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Supplementary Material

Proteomic Dysregulations of Infertile PCOS vs. Non PCOS Females via Label-Free Quantitative Mass Spectrometry

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Supplementary Table I. List of all proteins identified by MaxQuant.

Majority protein IDs	Gene names	Protein names
A0A0G2JRN3	*SERPINA1*	Alpha-1 antitrypsin
P02766	*TTR*	Transthyretin
P05155	*SERPING1*	Plasma protease C1 inhibitor
E7ET33	*ITIH3*	Inter-alpha-trypsin inhibitor heavy chain H3
P08519	*LPA*	Apolipoprotein(a)
P01011	*SERPINA3*	Alpha-1-antichymotrypsin
P35542	*SAA2-SAA4*	Serum amyloid A-4 protein
P01857	*IGHG1*	Ig gamma-1 chain C region
P01880-2	*IGHD*	Ig delta chain C region
P02746	*C1QB*	Complement C1q subcomponent subunit B
P0CG04	*IGLC1*	Ig lambda-1 chain C regions
P00738	*HP*	Haptoglobin
P04278	*SHBG*	Sex hormone-binding globulin
P08603	*CFH*	Complement factor H
P00751	*CFB*	Complement factor B

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Majority protein IDs	Gene names	Protein names
P06681	*C2*	Complement C2
A0A0G2JMB2	*IGHA2*	Immunoglobulin heavy constant alpha 2
P08697	*SERPINF2*	Alpha-2-antiplasmin
A0A140TA49	*C4A*	Complement C4-A
A0A0G2JRQ6		Ig-like domain-containing protein
P68871	*HBB*	Hemoglobin subunit beta
P07225	*PROS1*	Vitamin K-dependent protein S
P49908	*SEPP1*	Selenoprotein P
P01860	*IGHG3*	Ig gamma-3 chain C region
P01876	*IGHA1*	Ig alpha-1 chain C region
P01859	*IGHG2*	Ig gamma-2 chain C region
P01861	*IGHG4*	Ig gamma-4 chain C region
P05156	*CFI*	Complement factor I
P68133	*ACTA1*	Actin
P69905	*HBA1*	Hemoglobin subunit alpha
P05160	*F13B*	Coagulation factor XIII B chain
P00736	*C1R*	Complement C1r subcomponent
P07360	*C8G*	Complement component C8 gamma chain
A0M8Q6	*IGLC7*	Ig lambda-7 chain C region
P04114	*APOB*	Apolipoprotein B-100
P01019	*AGT*	Angiotensin 1-4
P02775	*PPBP*	Platelet basic protein
P00747	*PLG*	Plasminogen
P04003	*C4BPA*	C4b-binding protein alpha chain
P17936-2	*IGFBP3*	Insulin-like growth factor-binding protein 3
P02656	*APOC3*	Apolipoprotein C-III
O14791	*APOL1*	Apolipoprotein L1
P23142	*FBLN1*	Fibulin-1
B1AKG0	*CFHR1*	Complement factor H-related protein 1
P10643	*C7*	Complement component C7
P09871	*C1S*	Complement C1s subcomponent
B7ZKJ8	*ITIH4*	inter-alpha-trypsin inhibitor heavy chain H4
P03952	*KLKB1*	Plasma kallikrein
P27918	*CFP*	Properdin
P01591	*IGJ*	Immunoglobulin J chain
P13671	*C6*	Complement component C6
P02679	*FGG*	Fibrinogen gamma chain
P25311	*AZGP1*	Zinc-alpha-2-glycoprotein
P05090	*APOD*	Apolipoprotein D
P00734	*F2*	Prothrombin
P02765	*AHSG*	Alpha-2-HS-glycoprotein

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Majority protein IDs	Gene names	Protein names
Q96PD5	*PGLYRP2*	N-acetylmuramoyl-L-alanine amidase
P05546	*SERPIND1*	Heparin cofactor 2
P00450	*CP*	Ceruloplasmin
P02760	*AMBP*	Alpha-1-microglobulin
P02671	*FGA*	Fibrinogen alpha chain
P02675	*FGB*	Fibrinogen beta chain
P02647	*APOA1*	Apolipoprotein A-I
P02749	*APOH*	Beta-2-glycoprotein 1
P01008	*SERPINC1*	Antithrombin-III
P02649	*APOE*	Apolipoprotein E
P51884	*LUM*	Lumican
P19827	*ITIH1*	Inter-alpha-trypsin inhibitor heavy chain H1
P01031	*C5*	Complement C5
P02787	*TF*	Serotransferrin
P15169	*CPN1*	Carboxypeptidase N catalytic chain
P04217	*A1BG*	Alpha-1B-glycoprotein
P01024	*C3*	Complement C3
P06727	*APOA4*	Apolipoprotein A-IV
P02748	*C9*	Complement component C9
P04004	*VTN*	Vitronectin
P36955	*SERPINF1*	Pigment epithelium-derived factor
P19823	*ITIH2*	Inter-alpha-trypsin inhibitor heavy chain H2
P05543	*SERPINA7*	Thyroxine-binding globulin
P43652	*AFM*	Afamin
P02774	*GC*	Vitamin D-binding protein
P10909	*CLU*	Clusterin
P0DJI8	*SAA1*	Serum amyloid A protein
P20742	*PZP*	Pregnancy zone protein
P07358	*C8B*	Complement component C8 beta chain
P01023	*A2M*	Alpha-2-macroglobulin
P27169	*PON1*	Serum paraoxonase/arylesterase 1
P08185	*SERPINA6*	Corticosteroid-binding globulin
P02751	*FN1*	Fibronectin
Q08380	*LGALS3BP*	Galectin-3-binding protein
P02654	*APOC1*	Apolipoprotein C-I
P02655	*APOC2*	Apolipoprotein C-II
P00746	*CFD*	Complement factor D
O43866	*CD5L*	CD5 antigen-like
O75636	*FCN3*	Ficolin-3
O75882	*ATRN*	Attractin
O95445	*APOM*	Apolipoprotein M

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Majority protein IDs	Gene names	Protein names
P00739	*HPR*	Haptoglobin-related protein
P00740	*F9*	Coagulation factor IX
P00748	*F12*	Coagulation factor XII
P01042	*KNG1*	Kininogen-1
P01871	*IGHM*	Ig mu chain C region
P02652	*APOA2*	Apolipoprotein A-II
P02743	*APCS*	Serum amyloid P-component
P02745	*C1QA*	Complement C1q subcomponent subunit A
P02747	*C1QC*	Complement C1q subcomponent subunit C
P02750	*LRG1*	Leucine-rich alpha-2-glycoprotein
P02753	*RBP4*	Retinol-binding protein 4
P02763	*ORM1*	Alpha-1-acid glycoprotein 1
P02790	*HPX*	Hemopexin
P04196	*HRG*	Histidine-rich glycoprotein
P06702	*S100A9*	Protein S100-A9
P07357	*C8A*	Complement component C8 alpha chain
P0DOY3	*IGLC3*	Immunoglobulin lambda constant 3
P18428	*LBP*	Lipopolysaccharide-binding protein
P19652	*ORM2*	Alpha-1-acid glycoprotein 2
P20851	*C4BPB*	C4b-binding protein beta chain
P22792	*CPN2*	Carboxypeptidase N subunit 2
P29622	*SERPINA4*	Kallistatin
P35858	*IGFALS*	Insulin-like growth factor-binding protein complex acid labile subunit
P43251	*BTD*	Biotinidase
P59665	*DEFA1*	Neutrophil defensin 1
P80108	*GPLD1*	Phosphatidylinositol-glycan-specific phospholipase D
Q14520	*HABP2*	Hyaluronan-binding protein 2
Q16610	*ECM1*	Extracellular matrix protein 1
Q96TA2	*YME1L1*	ATP-dependent zinc metalloprotease YME1L1

Supplementary Table II. List of 10 exclusive proteins found only in subgroups of infertility.

Protein IDs	Gene names	Protein names
A0A087WSY5	*CPB2*	Carboxypeptidase B2
P0DP08	*IGHV4-61*	Ig heavy chain V-II region NEWM
A0A0C4DH73	*IGKV1-12*	Ig kappa chain V-I region Wes
E5RH81	*CA1*	Carbonic anhydrase 1
G3XAK1	*MST1*	Hepatocyte growth factor-like protein
P00742	*F10*	Coagulation factor X
P02042	*HBD*	Hemoglobin subunit delta
P04430	*IGKV1-16*	Ig kappa chain V-I region BAN
P05109	*S100A8*	Protein S100-A8
P32119	*PRDX2*	Peroxiredoxin-2

Supplementary Table III. List of differentially expressed proteins in infertile PCOS and non-PCOS groups.

Protein IDs	Protein names	Gene names	Unique peptides	Log P value PCOS/ HC	FC PCOS/ HC	Log P value non-PCOS/ HC	FC non-PCOS/ HC
P43251	Biotinidase	*BTD*	3	6.626	0.956	7.869	0.911
K7EJD3	Galectin-3-binding protein	*LGALS3BP*	7	5.673	0.974	6.391	0.961
A0A0C4DGN2	Sex hormone-binding globulin	*SHBG*	3	5.402	0.978	5.689	0.974
A0A087WUD9	Plasma protease C1 inhibitor	*SERPING1*	3	4.511	0.987	5.636	0.976
H0Y4K8	Anastellin	*FN1*	63	6.054	0.972	5.436	0.98
K7EJI9	Apolipoprotein C-I	*APOC1*	5	5.715	0.977	5.126	0.984
A0A096LPE2	Serum amyloid A-4 protein	*SAA2*	4	4.971	0.984	4.404	0.989
P00748	Beta-factor XIIa part 1	*F12*	13	4.657	0.987	4.368	0.989
C9J7V5	Properdin	*CFP*	3	4.281	0.988	3.953	0.99
P02652	Apolipoprotein A-II	*APOA2*	10	4.165	0.992	4.261	0.991
C9J075	Plasma kallikrein	*KLKB1*	16	-	-	4.13	0.991
P01042-2	Bradykinin	*KNG1*	4	3.532	0.994	4.087	0.992
P20851	C4b-binding protein beta chain	*C4BPB*	4	4.915	0.985	3.385	0.994
C9JF17	Apolipoprotein D	*APOD*	6	3.588	1.007	4.068	1.009
P02790	Hemopexin	*HPX*	28	3.965	1.008	4.466	1.01
F8WF42	Serum paraoxonase	*PON1*	10	3.377	1.006	4.397	1.011
P02743	Serum amyloid P-component	*APCS*	6	4.945	1.016	5.034	1.017
A6PVY5	C4b-binding protein alpha chain	*C4BPA*	26	4.78	1.014	5.223	1.018
O95445	Apolipoprotein M	*APOM*	5	3.428	1.006	5.305	1.019
A0A0G2JPR0	Complement C4-A	*C4A*	1	3.323	1.006	5.43	1.02
B7ZKJ8	35 kDa inter-alpha-trypsin inhibitor heavy chain H4	*ITIH4*	31	3.432	1.006	5.443	1.02
A0A7P0T8D1	Angiotensin 1-4	*AGT*	12	4.958	1.016	5.487	1.021
P00740	Coagulation factor IX	*F9*	3	5.61	1.026	5.42	1.024
P00739	Haptoglobin-related protein	*HPR*	5	4.586	1.013	5.772	1.025
P02753	Plasma retinol-binding protein(1-176)	*RBP4*	7	5.518	1.022	5.774	1.026
P01009	Alpha-1-antitrypsin	*SERPINA1*	2	4.844	1.015	5.866	1.027
G3V350	Corticosteroid-binding globulin	*SERPINA6*	8	5.579	1.023	6.274	1.035
A0A2R8Y7C0	Hemoglobin subunit alpha	*HBA1*	13	7.366	1.058	8.049	1.086
A0A0J9YWK4	Hemoglobin subunit beta	*HBB*	8	7.914	1.081	8.417	1.108
C9JC84	Fibrinogen gamma chain	*FGG*	26	10.029	1.354	10.253	1.402
G3V3A0	Serpin family A member 3	*SERPINA3*	1	6.072	0.969	-	-
A0A087WT59	Transthyretin	*TTR*	10	5.751	0.976	-	-
P04196	Histidine-rich glycoprotein	*HRG*	20	5.081	0.984	-	-
A0A0G2JIE7	Complement C2	*C2*	3	4.74	0.985	-	-
P07357	Complement component C8 alpha chain	*C8A*	10	4.501	0.988	-	-
A0A0S2Z4L3	Vitamin K-dependent protein S	*PROS1*	8	4.322	0.989	-	-
P35858	Insulin-like growth factor-binding protein complex acid labile subunit	*IGFALS*	13	3.829	0.991	-	-

Table continues on next page.....

Protein IDs	Protein names	Gene names	Unique peptides	Log P value PCOS/ HC	FC PCOS/ HC	Log P value non-PCOS/ HC	FC non-PCOS/ HC
B1AKG0	Complement factor H-related protein 1	*CFHR1*	3	3.609	0.992	-	-
A0A8I5KW61	Beta-thromboglobulin	*PPBP*	11	3.751	0.992	-	-
A0A0G2JH38	Complement factor B	*CFB*	35	3.733	0.993	-	-
A0A182DWH7	Selenoprotein P	*SEPP1*	3	3.384	0.993	-	-
C9JC72	Complement component C6	*C6*	20	3.311	0.994	-	-
F8W7L3	Alpha-2-macroglobulin	*A2M*	77	3.365	0.995	-	-
P02747	Complement C1q subcomponent subunit C	*C1QC*	5	5.238	1.019	-	-
O75636	Ficolin-3	*FCN3*	6	-	-	3.695	0.992
D6RBJ7	Vitamin D-binding protein	*GC*	26	-	-	3.889	0.992
A0A0D9SG88	Complement factor H	*CFH*	48	-	-	3.264	1.005
B1AH94	Apolipoprotein L1	*APOL1*	14	-	-	3.348	1.006
C9JV37	Activation peptide fragment 1	*F2*	28	-	-	3.376	1.006
C9JEV0	Zinc-alpha-2-glycoprotein	*AZGP1*	13	-	-	3.455	1.006
P02745	Complement C1q subunit A	*C1QA*	4	-	-	3.475	1.007
P02763	Alpha-1-acid glycoprotein 1	*ORM1*	9	-	-	3.745	1.007
A0A087WWY0	Apolipoprotein(a)	*LPA*	3	-	-	3.462	1.007
P18428	Lipopolysaccharide-binding protein	*LBP*	3	-	-	3.768	1.008
A0A0C4DGL8	Haptoglobin	*HP*	18	-	-	4.032	1.008
P22792	Carboxypeptidase N subunit 2	*CPN2*	9	-	-	3.78	1.008
F5GXY0	Pregnancy zone protein	*PZP*	13	-	-	3.859	1.009
A0A024R6I7	Alpha-1-antitrypsin	*SERPINA1*	2	-	-	4.168	1.009
A0A3B3IS66	Coagulation factor XIII B chain	*F13B*	7	-	-	3.775	1.009
A0A669KB70	Apolipoprotein B-100	*APOB*	181	-	-	4.272	1.01
B1AHL2	Fibulin-1	*FBLN1*	5	-	-	4.052	1.01
K7ERG9	Complement factor D	*CFD*	4	-	-	4.092	1.011
A6PVI2	Activation peptide	*PLG*	48	-	-	4.885	1.014
B0YIW2	Apolipoprotein C-III	*APOC3*	4	-	-	4.928	1.014
P80108	Phosphatidylinositol-glycan-specific phospholipase D	*GPLD1*	4	-	-	4.73	1.015
P02750	Leucine-rich alpha-2-glycoprotein	*LRG1*	11	-	-	5.024	1.016
B5MCV4	Complement C1s subcomponent	*C1S*	9	-	-	5.163	1.019
P19652	Alpha-1-acid glycoprotein 2	*ORM2*	7	-	-	5.962	1.025
Q14520	Hyaluronan-binding protein 2	*HABP2*	6	4.157	0.989	3.255	1.006
A6XND0	Insulin-like growth factor-binding protein 3	*IGFBP3*	3	4.812	0.984	3.345	1.007
A0A087WW43	Inter-alpha-trypsin inhibitor heavy chain H3	*ITIH3*	7	3.963	0.991	3.62	1.007
P06702	Protein S100-A9	*S100A9*	2	6.605	0.956	4.267	1.011
Q16610	Extracellular matrix protein 1	*ECM1*	3	3.373	0.993	4.165	1.011
E9PQD6	Amyloid protein A	*SAA1*	2	4.847	0.985	5.13	1.018
K7ER74	Apolipoprotein C-II	*APOC2*	3	4.119	0.991	6.029	1.029
A0A2R8Y793	Actin	*ACTA1*	7	5.5	0.977	6.217	1.035

HC, healthy control; PCOS, polycystic ovary syndrome; FC, fold change.

Supplementary Table IV. List of proteins present in different clusters of heat map.

Cluster no.	Protein IDs	Gene names	Protein names
1	A0A3B3ISR2	*C1R*	Complement C1r subcomponent
1	O75882	*ATRN*	Attractin
1	A0A182DWH7	*SEPP1*	Selenoprotein P
1	Q14520	*HABP2*	Hyaluronan-binding protein 2
1	A6XND0	*IGFBP3*	Insulin-like growth factor-binding protein 3
1	E5RG36	*CLU*	Clusterin
1	A0A0A0MSV6	*C1QB*	Complement C1q subcomponent subunit B
1	A0A087WW43	*ITIH3*	Inter-alpha-trypsin inhibitor heavy chain H3
1	P06702	*S100A9*	Protein S100-A9
1	A0A0G2JIE7	*C2*	Complement C2
1	P04196	*HRG*	Histidine-rich glycoprotein
1	A0A087WT59	*TTR*	Transthyretin
1	F8W7L3	*A2M*	Alpha-2-macroglobulin
1	P07357	*C8A*	Complement component C8 alpha chain
1	P35858	*IGFALS*	Insulin-like growth factor-binding protein complex acid labile subunit
1	P20851	*C4BPB*	C4b-binding protein beta chain
1	A0A8I5KW61	*PPBP*	Beta-thromboglobulin
1	G3V3A0	*SERPINA3*	Alpha-1-antichymotrypsin
1	A0A0S2Z4L3	*PROS1*	Vitamin K-dependent protein S
1	A0A2R8Y3M9	*CFI*	Complement factor I
1	A0A0G2JPA8	*SERPINF2*	Alpha-2-antiplasmin
2	C9J7V5	*CFP*	Properdin
2	P00748	*F12*	Beta-factor XIIa part 1
2	B1AKG0	*CFHR1*	Complement factor H-related protein 1
2	A0A0G2JH38	*CFB*	Complement factor B
2	C9JC72	*C6*	Complement component C6
2	H0Y4K8	*FN1*	Anastellin
2	K7EJI9	*APOC1*	Apolipoprotein C-I
2	A0A096LPE2	*SAA2-SAA4*	Serum amyloid A-4 protein
2	P01042-2	*KNG1*	Bradykinin
2	K7EJD3	*LGALS3BP*	Galectin-3-binding protein
2	A0A0C4DGN2	*SHBG*	Sex hormone-binding globulin
2	P02652	*APOA2*	Apolipoprotein A-II
2	P59665	*DEFA1*	Neutrophil defensin 1
3	A0A087WUD9	*SERPING1*	Plasma protease C1 inhibitor
3	P43251	*BTD*	Biotinidase
3	P29622	*SERPINA4*	Kallistatin
3	O75636	*FCN3*	Ficolin-3
3	C9J075	*KLKB1*	Plasma kallikrein
3	D6RBJ7	*GC*	Vitamin D-binding protein

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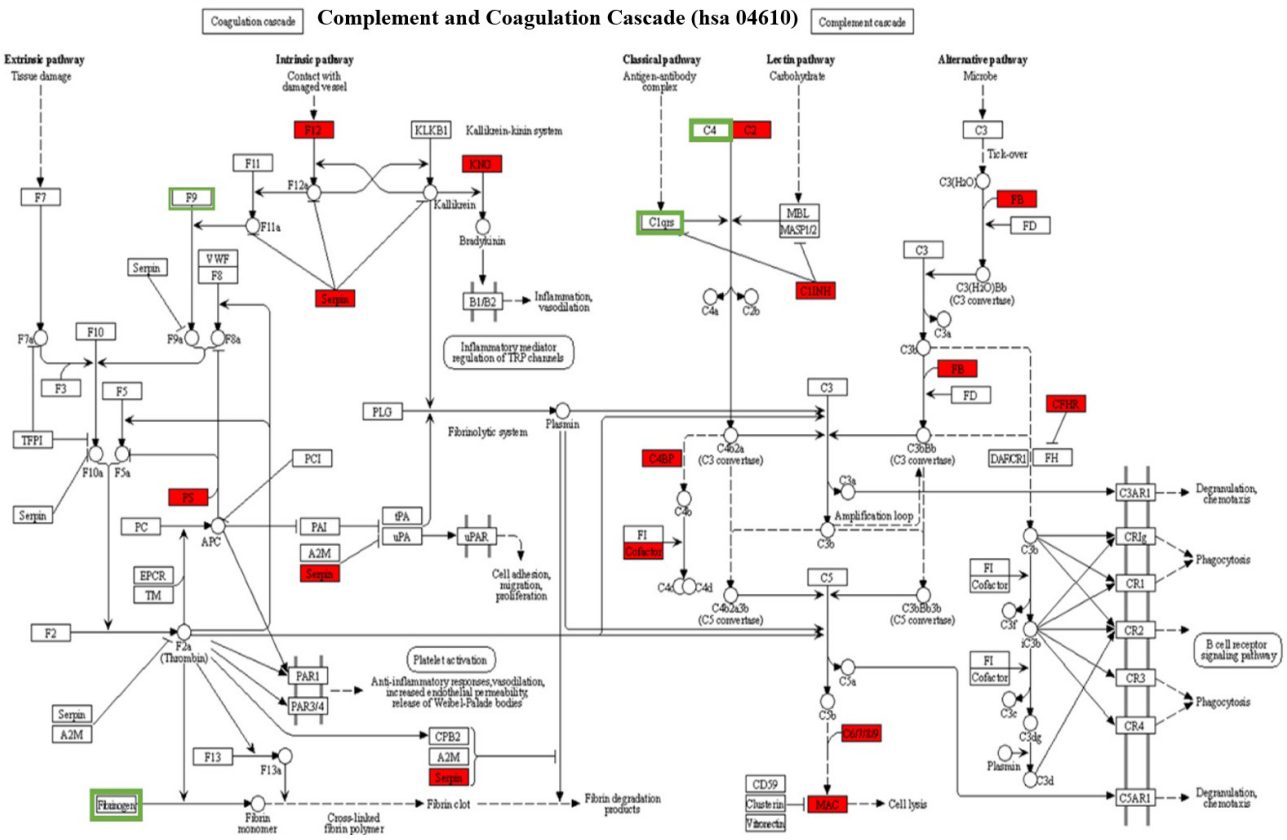
Cluster no.	Protein IDs	Gene names	Protein names
4	B4DLR2	*C7*	Complement component C7
4	P02747	*C1QC*	Complement C1q subcomponent subunit C
4	C9JV77	*AHSG*	Alpha-2-HS-glycoprotein
4	O43866	*CD5L*	CD5 antigen-like
4	P00740	*F9*	Coagulation factor IX
4	P00739	*HPR*	Haptoglobin-related protein
4	P01009	*SERPINA1*	Alpha-1-antitrypsin
4	F8WF42	*PON1*	Serum paraoxonase/arylesterase 1
4	F5GXY0	*PZP*	Pregnancy zone protein
4	P02745	*C1QA*	Complement C1q subcomponent subunit A
4	B1AH94	*APOL1*	Apolipoprotein L1
4	P02790	*HPX*	Hemopexin
4	C9JF17	*APOD*	Apolipoprotein D
4	A0A0J9YWK4	*HBB*	Hemoglobin subunit beta
4	A6PVY5	*C4BPA*	C4b-binding protein alpha chain
4	A0A7P0T8D1	*AGT*	Angiotensin 1-4
4	A0A2R8Y7C0	*HBA1*	Hemoglobin subunit alpha
4	G3V350	*SERPINA6*	Corticosteroid-binding globulin
4	P02753	*RBP4*	Plasma retinol-binding protein(1-176)
4	C9JC84	*FGG*	Fibrinogen gamma chain
4	P02743	*APCS*	Serum amyloid P-component
5	A0A024R6I7	*SERPINA1*	Alpha-1-antiproteinase
5	A0A087WWY0	*LPA*	Apolipoprotein(a)
5	A0A087WY93	*SERPINA3*	Alpha-1-antichymotrypsin
5	A0A0C4DGL8	*HP*	Haptoglobin
5	A0A0D9SG88	*CFH*	Complement factor H
5	A0A0G2JPR0	*C4A*	Complement C4-A
5	A0A2R8Y793	*ACTA1*	Actin, alpha cardiac muscle 1
5	A0A3B3IS66	*F13B*	Coagulation factor XIII B chain
5	A0A3B3ISA6	*C4B*	C4a anaphylatoxin
5	A0A3B3ITK5	*C8G*	Complement component C8 gamma chain
5	A0A669KB70	*APOB*	Apolipoprotein B-100
5	A6PVI2	*PLG*	Activation peptide
5	B0YIW2	*APOC3*	Apolipoprotein C-III
5	B1AHL2	*FBLN1*	Fibulin-1
5	B5MCV4	*C1S*	Complement C1s subcomponent
5	B7ZKJ8	*ITIH4*	Inter-alpha-trypsin inhibitor heavy chain H4
5	C9JEV0	*AZGP1*	Zinc-alpha-2-glycoprotein
5	C9JV37	*F2*	Activation peptide fragment 1
5	E9PQD6	*SAA1*	Amyloid protein A
5	K7ER74	*APOC2*	Apolipoprotein C-II

Table continues on next page.....

Cluster no.	Protein IDs	Gene names	Protein names
5	K7ERG9	*CFD*	Complement factor D
5	O95445	*APOM*	Apolipoprotein M
5	P02750	*LRG1*	Leucine-rich alpha-2-glycoprotein
5	P02763	*ORM1*	Alpha-1-acid glycoprotein 1
5	P18428	*LBP*	Lipopolysaccharide-binding protein
5	P19652	*ORM2*	Alpha-1-acid glycoprotein 2
5	P22792	*CPN2*	Carboxypeptidase N subunit 2
5	P80108	*GPLD1*	Phosphatidylinositol-glycan-specific phospholipase D
5	Q16610	*ECM1*	Extracellular matrix protein 1
5	Q96TA2	*YME1L1*	ATP-dependent zinc metalloprotease



Supplementary Fig. 1. The KEGG (Kyoto encyclopaedia of genes and genomes) pathway. Maps were obtained at 0.05 FDR cut off for up-regulated and down-regulated proteins in both subgroups groups in order to gain insight into the role of protein in the biological system.