, YWHAZ, MMRN1, TAGLN2, PFN1, CALM1, ALDOA, TLN1, PPIA, VCL, FERMT3	5.184E-14
Innate/General Immune Responses	R-HSA-168249~Innate Immune System	24	CAP1, HSPA8, HSP90AA1, GSN, HLA-B, PPBP, ARPC5, TXN, PRDX6, CPN2, ACTB, RAP1B, PKM, CFHR1, CFL1, MYH9, CD14, MASP1, CALM1, ALDOA, PPIA, S100A9, S100A8, VCL	2.082E-5
Innate/General Immune Responses	R-HSA-168256~Immune System	34	TXN, CPN2, ACTB, RAP1B, TUBA1C, CDH1, TUBB1, CFL1, FLNA, NCAM1, CD14, CAP1, HSPA8, HSP90AA1, GSN, GSTO1, HLA-B, MSN, PPBP, ARPC5, YWHAZ, PRDX6, PKM, CFHR1, MYH9, MASP1, LCP1, CALR, CALM1, ALDOA, S100A9, PPIA, S100A8, VCL	2.599E-5
Innate/General Immune Responses	R-HSA-6798695~Neutrophil degranulation	16	CAP1, HSPA8, HSP90AA1, GSN, HLA-B, PPBP, ARPC5, PRDX6, RAP1B, PKM, CD14, ALDOA, PPIA, S100A9, S100A8, VCL	2.71E-5
Rho GTPase Signal Transduction	R-HSA-195258~RHO GTPase Effectors	15	ARPC5, YWHAZ, MYL12A, ACTB, TUBA1C, MYL6, CDH1, TUBB1, CFL1, FLNA, MYH9, PFN1, CALM1, S100A9, S100A8	4.075E-6
Rho GTPase Signal Transduction	R-HSA-194315~Signaling by Rho GTPases	20	HSP90AA1, TPM4, TFRC, TPM3, ACTN1, ARPC5, YWHAZ, MYL12A, ACTB, TUBA1C, MYL6, CDH1, TUBB1, CFL1, FLNA, MYH9, PFN1, CALM1, S100A9, S100A8	1.4E-5
Rho GTPase Signal Transduction	R-HSA-9716542~Signaling by Rho GTPases, Miro GTPases and RHOBTB3	20	HSP90AA1, TPM4, TFRC, TPM3, ACTN1, ARPC5, YWHAZ, MYL12A, ACTB, TUBA1C, MYL6, CDH1, TUBB1, CFL1, FLNA, MYH9, PFN1, CALM1, S100A9, S100A8	1.82E-5
Rho GTPase Signal Transduction	R-HSA-162582~Signal Transduction	33	NRP1, TFRC, ITGB3, ITGA2B, THBS1, MYL12A, THBS4, ACTB, RAP1B, TUBA1C, CDH1, TUBB1, CFL1, FLNA, NCAM1, HGFAC, HSP90AA1, TPM4, TPM3, ACTN1, APOC4, PPBP, ARPC5, YWHAZ, MYL6, APOC2, MYH9, PFN1, CALM1, TLN1, S100A9, S100A8, VCL	0.00498
Cell-Matrix, Cell-Cell Adhesion, and Cytoskeletal Remodeling	R-HSA-446353~Cell-extracellular matrix interactions	7	ACTN1, ILK, FLNA, PARVB, RSU1, ACTB, LIMS1	2.01E-7
Cell-Matrix, Cell-Cell Adhesion, and Cytoskeletal Remodeling	R-HSA-446728~Cell junction organization	8	CDH1, ACTN1, ILK, FLNA, PARVB, RSU1, ACTB, LIMS1	3.31E-4
Cell-Matrix, Cell-Cell	R-HSA-446388~Regulation of cytoskeletal remodeling and cell	4	ACTN1, PARVB, RSU1, LIMS1	3.72E-4

Adhesion, and Cytoskeletal Remodeling	spreading by IPP complex components			
Cell–Matrix, Cell–Cell Adhesion, and Cytoskeletal Remodeling	R-HSA-1500931~Cell-Cell communication	8	CDH1, ACTN1, ILK, FLNA, PARVB, RSU1, ACTB, LIMS1	0.00155
Axon Guidance and Neural Development	R-HSA-422475~Axon guidance	18	CAP1, HSPA8, NRP1, HSP90AA1, ITGB3, ITGA2B, MSN, ARPC5, MYL12A, ACTB, TUBA1C, MYL6, TUBB1, CFL1, MYH9, NCAM1, PFN1, TLN1	9.02E-6
Axon Guidance and Neural Development	R-HSA-9675108~Nervous system development	18	CAP1, HSPA8, NRP1, HSP90AA1, ITGB3, ITGA2B, MSN, ARPC5, MYL12A, ACTB, TUBA1C, MYL6, TUBB1, CFL1, MYH9, NCAM1, PFN1, TLN1	1.39E-5
Axon Guidance and Neural Development	R-HSA-373760~L1CAM interactions	9	HSPA8, TUBA1C, NRP1, ITGB3, TUBB1, ITGA2B, MSN, NCAM1, ACTB	4.76E-5
Axon Guidance and Neural Development	R-HSA-1266738~Developmental Biology	20	CAP1, HSPA8, NRP1, HSP90AA1, TFRC, ITGB3, ITGA2B, MSN, ARPC5, MYL12A, ACTB, TUBA1C, MYL6, CDH1, TUBB1, CFL1, MYH9, NCAM1, PFN1, TLN1	0.02977
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-9656223~Signaling by RAF1 mutants	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	2.08E-5
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-6802946~Signaling by moderate kinase activity BRAF mutants	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	2.60E-5
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-6802949~Signaling by RAS mutants	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	2.60E-5
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-6802955~Paradoxical activation of RAF signaling by kinase inactive BRAF	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	2.60E-5
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-9649948~Signaling downstream of RAS mutants	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	2.60E-5
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-6802948~Signaling by high-kinase activity BRAF mutants	6	RAP1B, ITGB3, ITGA2B, TLN1, VCL, ACTB	1.28E-4
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-6802952~Signaling by BRAF and RAF1 fusions	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	1.64E-4
Oncogenic RAS/RAF/MEK–MAPK Signaling and Integrin Signaling	R-HSA-5674135~MAP2K and MAPK activation	6	RAP1B, ITGB3, ITGA2B, TLN1, VCL, ACTB	1.84E-4
Oncogenic RAS/RAF/MEK–MAPK	R-HSA-6802957~Oncogenic MAPK signaling	7	RAP1B, ITGB3, ITGA2B, CALM1, TLN1, VCL, ACTB	4.91E-4

Signaling and Integrin Signaling				
Oncogenic RAS/RAF/MEK-MAPK Signaling and Integrin Signaling	R-HSA-354194~GRB2:SOS provides linkage to MAPK signaling for Integrins	4	RAP1B, ITGB3, ITGA2B, TLN1	0.00219
Oncogenic RAS/RAF/MEK-MAPK Signaling and Integrin Signaling	R-HSA-372708~p130Cas linkage to MAPK signaling for integrins	4	RAP1B, ITGB3, ITGA2B, TLN1	0.00219
Oncogenic RAS/RAF/MEK-MAPK Signaling and Integrin Signaling	R-HSA-5663202~Diseases of signal transduction by growth factor receptors and second messengers	12	RAP1B, HSP90AA1, TPM4, TPM3, ITGB3, ITGA2B, MYH9, MSN, CALM1, TLN1, VCL, ACTB	0.00412
Oncogenic RAS/RAF/MEK-MAPK Signaling and Integrin Signaling	R-HSA-354192~Integrin signaling	4	RAP1B, ITGB3, ITGA2B, TLN1	0.0107
Oncogenic RAS/RAF/MEK-MAPK Signaling and Integrin Signaling	R-HSA-76009~Platelet Aggregation (Plug Formation)	4	RAP1B, ITGB3, ITGA2B, TLN1	0.0284
Oncogenic RAS/RAF/MEK-MAPK Signaling and Integrin Signaling	R-HSA-5673001~RAF/MAP kinase cascade	8	RAP1B, ITGB3, ITGA2B, NCAM1, CALM1, TLN1, VCL, ACTB	0.0284
Oncogenic RAS/RAF-MAPK Signaling and Integrin Signaling	R-HSA-5684996~MAPK1/MAPK3 signaling	8	RAP1B, ITGB3, ITGA2B, NCAM1, CALM1, TLN1, VCL, ACTB	0.0298
Interleukin-12 and JAK/STAT Cytokine Signaling	R-HSA-8950505~Gene and protein expression by JAK-STAT signaling after Interleukin-12 stimulation	6	RAP1B, GSTO1, CFL1, MSN, LCP1, PPIA	1.54E-4
Interleukin-12 and JAK/STAT Cytokine Signaling	R-HSA-9020591~Interleukin-12 signaling	6	RAP1B, GSTO1, CFL1, MSN, LCP1, PPIA	3.72E-4
Interleukin-12 and JAK/STAT Cytokine Signaling	R-HSA-447115~Interleukin-12 family signaling	6	RAP1B, GSTO1, CFL1, MSN, LCP1, PPIA	8.68E-4
Interleukin-12 and JAK/STAT Cytokine Signaling	R-HSA-1280215~Cytokine Signaling in Immune system	14	HSPA8, HSP90AA1, GSTO1, HLA-B, MSN, YWHAZ, RAP1B, TUBA1C, TUBB1, CFL1, FLNA, NCAM1, LCP1, PPIA	0.0284
Semaphorin, Rho, and Ephrin Signaling	R-HSA-373755~Semaphorin interactions	7	NRP1, HSP90AA1, MYL6, CFL1, MYH9, TLN1, MYL12A	1.49E-4
Semaphorin, Rho, and Ephrin Signaling	R-HSA-5627123~RHO GTPases activate PAKs	5	MYL6, MYH9, FLNA, CALM1, MYL12A	4.23E-4
Semaphorin, Rho, and Ephrin Signaling	R-HSA-5627117~RHO GTPases Activate ROCKs	4	MYL6, CFL1, MYH9, MYL12A	0.00492

Semaphorin, Rho, and Ephrin Signaling	R-HSA-2682334~EPH-Ephrin signaling	6	MYL6, CFL1, MYH9, ARPC5, MYL12A, ACTB	0.005996
ALK Oncogenic Pathways	R-HSA-5663202~Diseases of signal transduction by growth factor receptors and second messengers	12	RAP1B, HSP90AA1, TPM4, TPM3, ITGB3, ITGA2B, MYH9, MSN, CALM1, TLN1, VCL, ACTB	0.00412
ALK Oncogenic Pathways	R-HSA-9700206~Signaling by ALK in cancer	5	TPM4, TPM3, MYH9, MSN, VCL	0.0361
ALK Oncogenic Pathways	R-HSA-9725370~Signaling by ALK fusions and activated point mutants	5	TPM4, TPM3, MYH9, MSN, VCL	0.0361
Carbohydrate Metabolism	R-HSA-70263~Gluconeogenesis	4	PGK1, ENO1, ALDOA, GAPDH	0.00994
Carbohydrate Metabolism	R-HSA-70171~Glycolysis	5	PKM, PGK1, ENO1, ALDOA, GAPDH	0.0205
Carbohydrate Metabolism	R-HSA-70326~Glucose metabolism	5	PKM, PGK1, ENO1, ALDOA, GAPDH	0.0298
Bacterial Infection	R-HSA-9824439~Bacterial Infection Pathways	6	HSP90AA1, CDH1, PGK1, ENO1, CALM1, CORO1A	0.0023
Membrane Trafficking, Ephrin, and FcγR-Mediated Phagocytosis	R-HSA-1445148~Translocation of SLC2A4 (GLUT4) to the plasma membrane	6	TUBA1C, TUBB1, MYH9, CALM1, YWHAZ, ACTB	0.0022
Membrane Trafficking, Ephrin, and FcγR-Mediated Phagocytosis	R-HSA-2682334~EPH-Ephrin signaling	6	MYL6, CFL1, MYH9, ARPC5, MYL12A, ACTB	0.006
Membrane Trafficking, Ephrin, and FcγR-Mediated Phagocytosis	R-HSA-2029482~Regulation of actin dynamics for phagocytic cup formation	5	HSP90AA1, CFL1, MYH9, ARPC5, ACTB	0.0107
Membrane Trafficking, Ephrin, and FcγR-Mediated Phagocytosis	R-HSA-5653656~Vesicle-mediated transport	13	ARF3, HSPA8, HSP90AA1, TFRC, ARPC5, YWHAZ, ACTB, TUBA1C, TUBB1, MYH9, CALR, MASP1, CALM1	0.0273
Membrane Trafficking, Ephrin, and FcγR-Mediated Phagocytosis	R-HSA-2029480~Fcγ receptor (FCGR) dependent phagocytosis	5	HSP90AA1, CFL1, MYH9, ARPC5, ACTB	0.0305
L1CAM and Integrin Signaling	R-HSA-445144~Signal transduction by L1	4	NRP1, ITGB3, ITGA2B, NCAM1	0.0055
L1CAM and Integrin Signaling	R-HSA-216083~Integrin cell surface interactions	5	COMP, CDH1, ITGB3, ITGA2B, THBS1	0.0298
Rho GTPases, GLUT4 Translocation, and L1 Recycling	R-HSA-5626467~RHO GTPases activate IQGAPs	5	TUBA1C, CDH1, TUBB1, CALM1, ACTB	0.00121
Rho GTPases, GLUT4 Translocation, and L1 Recycling	R-HSA-1445148~Translocation of SLC2A4 (GLUT4) to the plasma membrane	6	TUBA1C, TUBB1, MYH9, CALM1, YWHAZ, ACTB	0.0022
Rho GTPases, GLUT4 Translocation, and L1 Recycling	R-HSA-437239~Recycling pathway of L1	4	TUBA1C, TUBB1, MSN, ACTB	0.040
ER-Phagosome Cross-Presentation	R-HSA-1236974~ER-Phagosome pathway	5	HLA-B, CD14, CALR, S100A9, S100A8	0.024
ER-Phagosome Cross-Presentation	R-HSA-1236975~Antigen processing-Cross presentation	5	HLA-B, CD14, CALR, S100A9, S100A8	0.037

VEGF Signaling	R-HSA-194138~Signaling by VEGF	5	NRP1, HSP90AA1, ITGB3, CALM1, ACTB	0.0581
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Supplementary table 5: List of significantly circadian-regulated plasma proteins identified in human plasma.

This table presents all proteins (n = 138) that exhibited significant circadian rhythmicity (adjusted $p < 0.05$) across the study cohort, based on CosinorPy rhythmometry and Benjamini–Hochberg correction. Each row includes: The UniProt entry ID, the corresponding protein name, associated gene symbols (Gene Names), and the primary gene name used for annotation and downstream analyses. These proteins represent the complete set of circadian-regulated plasma proteins used in cluster generation, acrophase distribution analysis, and enrichment analyses described throughout the manuscript. Protein names and gene annotations were retrieved from the UniProtKB database.

UniProt ID	Protein names	Gene Names	Primary Gene Name
P61769	Beta-2-microglobulin [Cleaved into: Beta-2-microglobulin form pI 5.3]	B2M CDABP0092 HDCMA22P	B2M
P00746	Complement factor D (EC 3.4.21.46) (Adipsin) (C3 convertase activator) (Properdin factor D)	CFD DF PFD	CFD
P06727	Apolipoprotein A-IV (Apo-AIV) (ApoA-IV) (Apolipoprotein A4)	APOA4	APOA4
P06702	Protein S100-A9 (Calgranulin-B) (Calprotectin L1H subunit) (Leukocyte L1 complex heavy chain) (Migration inhibitory factor-related protein 14) (MRP-14) (p14) (S100 calcium-binding protein A9)	S100A9 CAGB CFAG MRP14	S100A9
P41222	Prostaglandin-H2 D-isomerase (EC 5.3.99.2) (Beta-trace protein) (Cerebrin-28) (Glutathione-independent PGD synthase) (Lipocalin-type prostaglandin-D synthase) (L-PGDS) (Prostaglandin-D2 synthase) (PGD2 synthase) (PGDS) (PGDS2)	PTGDS PDS	PTGDS
P49747	Cartilage oligomeric matrix protein (COMP) (Thrombospondin-5) (TSP5)	COMP	COMP
Q9Y490	Talin-1	TLN1 KIAA1027 TLN	TLN1
Q13103	Secreted phosphoprotein 24 (Spp-24) (Secreted phosphoprotein 2)	SPP2 SPP24	SPP2
P07737	Profilin-1 (Epididymis tissue protein Li 184a) (Profilin I)	PFN1	PFN1
P18206	Vinculin (Metavinculin) (MV)	VCL	VCL
P24592	Insulin-like growth factor-binding protein 6 (IBP-6) (IGF-binding protein 6) (IGFBP-6)	IGFBP6 IBP6	IGFBP6
P60709	Actin, cytoplasmic 1 (EC 3.6.4.-) (Beta-actin) [Cleaved into: Actin, cytoplasmic 1, N-terminally processed]	ACTB	ACTB
P06396	Gelsolin (AGEL) (Actin-depolymerizing factor) (ADF) (Brevin)	GSN	GSN
P23528	Cofilin-1 (18 kDa phosphoprotein) (p18) (Cofilin, non-muscle isoform)	CFL1 CFL	CFL1
P21333	Filamin-A (FLN-A) (Actin-binding protein 280) (ABP-280) (Alpha-filamin) (Endothelial actin-binding protein) (Filamin-1) (Non-muscle filamin)	FLNA FLN FLN1	FLNA
P05109	Protein S100-A8 (Calgranulin-A) (Calprotectin L1L subunit) (Cystic fibrosis antigen) (CFAG) (Leukocyte L1 complex light chain) (Migration inhibitory factor-related protein 8) (MRP-8) (p8) (S100 calcium-binding protein A8) (Urinary stone protein band A)	S100A8 CAGA CFAG MRP8	S100A8
Q86UX7	Fermitin family homolog 3 (Kindlin-3) (MIG2-like protein) (Unc-112-related protein 2)	FERMT3 KIND3 MIG2B URP2	FERMT3
P01034	Cystatin-C (Cystatin-3) (Gamma-trace) (Neuroendocrine basic polypeptide) (Post-gamma-globulin)	CST3	CST3
P02775	Platelet basic protein (PBP) (C-X-C motif chemokine 7) (Leukocyte-derived growth factor) (LDGF) (Macrophage-derived growth factor) (MDGF) (Small-inducible cytokine B7) [Cleaved into: Connective tissue-activating peptide III (CTAP-III) (LA-PF4) (Low-affinity platelet factor IV); TC-2; Connective tissue-activating peptide III(1-81) (CTAP-III(1-81)); Beta-thromboglobulin (Beta-TG); Neutrophil-activating peptide 2(74) (NAP-2(74)); Neutrophil-activating peptide 2(73) (NAP-2(73)); Neutrophil-activating peptide 2 (NAP-2); TC-1; Neutrophil-activating peptide 2(1-66) (NAP-2(1-66)); Neutrophil-activating peptide 2(1-63) (NAP-2(1-63))]	PPBP CTAP3 CXCL7 SCYB7 TGB1 THBG1	PPBP
P12814	Alpha-actinin-1 (Alpha-actinin cytoskeletal isoform) (F-actin cross-linking protein) (Non-muscle alpha-actinin-1)	ACTN1	ACTN1
P55056	Apolipoprotein C-IV (Apo-CIV) (ApoC-IV) (Apolipoprotein C4)	APOC4	APOC4
P35579	Myosin-9 (Cellular myosin heavy chain, type A) (Myosin heavy chain 9) (Myosin heavy chain, non-muscle IIa) (Non-muscle	MYH9	MYH9

	myosin heavy chain A) (NMMHC-A) (Non-muscle myosin heavy chain IIa) (NMMHC II-a) (NMMHC-IIA)		
P08567	Pleckstrin (Platelet 47 kDa protein) (p47)	PLEK P47	PLEK
P00736	Complement C1r subcomponent (EC 3.4.21.41) (Complement component 1 subcomponent r) [Cleaved into: Complement C1r subcomponent heavy chain; Complement C1r subcomponent light chain]	C1R	C1R
P02743	Serum amyloid P-component (SAP) (9.5S alpha-1-glycoprotein) [Cleaved into: Serum amyloid P-component(1-203)]	APCS PTX2	APCS
O00151	PDZ and LIM domain protein 1 (C-terminal LIM domain protein 1) (Elfin) (LIM domain protein CLP-36)	PDLIM1 CLIM1 CLP36	PDLIM1
P06732	Creatine kinase M-type (EC 2.7.3.2) (Creatine kinase M chain) (Creatine phosphokinase M-type) (CPK-M) (M-CK)	CKM CKMM	CKM
P67936	Tropomyosin alpha-4 chain (TM30p1) (Tropomyosin-4)	TPM4	TPM4
P61626	Lysozyme C (EC 3.2.1.17) (1,4-beta-N-acetylmuramidase C)	LYZ LYM	LYZ
P37802	Transgelin-2 (Epididymis tissue protein Li 7c) (SM22-alpha homolog)	TAGLN2 KIAA0120 CDABP0035	TAGLN2
P63104	14-3-3 protein zeta/delta (Protein kinase C inhibitor protein 1) (KCIP-1)	YWHAZ	YWHAZ
P04406	Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) (EC 1.2.1.12) (Peptidyl-cysteine S-nitrosylase GAPDH) (EC 2.6.99.-)	GAPDH GAPD CDABP0047 OK/SW-cl.12	GAPDH
P68133	Actin, alpha skeletal muscle (EC 3.6.4.-) (Alpha-actin-1) [Cleaved into: Actin, alpha skeletal muscle, intermediate form]	ACTA1 ACTA	ACTA1
P02760	Protein AMBP (Protein HC) [Cleaved into: Alpha-1-microglobulin (EC 1.6.2.-) (Alpha-1 microglycoprotein) (Complex-forming glycoprotein heterogeneous in charge); Inter-alpha-trypsin inhibitor light chain (ITI-LC) (Bikunin) (EDC1) (HI-30) (Uronic-acid-rich protein); Trypstatin]	AMBP HCP ITIL	AMBP
Q9H4B7	Tubulin beta-1 chain	TUBB1	TUBB1
P60660	Myosin light polypeptide 6 (17 kDa myosin light chain) (LC17) (Myosin light chain 3) (MLC-3) (Myosin light chain alkali 3) (Myosin light chain A3) (Smooth muscle and nonmuscle myosin light chain alkali 6)	MYL6	MYL6
Q15942	Zyxin (Zyxin-2)	ZYX	ZYX
P10124	Serglycin (Hematopoietic proteoglycan core protein) (Platelet proteoglycan core protein) (P.PG) (Secretory granule proteoglycan core protein)	SRGN PRG PRG1	SRGN
P35443	Thrombospondin-4	THBS4 TSP4	THBS4
Q13418	Scaffold protein ILK (ILK-1) (ILK-2) (Inactive integrin-linked kinase) (p59ILK)	ILK ILK1 ILK2	ILK
P61224	Ras-related protein Rap-1b (EC 3.6.5.2) (GTP-binding protein smg p21B)	RAP1B OK/SW-cl.11	RAP1B
Q15113	Procollagen C-endopeptidase enhancer 1 (Procollagen COOH-terminal proteinase enhancer 1) (PCPE-1) (Procollagen C-proteinase enhancer 1) (Type 1 procollagen C-proteinase enhancer protein) (Type I procollagen COOH-terminal proteinase enhancer)	PCOLCE PCPE1	PCOLCE
Q9BQE3	Tubulin alpha-1C chain (EC 3.6.5.-) (Alpha-tubulin 6) (Tubulin alpha-6 chain) [Cleaved into: Detyrosinated tubulin alpha-1C chain]	TUBA1C TUBA6	TUBA1C
P08514	Integrin alpha-IIb (GPIIb) (GPIIb) (Platelet membrane glycoprotein IIb) (CD antigen CD41) [Cleaved into: Integrin alpha-IIb heavy chain; Integrin alpha-IIb light chain, form 1; Integrin alpha-IIb light chain, form 2]	ITGA2B GP2B ITGAB	ITGA2B
P62937	Peptidyl-prolyl cis-trans isomerase A (PPIase A) (EC 5.2.1.8) (Cyclophilin A) (Cyclosporin A-binding protein) (Rotamase A) [Cleaved into: Peptidyl-prolyl cis-trans isomerase A, N-terminally processed]	PPIA CYPA	PPIA
P07996	Thrombospondin-1 (Glycoprotein G)	THBS1 TSP TSP1	THBS1
P27482	Calmodulin-like protein 3 (CaM-like protein) (CLP) (Calmodulin-related protein NB-1)	CALML3	CALML3
P10720	Platelet factor 4 variant (C-X-C motif chemokine 4 variant) (CXCL4L1) (PF4alt) (PF4var1) [Cleaved into: Platelet factor 4 variant(4-74); Platelet factor 4 variant(5-74); Platelet factor 4 variant(6-74)]	PF4V1 CXCL4V1 SCYB4V1	PF4V1
P61204	ADP-ribosylation factor 3	ARF3	ARF3
O95810	Caveolae-associated protein 2 (Cavin-2) (PS-p68) (Phosphatidylserine-binding protein) (Serum deprivation-response protein)	CAVIN2 SDPR	CAVIN2

P26038	Moesin (Membrane-organizing extension spike protein)	MSN	MSN
Q01518	Adenylyl cyclase-associated protein 1 (CAP 1)	CAP1 CAP	CAP1
P36955	Pigment epithelium-derived factor (PEDF) (Cell proliferation-inducing gene 35 protein) (EPC-1) (Serp1 F1)	SERPINF1 PEDF PIG35	SERPINF1
P04075	Fructose-bisphosphate aldolase A (EC 4.1.2.13) (Lung cancer antigen NY-LU-1) (Muscle-type aldolase)	ALDOA ALDA	ALDOA
P14618	Pyruvate kinase PKM (EC 2.7.1.40) (Cytosolic thyroid hormone-binding protein) (CTHBP) (Opa-interacting protein 3) (OIP-3) (Pyruvate kinase 2/3) (Pyruvate kinase muscle isozyme) (Threonine-protein kinase PKM2) (EC 2.7.11.1) (Thyroid hormone-binding protein 1) (THBP1) (Tumor M2-PK) (Tyrosine-protein kinase PKM2) (EC 2.7.10.2) (p58)	PKM OIP3 PK2 PK3 PKM2	PKM
P06753	Tropomyosin alpha-3 chain (Gamma-tropomyosin) (Tropomyosin-3) (Tropomyosin-5) (hTM5)	TPM3	TPM3
P02655	Apolipoprotein C-II (Apo-CII) (ApoC-II) (Apolipoprotein C2) [Cleaved into: Proapolipoprotein C-II (ProapoC-II)]	APOC2 APC2	APOC2
Q96NZ9	Proline-rich acidic protein 1 (Epididymis tissue protein Li 178) (Uterine-specific proline-rich acidic protein)	PRAP1 UPA UNQ608/PRO1195	PRAP1
Q96S96	Phosphatidylethanolamine-binding protein 4 (PEBP-4) (hPEBP4) (Protein cousin-of-RKIP 1)	PEBP4 CORK1 UNQ1933/PRO4408	PEBP4
P29401	Transketolase (TK) (EC 2.2.1.1)	TKT	TKT
Q9NPR2	Semaphorin-4B (Semaphorin-C)	SEMA4B KIAA1745 SEMAG UNQ749/PRO1480	SEMA4B
P05106	Integrin beta-3 (Platelet membrane glycoprotein IIIa) (GPIIIa) (CD antigen CD61)	ITGB3 GP3A	ITGB3
P02656	Apolipoprotein C-III (Apo-CIII) (ApoC-III) (Apolipoprotein C3)	APOC3	APOC3
P0DP23	Calmodulin-1	CALM1 CALM CAM CAM1	CALM1
P13796	Plastin-2 (L-plastin) (LC64P) (Lymphocyte cytosolic protein 1) (LCP-1)	LCP1 PLS2	LCP1
P12830	Cadherin-1 (CAM 120/80) (Epithelial cadherin) (E-cadherin) (Uvomorulin) (CD antigen CD324) [Cleaved into: E-Cad/CTF1; E-Cad/CTF2; E-Cad/CTF3]	CDH1 CDHE UVO	CDH1
O15511	Actin-related protein 2/3 complex subunit 5 (Arp2/3 complex 16 kDa subunit) (p16-ARC)	ARPC5 ARC16	ARPC5
P04070	Vitamin K-dependent protein C (EC 3.4.21.69) (Anticoagulant protein C) (Autoprothrombin IIA) (Blood coagulation factor XIV) [Cleaved into: Vitamin K-dependent protein C light chain; Vitamin K-dependent protein C heavy chain; Activation peptide]	PROC	PROC
Q16627	C-C motif chemokine 14 (Chemokine CC-1/CC-3) (HCC-1/HCC-3) (HCC-1(1-74)) (NCC-2) (Small-inducible cytokine A14) [Cleaved into: HCC-1(3-74); HCC-1(4-74); HCC-1(9-74)]	CCL14 NCC2 SCYA14	CCL14
Q15404	Ras suppressor protein 1 (RSP-1) (Rsu-1)	RSU1 RSP1	RSU1
P22692	Insulin-like growth factor-binding protein 4 (IBP-4) (IGF-binding protein 4) (IGFBP-4)	IGFBP4 IBP4	IGFBP4
P59190	Ras-related protein Rab-15	RAB15	RAB15
Q9NQ79	Cartilage acidic protein 1 (68 kDa chondrocyte-expressed protein) (CEP-68) (ASPIC)	CRTAC1 ASPIC1 CEP68	CRTAC1
P11142	Heat shock cognate 71 kDa protein (EC 3.6.4.10) (Heat shock 70 kDa protein 8) (Heat shock protein family A member 8) (Lipopolysaccharide-associated protein 1) (LAP-1) (LPS-associated protein 1)	HSPA8 HSC70 HSP73 HSPA10	HSPA8
P01889	HLA class I histocompatibility antigen, B alpha chain (Human leukocyte antigen B) (HLA-B)	HLA-B HLAB	HLA-B
P02144	Myoglobin (Nitrite reductase MB) (EC 1.7.-.-) (Pseudoperoxidase MB) (EC 1.11.1.-.-)	MB	MB
P48059	LIM and senescent cell antigen-like-containing domain protein 1 (Particularly interesting new Cys-His protein 1) (PINCH-1) (Renal carcinoma antigen NY-REN-48)	LIMS1 PINCH PINCH1	LIMS1
P01717	Immunoglobulin lambda variable 3-25 (Ig lambda chain V-IV region H1)	IGLV3-25	IGLV3-25
Q9HBI1	Beta-parvin (Affixin)	PARVB CGI-56	PARVB
P08571	Monocyte differentiation antigen CD14 (My23 antigen) (Myeloid cell-specific leucine-rich glycoprotein) (CD antigen CD14) [Cleaved into: Monocyte differentiation antigen CD14, urinary form; Monocyte differentiation antigen CD14, membrane-bound form]	CD14	CD14

P00338	L-lactate dehydrogenase A chain (LDH-A) (EC 1.1.1.27) (Cell proliferation-inducing gene 19 protein) (LDH muscle subunit) (LDH-M) (Renal carcinoma antigen NY-REN-59)	LDHA PIG19	LDHA
P01877	Immunoglobulin heavy constant alpha 2 (Ig alpha-2 chain C region) (Ig alpha-2 chain C region BUT) (Ig alpha-2 chain C region LAN)	IGHA2	IGHA2
P05154	Plasma serine protease inhibitor (Acrosomal serine protease inhibitor) (Plasminogen activator inhibitor 3) (PAI-3) (PAI3) (Protein C inhibitor) (PCI) (Serpina5)	SERPINA5 PCI PLANH3 PROCI	SERPINA5
P06733	Alpha-enolase (EC 4.2.1.11) (2-phospho-D-glycerate hydro-lyase) (C-myc promoter-binding protein) (Enolase 1) (MBP-1) (MPB-1) (Non-neural enolase) (NNE) (Phosphopyruvate hydratase) (Plasminogen-binding protein)	ENO1 ENO1L1 MBPB1 MPB1	ENO1
P19105	Myosin regulatory light chain 12A (Epididymis secretory protein Li 24) (HEL-S-24) (MLC-2B) (Myosin RLC) (Myosin regulatory light chain 2, nonsarcomeric) (Myosin regulatory light chain MRLC3)	MYL12A MLCB MRLC3 RLC	MYL12A
P07900	Heat shock protein HSP 90-alpha (EC 3.6.4.10) (Heat shock 86 kDa) (HSP 86) (HSP86) (Heat shock protein family C member 1) (Lipopolysaccharide-associated protein 2) (LAP-2) (LPS-associated protein 2) (Renal carcinoma antigen NY-REN-38)	HSP90AA1 HSP90A HSPC1 HSPCA	HSP90AA1
Q15828	Cystatin-M (Cystatin-6) (Cystatin-E)	CST6	CST6
Q03591	Complement factor H-related protein 1 (FHR-1) (H factor-like protein 1) (FHL-1) (H-factor-like 1) (H36)	CFHR1 CFHL CFHL1 CFHL1P CFHR1P FHR1 HFL1 HFL2	CFHR1
P31146	Coronin-1A (Coronin-like protein A) (Clipin-A) (Coronin-like protein p57) (Tryptophan aspartate-containing coat protein) (TACO)	CORO1A CORO1	CORO1A
P01714	Immunoglobulin lambda variable 3-19 (Ig lambda chain V-III region SH)	IGLV3-19	IGLV3-19
P02649	Apolipoprotein E (Apo-E)	APOE	APOE
B9A064	Immunoglobulin lambda-like polypeptide 5 (G lambda-1) (Germline immunoglobulin lambda 1)	IGLL5	IGLL5
P09493	Tropomyosin alpha-1 chain (Alpha-tropomyosin) (Tropomyosin-1)	TPM1 C15orf13 TMSA	TPM1
P03950	Angiogenin (EC 3.1.27.-) (Ribonuclease 5) (RNase 5)	ANG RNASE5	ANG
A0A075B6S2	Immunoglobulin kappa variable 2D-29	IGKV2D-29	IGKV2D-29
P25311	Zinc-alpha-2-glycoprotein (Zn-alpha-2-GP) (Zn-alpha-2-glycoprotein)	AZGP1 ZAG ZNGP1	AZGP1
P27797	Calreticulin (CRP55) (Calregulin) (Endoplasmic reticulum resident protein 60) (ERp60) (HACBP) (grp60)	CALR CRTC	CALR
P00390	Glutathione reductase, mitochondrial (GR) (GRase) (EC 1.8.1.7)	GSR GLUR GRD1	GSR
P13591	Neural cell adhesion molecule 1 (N-CAM-1) (NCAM-1) (CD antigen CD56)	NCAM1 NCAM	NCAM1
P01706	Immunoglobulin lambda variable 2-11 (Ig gamma lambda chain V-II region DOT) (Ig lambda chain V-II region BOH) (Ig lambda chain V-II region BUR) (Ig lambda chain V-II region NIG-58) (Ig lambda chain V-II region TRO) (Ig lambda chain V-II region WIN)	IGLV2-11	IGLV2-11
P30041	Peroxiredoxin-6 (EC 1.11.1.27) (1-Cys peroxiredoxin) (1-Cys PRX) (24 kDa protein) (Acidic calcium-independent phospholipase A2) (aiPLA2) (EC 3.1.1.4) (Antioxidant protein 2) (Glutathione-dependent peroxiredoxin) (Liver 2D page spot 40) (Lysophosphatidylcholine acyltransferase 5) (LPC acyltransferase 5) (LPCAT-5) (Lyso-PC acyltransferase 5) (EC 2.3.1.23) (Non-selenium glutathione peroxidase) (NSGPx) (Red blood cells page spot 12)	PRDX6 AOP2 KIAA0106	PRDX6
P04746	Pancreatic alpha-amylase (PA) (EC 3.2.1.1) (1,4-alpha-D-glucan glucanohydrolase)	AMY2A	AMY2A
P08185	Corticosteroid-binding globulin (CBG) (Serpina6) (Transcortin)	SERPINA6 CBG	SERPINA6
Q04756	Hepatocyte growth factor activator (HGF activator) (HGFA) (EC 3.4.21.-) [Cleaved into: Hepatocyte growth factor activator short chain; Hepatocyte growth factor activator long chain]	HGFAC	HGFAC
Q16270	Insulin-like growth factor-binding protein 7 (IBP-7) (IGF-binding protein 7) (IGFBP-7) (IGFBP-rP1) (MAC25 protein) (PGI2-stimulating factor) (Prostacyclin-stimulating factor) (Tumor-derived adhesion factor) (TAF)	IGFBP7 MAC25 PSF	IGFBP7
P01024	Complement C3 (C3 and PZP-like alpha-2-macroglobulin domain-containing protein 1) [Cleaved into: Complement C3 beta chain; C3-beta-c (C3bc); Complement C3 alpha chain; C3a anaphylatoxin; Acylation stimulating protein (ASP) (C3adesArg);	C3 CPAMD1	C3

	Complement C3b alpha' chain; Complement C3c alpha' chain fragment 1; Complement C3dg fragment; Complement C3g fragment; Complement C3d fragment; Complement C3f fragment; Complement C3e alpha' chain fragment 2]		
Q9UK55	Protein Z-dependent protease inhibitor (PZ-dependent protease inhibitor) (PZI) (Serpina A10)	SERPINA10 ZPI UNQ707/PRO1358	SERPINA10
P08195	Amino acid transporter heavy chain SLC3A2 (4F2 cell-surface antigen heavy chain) (4F2hc) (4F2 heavy chain antigen) (Lymphocyte activation antigen 4F2 large subunit) (Solute carrier family 3 member 2) (CD antigen CD98)	SLC3A2 MDU1	SLC3A2
Q9ULV4	Coronin-1C (Coronin-3) (hCRNN4)	CORO1C CRN2 CRNN4	CORO1C
P01008	Antithrombin-III (ATIII) (Serpina C1)	SERPINC1 AT3 PRO0309	SERPINC1
P22792	Carboxypeptidase N subunit 2 (Carboxypeptidase N 83 kDa chain) (Carboxypeptidase N large subunit) (Carboxypeptidase N polypeptide 2) (Carboxypeptidase N regulatory subunit)	CPN2 ACBP	CPN2
Q6UXB8	Peptidase inhibitor 16 (PI-16) (Cysteine-rich secretory protein 9) (CRISP-9) (PSP94-binding protein) (CD antigen CD364)	PI16 CRISP9 PSPBP PSEC0164 UNQ289/PRO328	PI16
P05546	Heparin cofactor 2 (Heparin cofactor II) (HC-II) (Protease inhibitor leuserpin-2) (HLS2) (Serpina D1)	SERPIND1 HCF2	SERPIND1
P02751	Fibronectin (FN) (Cold-insoluble globulin) (CIG) [Cleaved into: Anastellin; Ugl-Y1; Ugl-Y2; Ugl-Y3]	FN1 FN	FN1
P22891	Vitamin K-dependent protein Z	PROZ	PROZ
P48740	Mannan-binding lectin serine protease 1 (EC 3.4.21.-) (Complement factor MASP-3) (Complement-activating component of Ra-reactive factor) (Mannose-binding lectin-associated serine protease 1) (MASP-1) (Mannose-binding protein-associated serine protease) (Ra-reactive factor serine protease p100) (RaRF) (Serine protease 5) [Cleaved into: Mannan-binding lectin serine protease 1 heavy chain; Mannan-binding lectin serine protease 1 light chain]	MASP1 CRARF CRARF1 PRSS5	MASP1
O14786	Neuropilin-1 (Vascular endothelial cell growth factor 165 receptor) (CD antigen CD304)	NRP1 NRP VEGF165R	NRP1
P58546	Myotrophin (Protein V-1)	MTPN	MTPN
A0A0C4DH35	Probable non-functional immunoglobulin heavy variable 3-35	IGHV3-35	IGHV3-35
A0A075B6P5	Immunoglobulin kappa variable 2-28	IGKV2-28	IGKV2-28
P78417	Glutathione S-transferase omega-1 (GSTO-1) (EC 2.5.1.18) (Glutathione S-transferase omega 1-1) (GSTO 1-1) (Glutathione-dependent dehydroascorbate reductase) (EC 1.8.5.1) (Monomethylarsonic acid reductase) (MMA(V) reductase) (EC 1.20.4.2) (S-(Phenacyl)glutathione reductase) (SPG-R)	GSTO1 GSTTLP28	GSTO1
P00558	Phosphoglycerate kinase 1 (EC 2.7.11.1) (EC 2.7.2.3) (Cell migration-inducing gene 10 protein) (Primer recognition protein 2) (PRP 2)	PGK1 PGKA MIG10 OK/SW-cl.110	PGK1
P03951	Coagulation factor XI (FXI) (EC 3.4.21.27) (Plasma thromboplastin antecedent) (PTA) [Cleaved into: Coagulation factor XIa heavy chain; Coagulation factor XIa light chain]	F11	F11
A2NJV5	Immunoglobulin kappa variable 2-29	IGKV2-29	IGKV2-29
P02671	Fibrinogen alpha chain [Cleaved into: Fibrinopeptide A; Fibrinogen alpha chain]	FGA	FGA
P34096	Ribonuclease 4 (RNase 4) (EC 3.1.27.-)	RNASE4 RNS4	RNASE4
P01715	Immunoglobulin lambda variable 3-1 (Ig lambda chain V-IV region Bau) (Ig lambda chain V-IV region MOL) (Ig lambda chain V-IV region X)	IGLV3-1	IGLV3-1
Q9Y6R7	IgGFC-binding protein (Fcgamma-binding protein antigen) (FcgammaBP)	FCGBP	FCGBP
P08493	Matrix Gla protein (MGP) (Cell growth-inhibiting gene 36 protein)	MGP MGLAP GIG36	MGP
P05019	Insulin-like growth factor 1 (Insulin-like growth factor I) (IGF-I) (Mechano growth factor) (MGF) (Somatomedin-C)	IGF1 IBP1 IGF-1	IGF1
P12259	Coagulation factor V (Activated protein C cofactor) (Proaccelerin, labile factor) [Cleaved into: Coagulation factor V heavy chain; Coagulation factor V light chain]	F5	F5
P02786	Transferrin receptor protein 1 (TR) (TfR) (TfRf) (T9) (p90) (CD antigen CD71) [Cleaved into: Transferrin receptor protein 1, serum form (sTfR)]	TFRC	TFRC

P00740	Coagulation factor IX (EC 3.4.21.22) (Christmas factor) (Plasma thromboplastin component) (PTC) [Cleaved into: Coagulation factor IXa light chain; Coagulation factor IXa heavy chain]	F9	F9
Q13201	Multimerin-1 (EMILIN-4) (Elastin microfibril interface located protein 4) (Elastin microfibril interfacer 4) (Endothelial cell multimerin) [Cleaved into: Platelet glycoprotein Ia*; 155 kDa platelet multimerin (p-155) (p155)]	MMRN1 ECM EMILIN4 GPIA* MMRN	MMRN1
Q08380	Galectin-3-binding protein (Basement membrane autoantigen p105) (Lectin galactoside-binding soluble 3-binding protein) (Mac-2-binding protein) (MAC2BP) (Mac-2 BP) (Tumor-associated antigen 90K)	LGALS3BP M2BP	LGALS3BP
P19823	Inter-alpha-trypsin inhibitor heavy chain H2 (ITI heavy chain H2) (ITI-HC2) (Inter-alpha-inhibitor heavy chain 2) (Inter-alpha-trypsin inhibitor complex component II) (Serum-derived hyaluronan-associated protein) (SHAP)	ITIH2 IGHEP2	ITIH2
P10599	Thioredoxin (Trx) (ATL-derived factor) (ADF) (Surface-associated sulphydryl protein) (SASP) (allergen Hom s Trx)	TXN TRDX TRX TRX1	TXN
P02768	Albumin	ALB GIG20 GIG42 PRO0903 PRO1708 PRO2044 PRO2619 PRO2675 UNQ696/PRO1341	ALB