Protein and Phosphorylation Profiling of organoid cultures from patient and WT samples

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1 Aim of the Experiment

The aim of the experiment was to identify protein differences as well as differences in total protein phosphorylation in patient and WT organoid samples.

2 Material & Methods

2.1 Samples and protein extraction

36 organoid samples were provided by the customer. The bulk protein concentration was determined by BCA assay (Table 1).

Table 1: Overview of samples sent for analysis and measured protein concentrations.

sample no.	sample ID Sciomics	sample ID Customer	sample group	status	Concentration [mg/ml]
1	BO001	WT_UN_T_10_R_1	WT_UN_T_10	WT	0.68
2	BO002	WT_UN_T_20_R_1	WT_UN_T_20	WT	0.64
3	BO003	WT_UN_T_30_R_1	WT_UN_T_30	WT	0.57
4	BO004	WT_CD_T_10_R_1	WT_CD_T_10	WT	0.66
5	BO005	WT_CD_T_20_R_1	WT_CD_T_20	WT	0.71
6	BO006	WT_CD_T_30_R_1	WT_CD_T_30	WT	0.38
7	BO007	PAT_UN_T_10_R_1	PAT_UN_T_10	Patient	0.96
8	BO008	PAT_UN_T_20_R_1	PAT_UN_T_20	Patient	1.09
9	BO009	PAT_UN_T_30_R_1	PAT_UN_T_30	Patient	1.04
10	BO010	PAT_CD_T_10_R_1	PAT_CD_T_10	Patient	0.69
11	BO011	PAT_CD_T_20_R_1	PAT_CD_T_20	Patient	1.10
12	BO012	PAT_CD_T_30_R_1	PAT_CD_T_30	Patient	0.98
13	BO013	WT_UN_T_10_R_2	WT_UN_T_10	WT	0.46
14	BO014	WT_UN_T_20_R_2	WT_UN_T_20	WT	0.76
15	BO015	WT_UN_T_30_R_2	WT_UN_T_30	WT	0.41
16	BO016	WT_CD_T_10_R_2	WT_CD_T_10	WT	0.57
17	BO017	WT_CD_T_20_R_2	WT_CD_T_20	WT	0.75
18	BO018	WT_CD_T_30_R_2	WT_CD_T_30	WT	0.60
19	BO019	PAT_UN_T_10_R_2	PAT_UN_T_10	Patient	0.97
20	BO020	PAT_UN_T_20_R_2	PAT_UN_T_20	Patient	1.11
21	BO021	PAT_UN_T_30_R_2	PAT_UN_T_30	Patient	1.25
22	BO022	PAT_CD_T_10_R_2	PAT_CD_T_10	Patient	0.64
23	BO023	PAT_CD_T_20_R_2	PAT_CD_T_20	Patient	0.97
24	BO024	PAT_CD_T_30_R_2	PAT_CD_T_30	Patient	0.83
25	BO025	WT_UN_T_10_R_3	WT_UN_T_10	WT	0.61
26	BO026	WT_UN_T_20_R_3	WT_UN_T_20	WT	0.68
27	BO027	WT_UN_T_30_R_3	WT_UN_T_30	WT	0.37
28	BO028	WT_CD_T_10_R_3	WT_CD_T_10	WT	0.80
29	BO029	WT_CD_T_20_R_3	WT_CD_T_20	WT	0.70
30	BO030	WT_CD_T_30_R_3	WT_CD_T_30	WT	0.60
31	BO031	PAT_UN_T_10_R_3	PAT_UN_T_10	Patient	0.74
32	BO032	PAT_UN_T_20_R_3	PAT_UN_T_20	Patient	1.17
33	BO033	PAT_UN_T_30_R_3	PAT_UN_T_30	Patient	0.73
34	BO034	PAT_CD_T_10_R_3	PAT_CD_T_10	Patient	0.76
35	BO035	PAT_CD_T_20_R_3	PAT_CD_T_20	Patient	0.83
36	BO036	PAT_CD_T_30_R_3	PAT_CD_T_30	Patient	0.72

2.2 Sample labelling

The samples were labelled at an adjusted protein concentration for two hours with scioDye 2. After two hours, the reaction was stopped. Excess dye was removed and the buffer exchanged to PBS. All labelled protein samples were stored at -20° C until use.

2.3 Sample incubation

The 36 samples were analysed on 36 scioDiscover antibody microarrays (Sciomics) targeting 1,360 different proteins with 1,830 antibodies. Each antibody is represented on the array in four replicates. The arrays were blocked with scioBlock (Sciomics) on a Hybstation 4800 (Tecan, Austria) and afterwards the samples as well as scioPhosphomix 1 were incubated. Via scioPhosphomix 1 information on protein specific phosphorylation levels at serine, threonine and tyrosine residues can be obtained. After incubation, the slides were thoroughly washed with 1x PBSTT, rinsed with 0.1x PBS as well as with water and subsequently dried with nitrogen.

2.4 Data acquisition and analysis

Slide scanning was conducted using a Powerscanner (Tecan, Austria) with identical instrument laser power and constant PMT settings. Spot segmentation was performed with GenePix Pro 6.0 (Molecular Devices, Union City, CA, USA). Acquired raw data were analysed using the linear models for microarray data (LIMMA) package of R-Bioconductor after uploading the median signal intensities. For normalisation, a Cyclic Loess normalisation was applied. For analysis of the samples a one-factorial linear model was fitted with LIMMA resulting in a two-sided t-test or F-test based on moderated statistics. All presented p values were adjusted for multiple testing by controlling the false discovery rate according to Benjamini and Hochberg. Proteins were defined as differential for $|logFC| > 0.5$ and an adjusted p value < 0.05.
Differences in protein abundance or phosphorylation level between different samples or sample groups are presented as log-fold changes ($logFC$) calculated for the basis 2. In a study comparing samples versus control a $logFC = 1$ means that the sample group had on average a $2^1 = 2$ fold higher signal as the control group. $logFC = -1$ stands for $2^{-1} = 1/2$ of the signal in the sample as compared to the control group.

3 Results of protein expression analysis

3.1 Cluster analysis

3.1.1 Hierarchical cluster analysis

The cluster analysis for the protein signal data of the complete data set (Figure 1) reveals a rather clear clustering according to samples groups. The main cluster on the right contains only patient samples (day 20 and day 30 with a separative trend between both) and the cluster on the left contains all WT samples. On the far left side of the left main cluster 5 patient samples (all at day 10) can be found, suggesting that these 5 samples are closer to the WT samples in terms of the overall protein landscape. There are two samples BO007 and BO036 which are located between the two main clusters and might be considered being outliers.

A further cluster analysis was performed with only the differential data set (Figure 2). The cluster analysis with the differential proteins reveals a clear separation between WT and patient samples. Within the WT and patient samples cluster day 10 samples cluster apart from day 20 and day 30 samples.

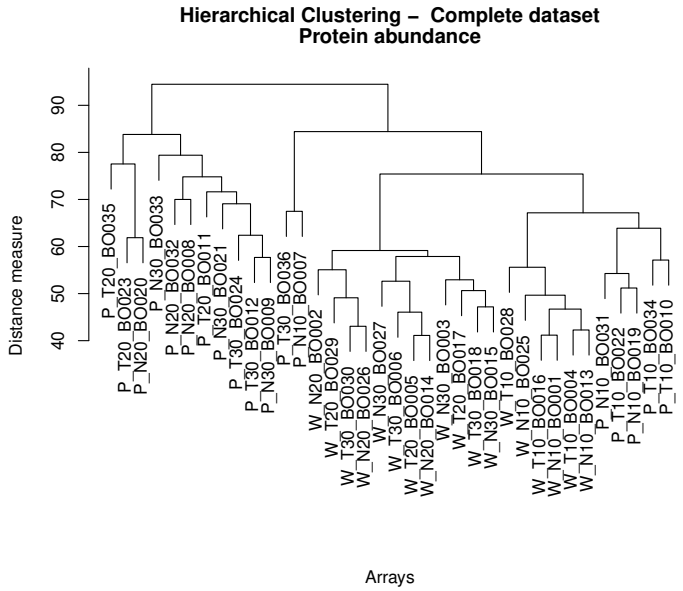

Figure 1: Hierarchical clustering of the samples' protein signal data using complete array data.

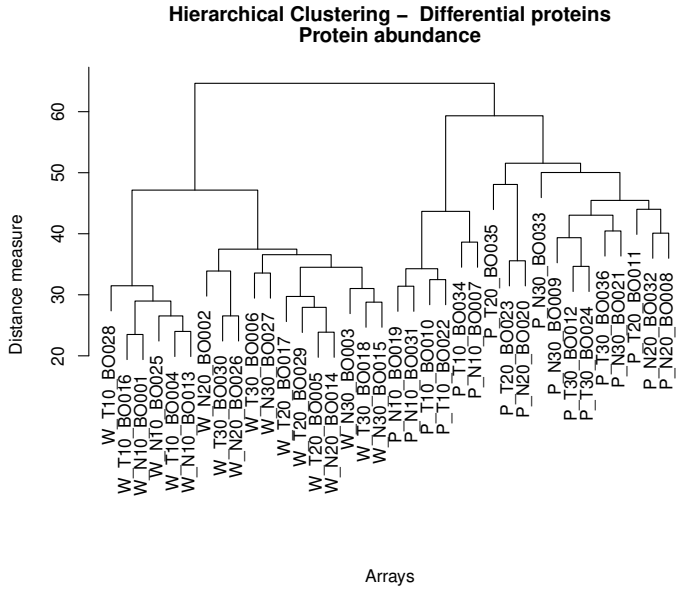

Figure 2: Hierarchical clustering of the samples' protein signal data based on differential proteins.

3.1.2 Non-metric multidimensional scaling

In addition, a non-metric multidimensional scaling (NMDS) was performed for the array data (Figure 3) as well as for the array data filtered for differential proteins (Figure 4). In this plot, the location and proximity of the samples is defined by the protein profile of the respective arrays. Samples with a similar profile are located in close proximity.

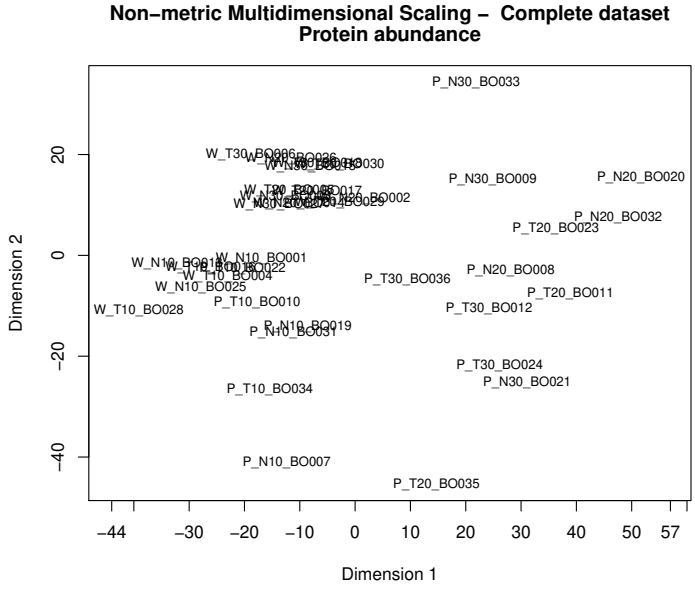

Figure 3: Non-metric multidimensional scaling plot of the samples' protein signal data using complete array data.

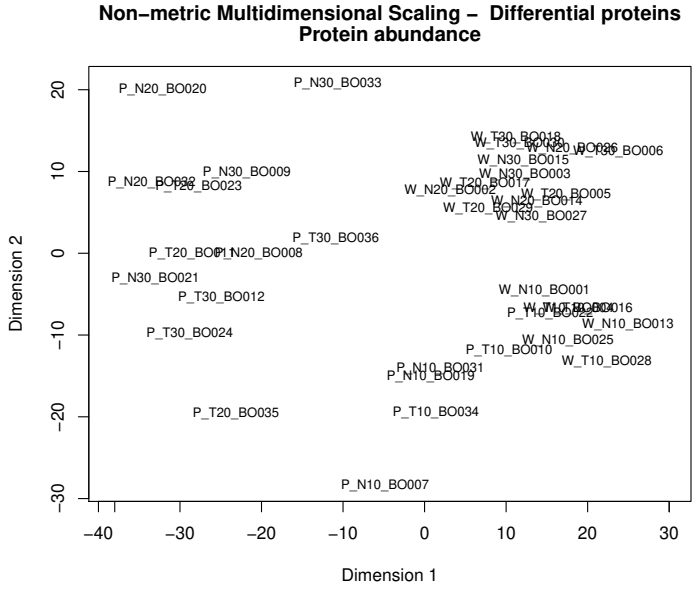

Figure 4: Non-metric multidimensional scaling plot of the samples' protein signal data based on differential proteins.

3.2 Differentially abundant proteins

3.2.1 Untreated Day10: PAT vs WT

Between PAT-untreated Day10 and WT-untreated Day10, 189 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 5) and listed in Table 2.

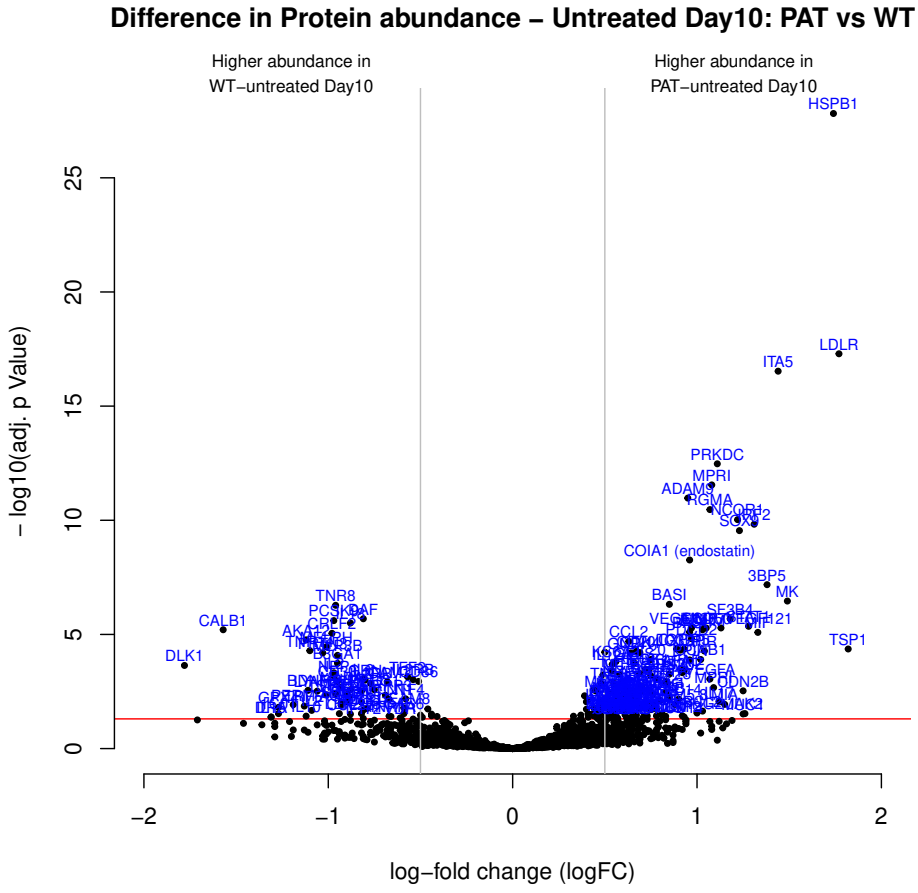

Figure 5: Several proteins exhibited distinct abundance variations in PAT-untreated Day10 and WT-untreated Day10. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-untreated Day10, proteins with a negative value in WT-untreated Day10.

Table 2: Proteins with differential abundance in PAT-untreated Day10 and WT-untreated Day10. Proteins with a positive logFC value had a higher abundance in PAT-untreated Day10, proteins with a negative value in WT-untreated Day10. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
TSP1	ab1855	TSP1_HUMAN	P07996	THBS1	1.82	10.24	4.3e-05
LDLR	ab1766	LDLR_HUMAN	P01130	LDLR	1.77	12.13	5.1e-18
HSPB1	ab2305	HSPB1_HUMAN	P04792	HSPB1	1.74	11.61	1.5e-28
MK	ab2370	MK_HUMAN	P21741	MDK	1.49	10.68	3.5e-07
ITA5	ab1565	ITA5_HUMAN	P08648	ITGA5	1.44	11.55	3.0e-17
3BP5	ab1052	3BP5_HUMAN	O60239	SH3BP5	1.38	10.14	6.6e-08
MIF	ab1816	MIF_HUMAN	P14174	MIF	1.33	14.59	8.1e-06
IRF2	ab1256	IRF2_HUMAN	P14316	IRF2	1.31	10.17	1.5e-10
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	1.28	13.56	4.4e-06
JAK2	ab0978	JAK2_HUMAN	O60674	JAK2	1.26	11.98	2.9e-02
CDN2B	ab0490	CDN2B_HUMAN	P42772	CDKN2B	1.25	9.77	3.0e-03
MUC1	ab1087	MUC1_HUMAN	P15941	MUC1	1.25	13.07	3.0e-02
SOX9	ab1162	SOX9_HUMAN	P48436	SOX9	1.23	12.18	2.8e-10
NCOR1	ab1269	NCOR1_HUMAN	O75376	NCOR1	1.22	11.31	9.4e-11
SF3B4	ab0743	SF3B4_HUMAN	Q15427	SF3B4	1.18	10.89	2.1e-06
MIA	ab2702	MIA_HUMAN	Q16674	MIA	1.15	13.26	1.2e-02
VEGF165, VEGF121	ab2469		P15692	VEGFA	1.13	10.21	5.2e-06
IL17	ab2717	IL17_HUMAN	Q16552	IL17A	1.12	13.50	8.9e-03
PRKDC	ab1124	PRKDC_HUMAN	P78527	PRKDC	1.11	12.14	3.4e-13
MPRI	ab0484	MPRI_HUMAN	P11717	IGF2R	1.09	8.80	2.1e-03
MPRI	ab1490	MPRI_HUMAN	P11717	IGF2R	1.08	12.48	2.8e-12
RGMA	ab2023	RGMA_HUMAN	Q96B86	RGMA	1.07	12.07	3.4e-11
VEGFA	ab1603	VEGFA_HUMAN	P15692	VEGFA	1.07	10.48	9.0e-04
CCD50	ab1051	CCD50_HUMAN	Q8IVM0	CCDC50	1.05	14.82	5.2e-06
MMP7	ab1845	MMP7_HUMAN	P09237	MMP7	1.04	11.19	5.1e-06
PIR	ab0873	PIR_HUMAN	O00625	PIR	1.04	10.21	5.3e-05
ECHM	ab0593	ECHM_HUMAN	P30084	ECHS1	1.03	14.25	6.2e-06
BCL2	ab0984	BCL2_HUMAN	P10415	BCL2	1.03	10.59	2.3e-02
CCNB1	ab1233	CCNB1_HUMAN	P14635	CCNB1	1.02	9.99	1.3e-04
ARHG2	ab0032	ARHG2_HUMAN	Q92974	ARHGEF2	1.00	6.71	2.8e-02
JUN	ab1107	JUN_HUMAN	P05412	JUN	0.97	9.77	5.2e-06
PDCD2	ab1050	PDCD2_HUMAN	Q16342	PDCD2	0.97	9.85	1.5e-05
COIA1 (endostatin)	ab2815	COIA1_HUMAN	P39060	COL18A1	0.96	10.33	5.5e-09
BASI	ab1486	BASI_HUMAN	P35613	BSG	0.96	14.76	7.8e-06
PPIA	ab0998	PPIA_HUMAN	P62937	PPIA	0.96	11.94	1.3e-04
ADAM9	ab1924	ADAM9_HUMAN	Q13443	ADAM9	0.95	11.44	1.1e-11
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	0.93	14.09	4.4e-05
TIA1	ab0470	TIA1_HUMAN	P31483	TIA1	0.93	12.53	3.9e-04
CD14	ab2267	CD14_HUMAN	P08571	CD14	0.93	13.39	4.1e-02
AFAD	ab0819	AFAD_HUMAN	P55196	AFDN	0.92	9.60	3.7e-04
1433Z	ab2089	1433Z_HUMAN	P63104	YWHAZ	0.92	10.38	4.7e-04
TSP2	ab0694	TSP2_HUMAN	P35442	THBS2	0.92	12.23	3.7e-02
LG3BP	ab2699	LG3BP_HUMAN	Q08380	LGALS3BP	0.91	11.41	4.9e-05
K1C14	ab1331	K1C14_HUMAN	P02533	KRT14	0.90	13.53	6.8e-03
TOP1	ab1298	TOP1_HUMAN	P11387	TOP1	0.89	12.95	4.4e-05
CEAM5,8	ab1634		P06731	CEACAM5	0.88	14.25	1.2e-02
BASI	ab1910	BASI_HUMAN	P35613	BSG	0.85	14.74	4.8e-07
SPS2L	ab0571	SPS2L_HUMAN	Q9NUQ6	SPATS2L	0.85	8.88	5.5e-04
PHB	ab1174	PHB_HUMAN	P35232	PHB	0.85	9.27	5.6e-03
FGF23	ab2215	FGF23_HUMAN	Q9GZV9	FGF23	0.84	9.98	1.4e-03
IGF1R	ab1995	IGF1R_HUMAN	P08069	IGF1R	0.83	12.10	1.1e-03
DKK1	ab1094	DKK1_HUMAN	O94907	DKK1	0.83	9.38	3.6e-03
ONCM	ab1885	ONCM_HUMAN	P13725	OSM	0.83	11.77	3.8e-02
NUP88	ab0712	NUP88_HUMAN	Q99567	NUP88	0.81	9.77	3.0e-02
CATL1	ab1205	CATL1_HUMAN	P07711	CTSL	0.81	9.80	3.4e-02
ICOS	ab2742	ICOS_HUMAN	Q9Y6W8	ICOS	0.80	12.96	7.8e-03
SC16A	ab0572	SC16A_HUMAN	O15027	SEC16A	0.78	9.80	9.1e-04
IL9	ab2252	IL9_HUMAN	P15248	IL9	0.78	7.90	1.9e-02

Continued on next page

Table 2 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CCL28	ab1878	CCL28_HUMAN	Q9NRJ3	CCL28	0.78	12.90	3.7e-02
B2MG	ab0525	B2MG_HUMAN	P61769	B2M	0.77	8.93	1.2e-02
PGAM5	ab0034	PGAM5_HUMAN	Q96HS1	PGAM5	0.76	11.32	4.1e-03
IL20	ab1722	IL20_HUMAN	Q9NYY1	IL20	0.75	11.33	1.3e-04
BGLR	ab1005	BGLR_HUMAN	P08236	GUSB	0.75	11.37	6.5e-04
CTGF	ab0640	CTGF_HUMAN	P29279	CTGF	0.75	11.16	2.0e-02
PGK1	ab1035	PGK1_HUMAN	P00558	PGK1	0.74	10.31	3.5e-04
PDIA6	ab0578	PDIA6_HUMAN	Q15084	PDIA6	0.74	11.49	2.8e-03
MIS	ab2816	MIS_HUMAN	P03971	AMH	0.73	12.05	8.9e-03
IL17C	ab2403	IL17C_HUMAN	Q9P0M4	IL17C	0.73	12.23	3.7e-02
IL12B	ab1667	IL12B_HUMAN	P29460	IL12B	0.72	11.38	3.4e-04
TFR1	ab1472	TFR1_HUMAN	P02786	TFRC	0.71	11.84	4.0e-02
IL3RB	ab1551	IL3RB_HUMAN	P32927	CSF2RB	0.70	9.19	1.8e-03
CDK4	ab1236	CDK4_HUMAN	P11802	CDK4	0.69	9.63	6.2e-05
FRS2	ab2270	FRS2_HUMAN	Q8WU20	FRS2	0.69	10.58	5.1e-04
RBM42	ab0107	RBM42_HUMAN	Q9BTD8	RBM42	0.69	10.33	3.3e-03
IL12A	ab1088	IL12A_HUMAN	P29459	IL12A	0.69	10.60	1.9e-02
FILA	ab1199	FILA_HUMAN	P20930	FLG	0.68	8.74	4.9e-03
REQU	ab1350	REQU_HUMAN	Q92785	DPF2	0.68	11.26	1.2e-02
CD20	ab1408	CD20_HUMAN	P11836	MS4A1	0.67	10.33	5.6e-05
S35A2	ab0801	S35A2_HUMAN	P78381	SLC35A2	0.67	8.21	3.4e-02
SLAF8	ab2129	SLAF8_HUMAN	Q9P0V8	SLAMF8	0.67	14.09	3.6e-02
GELS	ab0442	GELS_HUMAN	P06396	GSN	0.66	10.48	1.8e-04
RSPO1	ab2675	RSPO1_HUMAN	Q2MKA7	RSPO1	0.66	10.54	4.6e-02
IFI6	ab1063	IFI6_HUMAN	P09912	IFI6	0.65	10.33	2.8e-03
OTUB1	ab0026	OTUB1_HUMAN	Q96FW1	OTUB1	0.65	14.51	6.7e-03
JAK3	ab1149	JAK3_HUMAN	P52333	JAK3	0.65	13.62	7.0e-03
IL13_MOUSE	ab1323	IL13_MOUSE	P20109	Il13	0.65	9.85	1.1e-02
IF2A	ab0699	IF2A_HUMAN	P05198	EIF2S1	0.65	9.46	3.7e-02
GNPI1	ab1316	GNPI1_HUMAN	P46926	GNPDA1	0.64	10.85	6.4e-05
IL1A	ab0497	IL1A_HUMAN	P01583	IL1A	0.64	9.23	6.1e-03
CSF2	ab1053	CSF2_HUMAN	P04141	CSF2	0.64	10.45	2.3e-02
CCL2	ab0524	CCL2_HUMAN	P13500	CCL2	0.63	9.88	2.0e-05
GATA4	ab0120	GATA4_HUMAN	P43694	GATA4	0.63	8.68	4.7e-03
CLD10	ab0746	CLD10_HUMAN	P78369	CLDN10	0.63	10.29	9.1e-03
MTHR	ab0670	MTHR_HUMAN	P42898	MTHFR	0.62	13.09	6.8e-03
TPM2	ab1078	TPM2_HUMAN	P07951	TPM2	0.62	9.62	4.5e-02
SH3R3	ab0761	SH3R3_HUMAN	Q8TEJ3	SH3RF3	0.62	8.83	4.8e-02
CD276	ab2437	CD276_HUMAN	Q5ZPR3	CD276	0.61	13.45	2.1e-03
TSN6	ab1200	TSN6_HUMAN	O43657	TSPAN6	0.61	8.58	2.6e-03
PCGF2	ab0111	PCGF2_HUMAN	P35227	PCGF2	0.61	9.82	2.5e-02
EP300	ab0740	EP300_HUMAN	Q09472	EP300	0.61	8.32	3.4e-02
NRP1	ab1781	NRP1_HUMAN	O14786	NRP1	0.60	11.70	1.2e-03
PTPRS	ab0035	PTPRS_HUMAN	Q13332	PTPRS	0.60	9.34	4.0e-03
REL3	ab2803	REL3_HUMAN	Q8WXF3	RLN3	0.60	9.65	1.3e-02
LIFR	ab0731	LIFR_HUMAN	P42702	LIFR	0.59	8.67	7.2e-03
CD81	ab1572	CD81_HUMAN	P60033	CD81	0.59	11.94	2.1e-02
MCP	ab1446	MCP_HUMAN	P15529	CD46	0.58	10.40	5.4e-04
CCL16	ab1763	CCL16_HUMAN	O15467	CCL16	0.58	10.21	8.9e-03
NUCB2	ab2071	NUCB2_HUMAN	P80303	NUCB2	0.57	12.09	5.4e-03
AURKB	ab1071	AURKB_HUMAN	Q96GD4	AURKB	0.57	10.07	1.8e-02
UBE2T	ab0014	UBE2T_HUMAN	Q9NPD8	UBE2T	0.57	13.67	4.6e-02
KS6A2	ab0024	KS6A2_HUMAN	Q15349	RPS6KA2	0.56	10.77	1.5e-04
SORL	ab0522	SORL_HUMAN	Q92673	SORL1	0.56	11.92	5.4e-03
UPAR	ab0802	UPAR_HUMAN	Q03405	PLAUR	0.56	9.11	3.4e-02
BAX	ab0704	BAX_HUMAN	Q07812	BAX	0.56	9.19	4.2e-02
TN13B	ab1711	TN13B_HUMAN	Q9Y275	TNFSF13B	0.55	11.87	1.4e-03
CASPA	ab0489	CASPA_HUMAN	Q92851	CASP10	0.55	9.91	7.2e-03
TMED2	ab1322	TMED2_HUMAN	Q15363	TMED2	0.55	10.10	2.1e-02
IL12A	ab0214	IL12A_HUMAN	P29459	IL12A	0.54	10.15	2.0e-04
IgE	ab1592				0.54	11.08	4.0e-04

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Table 2 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
IL6RA	ab1706	IL6RA_HUMAN	P08887	IL6R	0.54	11.35	2.4e-02
DNLI3	ab0818	DNLI3_HUMAN	P49916	LIG3	0.54	9.33	3.4e-02
XPO1	ab0781	XPO1_HUMAN	O14980	XPO1	0.54	8.61	4.8e-02
IL16	ab1009	IL16_HUMAN	Q14005	IL16	0.53	9.78	3.6e-03
MAD4	ab0506	MAD4_HUMAN	Q14582	MXD4	0.53	9.47	1.7e-02
TR10B	ab1299	TR10B_HUMAN	O14763	TNFRSF10B	0.53	10.80	2.5e-02
FOXP1	ab1002	FOXP1_HUMAN	Q9H334	FOXP1	0.53	9.76	2.9e-02
ZN658	ab1155	ZN658_HUMAN	Q5TYW1	ZNF658	0.53	10.56	2.9e-02
ACY1	ab2821	ACY1_HUMAN	Q03154	ACY1	0.52	11.72	7.2e-03
MMP1	ab0533	MMP1_HUMAN	P03956	MMP1	0.51	10.59	3.0e-03
FGF1	ab1055	FGF1_HUMAN	P05230	FGF1	0.51	11.62	3.4e-02
CD86	ab1477	CD86_HUMAN	P42081	CD86	-0.51	10.10	1.1e-03
IL2RB	ab1575	IL2RB_HUMAN	P14784	IL2RB	-0.54	10.36	9.6e-04
TFF2	ab1895	TFF2_HUMAN	Q03403	TFF2	-0.57	8.90	7.2e-04
NTF4	ab1516	NTF4_HUMAN	P34130	NTF4	-0.58	11.61	6.7e-03
CEAM8	ab1577	CEAM8_HUMAN	P31997	CEACAM8	-0.59	8.93	1.6e-02
GAS6	ab0068	GAS6_HUMAN	Q14393	GAS6	-0.59	11.29	2.9e-02
VDR	ab1080	VDR_HUMAN	P11473	VDR	-0.61	12.71	4.6e-02
TNR1A	ab1610	TNR1A_HUMAN	P19438	TNFRSF1A	-0.66	9.02	3.9e-02
VTCN1	ab1131	VTCN1_HUMAN	Q7Z7D3	VTCN1	-0.67	9.49	7.0e-03
TFPI1	ab2395	TFPI1_HUMAN	P10646	TFPI	-0.67	8.84	3.8e-02
ICAM1	ab1454	ICAM1_HUMAN	P05362	ICAM1	-0.68	11.05	1.2e-03
MRPP3	ab1266	MRPP3_HUMAN	O15091	KIAA0391	-0.69	11.11	4.7e-03
PYRG1	ab0085	PYRG1_HUMAN	P17812	CTPS1	-0.75	10.48	2.6e-03
IL2RB	ab0875	IL2RB_HUMAN	P14784	IL2RB	-0.77	10.56	1.4e-03
IBP1	ab2347	IBP1_HUMAN	P08833	IGFBP1	-0.79	9.37	1.8e-02
GRN	ab2704	GRN_HUMAN	P28799	GRN	-0.80	12.37	1.0e-03
DAF	ab1457	DAF_HUMAN	P08174	CD55	-0.81	8.43	2.1e-06
IL6	ab0192	IL6_HUMAN	P05231	IL6	-0.81	12.27	8.9e-04
PDCD1	ab0974	PDCD1_HUMAN	Q15116	PDCD1	-0.81	10.14	2.1e-02
IFIT2	ab0084	IFIT2_HUMAN	P09913	IFIT2	-0.81	10.59	4.8e-02
CCL17	ab2448	CCL17_HUMAN	Q92583	CCL17	-0.82	8.62	3.0e-03
BDNF	ab1502	BDNF_HUMAN	P23560	BDNF	-0.82	11.89	9.2e-03
K2C8	ab0072	K2C8_HUMAN	P05787	KRT8	-0.82	12.36	2.9e-02
IL18	ab1511	IL18_HUMAN	Q14116	IL18	-0.88	10.82	3.2e-06
PIM2	ab1022	PIM2_HUMAN	Q9P1W9	PIM2	-0.88	12.29	2.6e-03
CCL22	ab1600	CCL22_HUMAN	O00626	CCL22	-0.88	8.67	3.1e-02
GLPA	ab1491	GLPA_HUMAN	P02724	GYPA	-0.89	13.23	5.4e-03
RENI	ab2133	RENI_HUMAN	P00797	REN	-0.90	8.79	4.3e-03
HAVR1	ab2781	HAVR1_HUMAN	Q96D42	HAVCR1	-0.90	8.37	9.1e-03
MAD4	ab0066	MAD4_HUMAN	Q14582	MXD4	-0.93	10.45	2.1e-03
SDC1	ab1576	SDC1_HUMAN	P18827	SDC1	-0.93	13.12	9.7e-03
AGRP	ab1843	AGRP_HUMAN	O00253	AGRP	-0.93	9.38	1.3e-02
LEP	ab2340	LEP_HUMAN	P41159	LEP	-0.94	8.19	2.9e-02
MLP3B	ab0078	MLP3B_HUMAN	Q9GZQ8	MAP1LC3B	-0.95	10.39	8.3e-05
B3GA1	ab1568	B3GA1_HUMAN	Q9P2W7	B3GAT1	-0.95	12.74	1.8e-04
CD33	ab1562	CD33_HUMAN	P20138	CD33	-0.95	12.85	1.1e-03
TNR8	ab1423	TNR8_HUMAN	P28908	TNFRSF8	-0.96	10.73	5.3e-07
ITAE	ab1573	ITAE_HUMAN	P38570	ITGAE	-0.96	11.86	3.9e-03
PCSK9	ab2710	PCSK9_HUMAN	Q8NBP7	PCSK9	-0.97	8.45	2.5e-06
IL2	ab1901	IL2_HUMAN	P60568	IL2	-0.97	15.63	4.8e-04
NEP	ab1029	NEP_HUMAN	P08473	MME	-0.97	10.52	6.7e-04
CRLF2	ab1498	CRLF2_HUMAN	Q9HC73	CRLF2	-0.98	11.19	8.9e-06
MELPH	ab0077	MELPH_HUMAN	Q9BV36	MLPH	-1.01	10.50	3.5e-05
TSP3	ab1170	TSP3_HUMAN	P49746	THBS3	-1.01	12.64	4.4e-03
PRTN3	ab1501	PRTN3_HUMAN	P24158	PRTN3	-1.03	10.11	6.4e-05
LYAM3	ab1570	LYAM3_HUMAN	P16109	SELP	-1.06	12.78	3.1e-03
IL2	ab1115	IL2_HUMAN	P60568	IL2	-1.09	15.41	2.1e-02
TNR14	ab1765	TNR14_HUMAN	Q92956	TNFRSF14	-1.10	10.73	5.1e-05
BDNF	ab2106	BDNF_HUMAN	P23560	BDNF	-1.11	10.06	2.8e-03
AKA12	ab0067	AKA12_HUMAN	Q02952	AKAP12	-1.12	10.45	1.7e-05

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Table 2 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
IL10	ab1684	IL10_HUMAN	P22301	IL10	-1.12	11.15	3.8e-02
TRFE	ab1300	TRFE_HUMAN	P02787	TF	-1.13	15.22	1.4e-02
PERM	ab1514	PERM_HUMAN	P05164	MPO	-1.19	10.30	1.2e-02
GPX4	ab0495	GPX4_HUMAN	P36969	GPX4	-1.27	11.93	1.6e-02
1C01	ab0754	1C01_HUMAN	P30499	HLA-C	-1.27	11.81	2.9e-02
DRA	ab1581	DRA_HUMAN	P01903	HLA-DRA	-1.31	11.52	4.2e-02
IL15	ab1510	IL15_HUMAN	P40933	IL15	-1.31	13.62	4.2e-02
CALB1	ab1911	CALB1_HUMAN	P05937	CALB1	-1.57	11.48	6.2e-06
DLK1	ab1801	DLK1_HUMAN	P80370	DLK1	-1.78	10.70	2.3e-04

3.2.2 Untreated Day20: PAT vs WT

Between PAT-untreated Day20 and WT-untreated Day20, 324 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 6) and listed in Table 3.

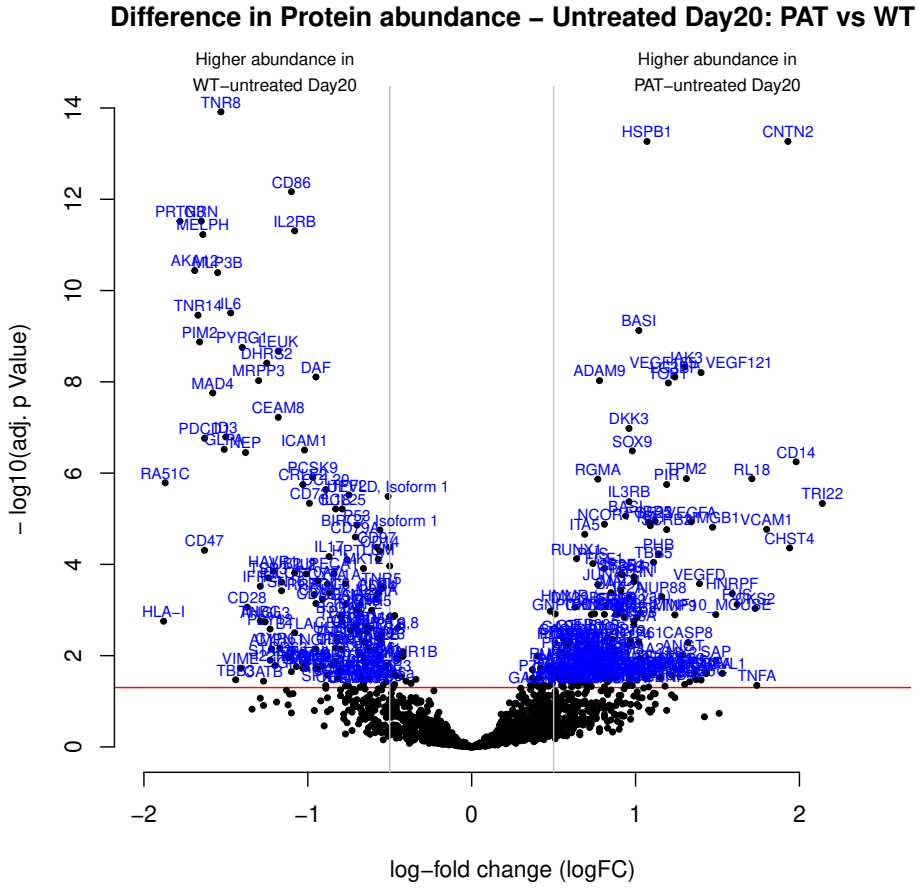

Figure 6: Several proteins exhibited distinct abundance variations in PAT-untreated Day20 and WT-untreated Day20. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-untreated Day20, proteins with a negative value in WT-untreated Day20.

Table 3: Proteins with differential abundance in PAT-untreated Day20 and WT-untreated Day20. Proteins with a positive logFC value had a higher abundance in PAT-untreated Day20, proteins with a negative value in WT-untreated Day20. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
TRI22	ab0514	TRI22_HUMAN	Q8IYM9	TRIM22	2.14	9.68	4.6e-06
CD14	ab2267	CD14_HUMAN	P08571	CD14	1.98	13.39	5.7e-07
CHST4	ab0623	CHST4_HUMAN	Q8NCG5	CHST4	1.94	7.76	4.4e-05
CNTN2	ab2731	CNTN2_HUMAN	Q02246	CNTN2	1.93	11.35	5.4e-14
VCAM1	ab0803	VCAM1_HUMAN	P19320	VCAM1	1.80	9.76	1.7e-05
TNFA	ab0207	TNFA_HUMAN	P01375	TNF	1.74	7.04	4.5e-02
CKS2	ab0877	CKS2_HUMAN	P33552	CKS2	1.73	12.88	9.2e-04
RL18	ab1280	RL18_HUMAN	Q07020	RPL18	1.71	10.64	1.3e-06
FUS	ab0836	FUS_HUMAN	P35637	FUS	1.62	10.18	7.5e-04
HNRPF	ab0555	HNRPF_HUMAN	P52597	HNRNPF	1.59	12.49	4.4e-04
ACVL1	ab2786	ACVL1_HUMAN	P37023	ACVRL1	1.53	12.04	2.4e-02
TNF10_MOUSE	ab1223	TNF10_MOUSE	P50592	Tnfsf10	1.49	13.89	1.3e-03
SAP	ab2787	SAP_HUMAN	P07602	PSAP	1.49	11.91	1.3e-02
HMGB1	ab0690	HMGB1_HUMAN	P09429	HMGB1	1.47	9.79	1.5e-05
BMF	ab1040	BMF_HUMAN	Q96LC9	BMF	1.43	12.63	2.3e-02
VEGFA	ab0205	VEGFA_HUMAN	P15692	VEGFA	1.43	6.88	2.5e-02
VEGF165, VEGF121	ab2469		P15692	VEGFA	1.40	10.21	6.3e-09
VEGFC	ab1615	VEGFC_HUMAN	P49767	VEGFC	1.40	7.88	3.4e-02
VEGFD	ab1848	VEGFD_HUMAN	O43915	VEGFD	1.39	10.14	2.6e-04
SPB5	ab1320	SPB5_HUMAN	P36952	SERPINB5	1.37	13.15	3.4e-02
MUC3A	ab0672	MUC3A_HUMAN	Q02505	MUC3A	1.36	11.29	2.4e-02
VEGFA	ab1603	VEGFA_HUMAN	P15692	VEGFA	1.34	10.48	1.2e-05
CR2	ab0988	CR2_HUMAN	P20023	CR2	1.33	10.78	3.7e-02
CASP8	ab1097	CASP8_HUMAN	Q14790	CASP8	1.32	8.50	5.2e-03
TPM2	ab1078	TPM2_HUMAN	P07951	TPM2	1.31	9.62	1.3e-06
JAK3	ab1149	JAK3_HUMAN	P52333	JAK3	1.30	13.62	4.7e-09
CD47	ab2015	CD47_HUMAN	Q08722	CD47	1.30	12.96	4.3e-02
ANGT	ab0528	ANGT_HUMAN	P01019	AGT	1.29	7.21	9.6e-03
MX2	ab1268	MX2_HUMAN	P20592	MX2	1.28	9.12	1.4e-02
SF3B3	ab0727	SF3B3_HUMAN	Q15393	SF3B3	1.28	12.51	1.9e-02
CADH5	ab1231	CADH5_HUMAN	P33151	CDH5	1.28	11.52	2.0e-02
LG3BP	ab2699	LG3BP_HUMAN	Q08380	LGALS3BP	1.24	11.41	7.8e-09
MMP9	ab1161	MMP9_HUMAN	P14780	MMP9	1.24	11.62	1.3e-03
TEP1	ab0511	TEP1_HUMAN	Q99973	TEP1	1.24	9.50	1.9e-02
GSTP1	ab1091	GSTP1_HUMAN	P09211	GSTP1	1.22	12.80	2.7e-02
TOP1	ab1298	TOP1_HUMAN	P11387	TOP1	1.20	12.95	1.1e-08
PIR	ab0873	PIR_HUMAN	O00625	PIR	1.19	10.21	1.8e-06
SCRB2	ab2146	SCRB2_HUMAN	Q14108	SCARB2	1.19	9.56	1.7e-05
BDNF	ab2677	BDNF_HUMAN	P23560	BDNF	1.18	12.70	4.7e-02
FUT8	ab1003	FUT8_HUMAN	Q9BYC5	FUT8	1.17	10.55	1.7e-02
NUP88	ab0712	NUP88_HUMAN	Q99567	NUP88	1.16	9.77	5.1e-04
CSF1R	ab1925	CSF1R_HUMAN	P07333	CSF1R	1.15	12.98	3.0e-02
PHB	ab1174	PHB_HUMAN	P35232	PHB	1.14	9.27	5.9e-05
IBP5	ab0475	IBP5_HUMAN	P24593	IGFBP5	1.12	10.66	1.1e-05
TBB5	ab0515	TBB5_HUMAN	P07437	TUBB	1.11	13.79	9.0e-05
SLAF1	ab2132	SLAF1_HUMAN	Q13291	SLAMF1	1.11	10.23	2.4e-02
TLR3	ab2700	TLR3_HUMAN	O15455	TLR3	1.10	14.85	2.3e-02
TIA1	ab0470	TIA1_HUMAN	P31483	TIA1	1.09	12.53	1.4e-05
FGF23	ab2215	FGF23_HUMAN	Q9GZV9	FGF23	1.08	9.98	1.2e-05
PRTN3	ab1856	PRTN3_HUMAN	P24158	PRTN3	1.08	11.14	2.8e-02
IRF4	ab1010	IRF4_HUMAN	Q15306	IRF4	1.08	13.34	4.8e-02
HSPB1	ab2305	HSPB1_HUMAN	P04792	HSPB1	1.07	11.61	5.4e-14
NGAL	ab0161	NGAL_HUMAN	P80188	LCN2	1.06	7.97	3.1e-02
IBP2	ab1835	IBP2_HUMAN	P18065	IGFBP2	1.05	11.19	2.6e-02
PGH2	ab0643	PGH2_HUMAN	P35354	PTGS2	1.03	10.30	1.2e-03
TP4A2	ab0030	TP4A2_HUMAN	Q12974	PTP4A2	1.03	6.79	1.1e-02
CYTL1	ab1670	CYTL1_HUMAN	Q9NRR1	CYTL1	1.03	12.85	2.2e-02
BASI	ab1910	BASI_HUMAN	P35613	BSG	1.02	14.74	7.5e-10

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Table 3 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CYR61	ab2762	CYR61_HUMAN	O00622	CYR61	1.02	9.08	5.1e-03
DAB2	ab0123	DAB2_HUMAN	P98082	DAB2	1.01	8.85	1.5e-03
IMA1	ab0705	IMA1_HUMAN	P52292	KPNA2	1.01	7.89	3.4e-02
TRXR1	ab0837	TRXR1_HUMAN	Q16881	TXNRD1	0.99	11.06	1.9e-04
ATRN	ab2721	ATRN_HUMAN	O75882	ATRN	0.99	9.63	2.4e-04
ZN593	ab0767	ZN593_HUMAN	O00488	ZNF593	0.99	10.53	1.7e-03
Z385A	ab0755	Z385A_HUMAN	Q96PM9	ZNF385A	0.99	10.13	2.1e-03
VEGF165b	ab2464		P15692	VEGFA	0.99	11.81	2.3e-02
SOX9	ab1162	SOX9_HUMAN	P48436	SOX9	0.98	12.18	3.3e-07
RIN1	ab0130	RIN1_HUMAN	Q13671	RIN1	0.98	13.97	4.5e-02
IL13	ab1717	IL13_HUMAN	P35225	IL13	0.97	11.54	4.7e-03
TSP2	ab0694	TSP2_HUMAN	P35442	THBS2	0.97	12.23	1.9e-02
SFRP1	ab1294	SFRP1_HUMAN	Q8N474	SFRP1	0.97	9.56	3.3e-02
DKK3	ab0493	DKK3_HUMAN	Q9UBP4	DKK3	0.96	10.97	1.1e-07
IL3RB	ab1551	IL3RB_HUMAN	P32927	CSF2RB	0.96	9.19	4.2e-06
IF2A	ab0699	IF2A_HUMAN	P05198	EIF2S1	0.96	9.46	5.3e-04
ZN124	ab0538	ZN124_HUMAN	Q15973	ZNF124	0.96	8.05	5.6e-03
B2CL2	ab1228	B2CL2_HUMAN	Q92843	BCL2L2	0.96	10.78	2.6e-02
LRRF2 (splice var.)	ab2826		Q9Y608	LRRFIP2	0.96	9.52	3.4e-02
ANXA2	ab0619	ANXA2_HUMAN	P07355	ANXA2	0.96	9.97	4.5e-02
BASI	ab1486	BASI_HUMAN	P35613	BSG	0.94	14.76	8.7e-06
IFNG	ab1648	IFNG_HUMAN	P01579	IFNG	0.94	10.73	4.5e-02
MK	ab2370	MK_HUMAN	P21741	MDK	0.93	10.68	1.4e-03
SF3B4	ab0743	SF3B4_HUMAN	Q15427	SF3B4	0.92	10.89	1.7e-04
UB2E1	ab1301	UB2E1_HUMAN	P51965	UBE2E1	0.91	10.27	1.6e-04
MAD1	ab0824	MAD1_HUMAN	Q05195	MXD1	0.91	8.86	3.7e-04
ERBB2	ab0846	ERBB2_HUMAN	P04626	ERBB2	0.91	10.33	9.8e-04
FGF7	ab0706	FGF7_HUMAN	P21781	FGF7	0.89	8.67	9.1e-04
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	0.89	13.56	1.2e-03
SGSM3	ab0729	SGSM3_HUMAN	Q96HU1	SGSM3	0.89	9.20	1.1e-02
IGHA1	ab0126	IGHA1_HUMAN	P01876	IGHA1	0.88	9.67	1.2e-03
FCG2B	ab1803	FCG2B_HUMAN	P31994	FCGR2B	0.88	11.10	8.3e-03
NTF4	ab2237	NTF4_HUMAN	P34130	NTF4	0.88	10.41	3.1e-02
SRBP1	ab0659	SRBP1_HUMAN	P36956	SREBF1	0.86	8.71	4.4e-03
CCL2	ab2435	CCL2_HUMAN	P13500	CCL2	0.86	10.12	6.5e-03
BAX	ab0704	BAX_HUMAN	Q07812	BAX	0.85	9.19	4.2e-04
DDR1	ab2832	DDR1_HUMAN	Q08345	DDR1	0.85	9.29	1.4e-02
RLA0	ab0808	RLA0_HUMAN	P05388	RPLP0	0.85	6.97	1.6e-02
MPRI	ab0484	MPRI_HUMAN	P11717	IGF2R	0.85	8.80	1.7e-02
IL21	ab1325	IL21_HUMAN	Q9HBE4	IL21	0.85	9.88	1.9e-02
TSLP	ab1661	TSLP_HUMAN	Q969D9	TSLP	0.85	9.46	2.2e-02
VCAM1	ab1792	VCAM1_HUMAN	P19320	VCAM1	0.85	9.62	3.1e-02
ICOS	ab2742	ICOS_HUMAN	Q9Y6W8	ICOS	0.83	12.96	4.0e-03
ABCG2	ab0673	ABCG2_HUMAN	Q9UNQ0	ABCG2	0.83	9.03	3.7e-02
HMMR (splice var.)	ab2833		O75330	HMMR	0.82	9.09	7.9e-04
NCOR1	ab1269	NCOR1_HUMAN	O75376	NCOR1	0.81	11.31	1.3e-05
FGF1	ab1055	FGF1_HUMAN	P05230	FGF1	0.81	11.62	1.2e-04
HNRPC	ab0723	HNRPC_HUMAN	P07910	HNRNPC	0.81	9.60	1.3e-03
MMP9	ab2439	MMP9_HUMAN	P14780	MMP9	0.81	10.71	9.2e-03
MLH3	ab1189	MLH3_HUMAN	Q9UHC1	MLH3	0.81	10.02	9.9e-03
SMAD4	ab0590	SMAD4_HUMAN	Q13485	SMAD4	0.81	8.94	1.7e-02
GPI8	ab1317	GPI8_HUMAN	Q92643	PIGK	0.81	11.51	4.8e-02
IL9	ab2252	IL9_HUMAN	P15248	IL9	0.80	7.90	1.1e-02
CADH1	ab2412	CADH1_HUMAN	P12830	CDH1	0.80	11.14	2.3e-02
FAS	ab0022	FAS_HUMAN	P49327	FASN	0.80	9.05	3.1e-02
ACTN1	ab2831	ACTN1_HUMAN	P12814	ACTN1	0.79	9.74	1.6e-02
PRAF3	ab1195	PRAF3_HUMAN	O75915	ARL6IP5	0.79	12.11	3.1e-02
ADAM9	ab1924	ADAM9_HUMAN	Q13443	ADAM9	0.78	11.44	9.4e-09
RGMA	ab2023	RGMA_HUMAN	Q96B86	RGMA	0.77	12.07	1.4e-06
JUN	ab1107	JUN_HUMAN	P05412	JUN	0.77	9.77	2.8e-04
EP300	ab0740	EP300_HUMAN	Q09472	EP300	0.76	8.32	3.4e-03

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
IL1A	ab0713	IL1A_HUMAN	P01583	IL1A	0.76	9.23	6.7e-03
RUNX1 (splice var.)	ab2828		Q01196	RUNX1	0.76	8.68	1.5e-02
IL6	ab0211	IL6_HUMAN	P05231	IL6	0.76	9.96	1.7e-02
RHG01	ab0633	RHG01_HUMAN	Q07960	ARHGAP1	0.76	9.66	3.0e-02
PD1L2	ab1020	PD1L2_HUMAN	Q9BQ51	PDCD1LG2	0.75	14.29	1.2e-03
SLAF8	ab2129	SLAF8_HUMAN	Q9P0V8	SLAMF8	0.75	14.09	1.2e-02
EGF	ab1160	EGF_HUMAN	P01133	EGF	0.75	12.32	1.4e-02
NMDE3	ab0549	NMDE3_HUMAN	Q14957	GRIN2C	0.75	10.08	1.9e-02
PHS	ab0797	PHS_HUMAN	P61457	PCBD1	0.74	9.44	9.6e-05
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	0.73	14.09	1.3e-03
PLSL	ab0594	PLSL_HUMAN	P13796	LCP1	0.73	10.98	4.7e-02
ICAM2	ab0662	ICAM2_HUMAN	P13598	ICAM2	0.72	8.36	5.6e-03
IL13	ab1716	IL13_HUMAN	P35225	IL13	0.72	11.01	6.4e-03
TCEA1	ab0660	TCEA1_HUMAN	P23193	TCEA1	0.72	9.39	6.8e-03
IBP3	ab0474	IBP3_HUMAN	P17936	IGFBP3	0.72	11.31	4.0e-02
AFAD	ab0819	AFAD_HUMAN	P55196	AFDN	0.71	9.60	6.4e-03
STA5A	ab1150	STA5A_HUMAN	P42229	STAT5A	0.71	11.18	1.4e-02
ARI4A	ab0795	ARI4A_HUMAN	P29374	ARID4A	0.71	9.31	4.9e-02
BRAF	ab0543	BRAF_HUMAN	P15056	BRAF	0.70	8.86	3.4e-02
ITA5	ab1565	ITA5_HUMAN	P08648	ITGA5	0.69	11.55	2.2e-05
PRDM1	ab0864	PRDM1_HUMAN	O75626	PRDM1	0.69	7.92	1.9e-02
RRP8	ab0784	RRP8_HUMAN	O43159	RRP8	0.69	7.55	3.4e-02
NBL1	ab1953	NBL1_HUMAN	P41271	NBL1	0.69	10.78	4.1e-02
OTUB1	ab0026	OTUB1_HUMAN	Q96FW1	OTUB1	0.67	14.51	3.6e-03
PDCD2	ab0566	PDCD2_HUMAN	Q16342	PDCD2	0.67	11.47	1.6e-02
AKA12	ab0487	AKA12_HUMAN	Q02952	AKAP12	0.67	7.04	3.9e-02
DKK1	ab1094	DKK1_HUMAN	O94907	DKK1	0.66	9.38	2.0e-02
DNLI3	ab0818	DNLI3_HUMAN	P49916	LIG3	0.65	9.33	5.3e-03
VGFR1	ab0128	VGFR1_HUMAN	P17948	FLT1	0.65	9.40	2.4e-02
CTGF	ab0472	CTGF_HUMAN	P29279	CTGF	0.65	10.13	2.7e-02
CD22	ab1413	CD22_HUMAN	P20273	CD22	0.65	10.34	3.4e-02
HNRPR	ab0702	HNRPR_HUMAN	O43390	HNRNPR	0.65	8.90	3.9e-02
NPY1R	ab0692	NPY1R_HUMAN	P25929	NPY1R	0.65	8.22	4.6e-02
RUNX1	ab2827	RUNX1_HUMAN	Q01196	RUNX1	0.64	8.76	7.5e-05
FILA	ab1199	FILA_HUMAN	P20930	FLG	0.64	8.74	6.8e-03
CD57	ab1460				0.64	10.30	1.2e-02
CKAP2	ab0816	CKAP2_HUMAN	Q8WWK9	CKAP2	0.64	9.97	1.3e-02
IBP2	ab0664	IBP2_HUMAN	P18065	IGFBP2	0.64	8.06	4.0e-02
DX39B	ab0715	DX39B_HUMAN	Q13838	DDX39B	0.63	11.21	8.7e-04
P73 (splice var.)	ab2829		O15350	TP73	0.62	8.76	2.6e-02
LEUK	ab0991	LEUK_HUMAN	P16150	SPN	0.62	12.11	3.4e-02
APEX1	ab0584	APEX1_HUMAN	P27695	APEX1	0.61	7.75	3.1e-02
IL12p70	ab1681		P29459	IL12A	0.61	10.23	4.0e-02
GASR (splice var.)	ab2825		P32239	CCKBR	0.61	9.02	4.9e-02
PGH1	ab1520	PGH1_HUMAN	P23219	PTGS1	0.60	9.36	4.9e-03
REL3	ab2803	REL3_HUMAN	Q8WXF3	RLN3	0.60	9.65	1.1e-02
IGF1R	ab1995	IGF1R_HUMAN	P08069	IGF1R	0.59	12.10	2.3e-02
IL6RA	ab2433	IL6RA_HUMAN	P08887	IL6R	0.59	9.84	3.4e-02
IRF2	ab1256	IRF2_HUMAN	P14316	IRF2	0.58	10.17	6.1e-03
PTPRS	ab0035	PTPRS_HUMAN	Q13332	PTPRS	0.57	9.34	5.5e-03
CASPA	ab0489	CASPA_HUMAN	Q92851	CASP10	0.56	9.91	4.4e-03
CING	ab1193	CING_HUMAN	Q9P2M7	CGN	0.56	8.88	3.1e-02
PGAM5	ab0034	PGAM5_HUMAN	Q96HS1	PGAM5	0.56	11.32	3.7e-02
Ubiquitin+1	ab2225		P0CG47	UBB	0.56	10.79	4.9e-02
GAS6	ab1786	GAS6_HUMAN	Q14393	GAS6	0.55	10.18	3.6e-03
PGK1	ab1035	PGK1_HUMAN	P00558	PGK1	0.55	10.31	8.4e-03
MTHR	ab0670	MTHR_HUMAN	P42898	MTHFR	0.55	13.09	1.5e-02
ACTG	ab0842	ACTG_HUMAN	P63261	ACTG1	0.55	9.47	3.1e-02
MMP1	ab2755	MMP1_HUMAN	P03956	MMP1	0.55	10.23	3.8e-02
CUED2	ab0051	CUED2_HUMAN	Q9H467	CUEDC2	0.55	9.39	4.5e-02
GASP2	ab2153	GASP2_HUMAN	Q96D09	GPRASP2	0.53	9.65	1.9e-02

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
TF	ab2202	TF_HUMAN	P13726	F3	0.52	10.45	1.9e-02
PLGF	ab0121	PLGF_HUMAN	P49763	PGF	0.52	10.17	2.0e-02
CLD10	ab0746	CLD10_HUMAN	P78369	CLDN10	0.52	10.29	3.0e-02
GNPI1	ab1316	GNPI1_HUMAN	P46926	GNPDA1	0.51	10.85	1.2e-03
RL29	ab1281	RL29_HUMAN	P47914	RPL29	0.51	10.25	5.3e-03
UEVLD, Isoform 1	ab0060	UEVLD_HUMAN	Q8IX04	UEVLD	-0.51	9.93	3.2e-06
AZI2	ab0082	AZI2_HUMAN	Q9H6S1	AZI2	-0.52	10.85	1.6e-02
ERBB3	ab0458	ERBB3_HUMAN	P21860	ERBB3	-0.52	8.81	2.7e-02
CD235a	ab1636	GLPA_HUMAN	P02724	GYPA	-0.52	11.35	3.8e-02
CD63	ab1468	CD63_HUMAN	P08962	CD63	-0.54	9.99	4.4e-02
TNR5	ab1430	TNR5_HUMAN	P25942	CD40	-0.55	11.19	3.4e-04
KLOTB	ab2691	KLOTB_HUMAN	Q86Z14	KLB	-0.55	10.69	3.4e-03
CCL23	ab2150	CCL23_HUMAN	P55773	CCL23	-0.55	9.89	5.3e-03
K2C5	ab1346	K2C5_HUMAN	P13647	KRT5	-0.55	11.39	1.9e-02
BIRC7, Isoform 1	ab0057	BIRC7_HUMAN	Q96CA5	BIRC7	-0.56	11.90	1.8e-05
CD14	ab1627	CD14_HUMAN	P08571	CD14	-0.56	15.80	5.1e-05
IL12B	ab1731	IL12B_HUMAN	P29460	IL12B	-0.56	11.34	5.5e-03
CD6	ab1368	CD6_HUMAN	P30203	CD6	-0.56	10.93	1.1e-02
IL25	ab1327	IL25_HUMAN	Q9H293	IL25	-0.56	9.08	2.6e-02
LUM	ab2814	LUM_HUMAN	P51884	LUM	-0.57	11.52	7.7e-05
ALBU	ab2778	ALBU_HUMAN	P02768	ALB	-0.57	11.40	4.2e-04
ARHGC	ab0039	ARHGC_HUMAN	Q9NZN5	ARHGEF12	-0.57	8.87	4.1e-03
ICAM1	ab0661	ICAM1_HUMAN	P05362	ICAM1	-0.57	10.16	1.1e-02
CD97	ab1479	CD97_HUMAN	P48960	CD97	-0.58	12.29	4.2e-05
CD34	ab1426	CD34_HUMAN	P28906	CD34	-0.58	11.34	4.8e-04
IL2RA	ab1417	IL2RA_HUMAN	P01589	IL2RA	-0.58	11.61	5.8e-04
LGMN	ab2408	LGMN_HUMAN	Q99538	LGMN	-0.58	9.03	1.4e-02
TNR5	ab1752	TNR5_HUMAN	P25942	CD40	-0.61	9.11	1.0e-03
TFF1	ab2792	TFF1_HUMAN	P04155	TFF1	-0.61	11.21	1.4e-02
CD5	ab1366	CD5_HUMAN	P06127	CD5	-0.62	10.67	2.5e-03
ITAM	ab1387	ITAM_HUMAN	P11215	ITGAM	-0.63	9.40	6.8e-03
IBP6	ab1979	IBP6_HUMAN	P24592	IGFBP6	-0.63	8.79	2.2e-02
OLFM4	ab0164	OLFM4_HUMAN	Q6UX06	OLFM4	-0.63	10.08	3.1e-02
GSTM4	ab1253	GSTM4_HUMAN	Q03013	GSTM4	-0.64	12.80	2.3e-03
CEAM1,3,5,6,8	ab1628		P13688	CEACAM1	-0.64	11.80	3.0e-03
S10A8/9	ab1624				-0.65	10.48	5.1e-03
LFA3	ab1462	LFA3_HUMAN	P19256	CD58	-0.65	11.49	1.8e-02
MK12	ab0071	MK12_HUMAN	P53778	MAPK12	-0.66	11.44	1.2e-04
CD8A	ab1376	CD8A_HUMAN	P01732	CD8A	-0.66	9.62	1.0e-02
Fc fusion with TNR1B	ab0520				-0.66	9.30	1.3e-02
S10A8/9	ab2724				-0.66	9.37	3.5e-02
S10A9	ab0769	S10A9_HUMAN	P06702	S100A9	-0.66	10.83	4.2e-02
ISOC2	ab0073	ISOC2_HUMAN	Q96AB3	ISOC2	-0.68	12.12	7.6e-04
MMP2	ab0854	MMP2_HUMAN	P08253	MMP2	-0.68	11.01	1.2e-03
CCL3	ab1795	CCL3_HUMAN	P10147	CCL3	-0.68	9.03	2.7e-02
SFRP3	ab1295	SFRP3_HUMAN	Q92765	FRZB	-0.68	9.51	3.0e-02
CEAM5,8	ab1634		P06731	CEACAM5	-0.68	14.25	4.9e-02
CD8A	ab1375	CD8A_HUMAN	P01732	CD8A	-0.68	10.40	4.9e-02
CCL5	ab1671	CCL5_HUMAN	P13501	CCL5	-0.69	10.60	3.1e-03
RN141	ab0052	RN141_HUMAN	Q8WVD5	RNF141	-0.69	9.75	8.4e-03
MK08	ab0007	MK08_HUMAN	P45983	MAPK8	-0.69	9.54	2.2e-02
P53	ab1517	P53_HUMAN	P04637	TP53	-0.70	11.24	1.4e-05
K1C18	ab0581	K1C18_HUMAN	P05783	KRT18	-0.70	11.29	9.7e-04
CD79A	ab1475	CD79A_HUMAN	P11912	CD79A	-0.71	10.59	2.5e-05
VTCN1	ab1131	VTCN1_HUMAN	Q7Z7D3	VTCN1	-0.72	9.49	2.3e-03
CD27	ab0989	CD27_HUMAN	P26842	CD27	-0.74	8.79	2.8e-03
TFF2	ab1895	TFF2_HUMAN	Q03403	TFF2	-0.75	8.90	3.0e-06
CEAM3,5	ab1629		P40198	CEACAM3	-0.75	8.57	4.7e-02
HPT	ab1194	HPT_HUMAN	P00738	HP	-0.76	11.80	7.9e-05
IL1A	ab1688	IL1A_HUMAN	P01583	IL1A	-0.77	8.81	2.6e-04
CEAM5	ab2720	CEAM5_HUMAN	P06731	CEACAM5	-0.77	9.89	7.5e-04

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
LY75	ab1036	LY75_HUMAN	O60449	LY75	-0.77	8.52	4.6e-02
CCL25	ab1601	CCL25_HUMAN	O15444	CCL25	-0.79	9.21	6.1e-06
TP4A2	ab0023	TP4A2_HUMAN	Q12974	PTP4A2	-0.79	8.86	1.7e-03
B3GA1	ab1568	B3GA1_HUMAN	Q9P2W7	B3GAT1	-0.80	12.74	1.4e-03
TIMP3	ab1095	TIMP3_HUMAN	P35625	TIMP3	-0.80	11.71	7.2e-03
CCL5	ab1672	CCL5_HUMAN	P13501	CCL5	-0.81	9.72	2.1e-02
ULBP1	ab2753	ULBP1_HUMAN	Q9BZM6	ULBP1	-0.82	8.87	4.0e-03
TNFL8	ab1171	TNFL8_HUMAN	P32971	TNFSF8	-0.82	8.83	4.8e-03
CCL22	ab1600	CCL22_HUMAN	O00626	CCL22	-0.82	8.67	3.3e-02
IL18	ab1511	IL18_HUMAN	Q14116	IL18	-0.83	10.82	6.1e-06
CD99	ab1482	CD99_HUMAN	P14209	CD99	-0.83	11.53	6.8e-03
IL10	ab1008	IL10_HUMAN	P22301	IL10	-0.83	8.58	1.3e-02
PECA1	ab1535	PECA1_HUMAN	P16284	PECAM1	-0.84	10.13	1.6e-04
CCL15	ab1789	CCL15_HUMAN	Q16663	CCL15	-0.85	8.98	1.6e-02
IL17	ab2102	IL17_HUMAN	Q16552	IL17A	-0.87	9.53	6.7e-05
EDIL3	ab2705	EDIL3_HUMAN	O43854	EDIL3	-0.87	12.64	4.2e-04
CYTA	ab1240	CYTA_HUMAN	P01040	CSTA	-0.88	8.63	2.7e-04
ADAM8	ab1936	ADAM8_HUMAN	P78325	ADAM8	-0.88	8.89	2.7e-02
CCL20	ab1598	CCL20_HUMAN	P78556	CCL20	-0.89	11.42	2.3e-06
SPRL1	ab2804	SPRL1_HUMAN	Q14515	SPARCL1	-0.89	10.86	4.5e-02
CCL17	ab2448	CCL17_HUMAN	Q92583	CCL17	-0.91	8.62	5.8e-04
SIGL5	ab2282	SIGL5_HUMAN	O15389	SIGLEC5	-0.91	9.08	1.7e-02
S10A7	ab0855	S10A7_HUMAN	P31151	S100A7	-0.94	10.32	2.3e-04
LEP	ab2340	LEP_HUMAN	P41159	LEP	-0.94	8.19	1.9e-02
DAF	ab1457	DAF_HUMAN	P08174	CD55	-0.95	8.43	7.8e-09
CD33	ab1562	CD33_HUMAN	P20138	CD33	-0.95	12.85	7.2e-04
NGF	ab1833	NGF_HUMAN	P01138	NGF	-0.95	7.99	7.2e-03
HAVR2	ab1135	HAVR2_HUMAN	Q8TDQ0	HAVCR2	-0.95	10.84	1.9e-02
RRAGC	ab0076	RRAGC_HUMAN	Q9HB90	RRAGC	-0.96	10.29	4.6e-04
PCSK9	ab2710	PCSK9_HUMAN	Q8NBP7	PCSK9	-0.97	8.45	1.2e-06
CD72	ab1473	CD72_HUMAN	P21854	CD72	-0.99	12.35	4.6e-06
IL2	ab1901	IL2_HUMAN	P60568	IL2	-1.01	15.63	1.6e-04
TNF10	ab2073	TNF10_HUMAN	P50591	TNFSF10	-1.01	8.59	1.4e-02
MYC	ab1015	MYC_HUMAN	P01106	MYC	-1.01	10.21	1.9e-02
ICAM1	ab1454	ICAM1_HUMAN	P05362	ICAM1	-1.02	11.05	3.1e-07
LTOR1	ab0768	LTOR1_HUMAN	Q6IAA8	LAMTOR1	-1.02	12.81	1.6e-02
CRLF2	ab1498	CRLF2_HUMAN	Q9HC73	CRLF2	-1.03	11.19	1.8e-06
OX2G	ab1754	OX2G_HUMAN	P41217	CD200	-1.03	8.48	1.9e-02
IL2	ab1115	IL2_HUMAN	P60568	IL2	-1.07	15.41	1.7e-02
IL2RB	ab1575	IL2RB_HUMAN	P14784	IL2RB	-1.08	10.36	4.9e-12
UB2J1	ab1303	UB2J1_HUMAN	Q9Y385	UBE2J1	-1.08	13.65	1.5e-04
BTLA	ab1132	BTLA_HUMAN	Q7Z6A9	BTLA	-1.08	14.16	3.2e-03
CD86	ab1477	CD86_HUMAN	P42081	CD86	-1.10	10.10	6.8e-13
IGKC	ab1583	IGKC_HUMAN	P01834	IGKC	-1.10	11.03	2.2e-02
CD63	ab1546	CD63_HUMAN	P08962	CD63	-1.12	11.06	1.1e-02
IGLC1	ab1584	IGLC1_HUMAN	P0CG04	IGLC1	-1.16	13.22	2.4e-04
TSN16	ab0083	TSN16_HUMAN	Q9UKR8	TSPAN16	-1.16	10.66	3.8e-04
CYR61	ab0473	CYR61_HUMAN	O00622	CYR61	-1.17	11.62	6.9e-03
LEUK	ab1434	LEUK_HUMAN	P16150	SPN	-1.18	12.18	2.1e-09
CEAM8	ab1577	CEAM8_HUMAN	P31997	CEACAM8	-1.18	8.93	6.0e-08
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.20	15.34	1.6e-02
HAVR1	ab2781	HAVR1_HUMAN	Q96D42	HAVCR1	-1.21	8.37	1.4e-04
AMPN	ab1390	AMPN_HUMAN	P15144	ANPEP	-1.22	13.71	7.2e-03
P2Y12	ab1144	P2Y12_HUMAN	Q9H244	P2RY12	-1.23	10.38	2.6e-03
STAT3	ab1042	STAT3_HUMAN	P40763	STAT3	-1.23	14.90	1.3e-02
TSP3	ab1170	TSP3_HUMAN	P49746	THBS3	-1.24	12.64	2.0e-04
DHRS2	ab0081	DHRS2_HUMAN	Q13268	DHRS2	-1.25	10.17	3.9e-09
ANGL3	ab2823	ANGL3_HUMAN	Q9Y5C1	ANGPTL3	-1.26	14.06	1.8e-03
CATB	ab1172	CATB_HUMAN	P07858	CTSB	-1.27	12.67	3.6e-02
IFIT2	ab0084	IFIT2_HUMAN	P09913	IFIT2	-1.29	10.59	3.0e-04
THBG	ab2140	THBG_HUMAN	P05543	SERPINA7	-1.29	8.53	1.7e-03

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Table 3 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
MRPP3	ab1266	MRPP3_HUMAN	O15091	KIAA0391	-1.30	11.11	9.4e-09
CD28	ab1420	CD28_HUMAN	P10747	CD28	-1.37	10.16	8.7e-04
NEP	ab1029	NEP_HUMAN	P08473	MME	-1.38	10.52	3.5e-07
PYRG1	ab0085	PYRG1_HUMAN	P17812	CTPS1	-1.40	10.48	1.8e-09
VIME	ab1164	VIME_HUMAN	P08670	VIM	-1.41	14.95	1.9e-02
TBB3	ab1582	TBB3_HUMAN	Q13509	TUBB3	-1.44	13.89	3.4e-02
IL6	ab0192	IL6_HUMAN	P05231	IL6	-1.47	12.27	3.1e-10
ID3	ab0070	ID3_HUMAN	Q02535	ID3	-1.50	10.11	1.6e-07
GLPA	ab1491	GLPA_HUMAN	P02724	GYPA	-1.51	13.23	3.0e-07
TNR8	ab1423	TNR8_HUMAN	P28908	TNFRSF8	-1.53	10.73	1.2e-14
MLP3B	ab0078	MLP3B_HUMAN	Q9GZQ8	MAP1LC3B	-1.55	10.39	4.0e-11
MAD4	ab0066	MAD4_HUMAN	Q14582	MXD4	-1.58	10.45	1.8e-08
PDCD1	ab0974	PDCD1_HUMAN	Q15116	PDCD1	-1.63	10.14	1.7e-07
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-1.63	15.30	4.9e-05
MELPH	ab0077	MELPH_HUMAN	Q9BV36	MLPH	-1.64	10.50	5.9e-12
GRN	ab2704	GRN_HUMAN	P28799	GRN	-1.65	12.37	3.0e-12
PIM2	ab1022	PIM2_HUMAN	Q9P1W9	PIM2	-1.66	12.29	1.3e-09
TNR14	ab1765	TNR14_HUMAN	Q92956	TNFRSF14	-1.67	10.73	3.5e-10
AKA12	ab0067	AKA12_HUMAN	Q02952	AKAP12	-1.69	10.45	3.6e-11
PRTN3	ab1501	PRTN3_HUMAN	P24158	PRTN3	-1.78	10.11	3.0e-12
RA51C	ab0540	RA51C_HUMAN	O43502	RAD51C	-1.87	15.01	1.6e-06
HLA-I	ab1553				-1.88	12.91	1.8e-03

3.2.3 Untreated Day30: PAT vs WT

Between PAT-untreated Day30 and WT-untreated Day30, 284 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 7) and listed in Table 4.

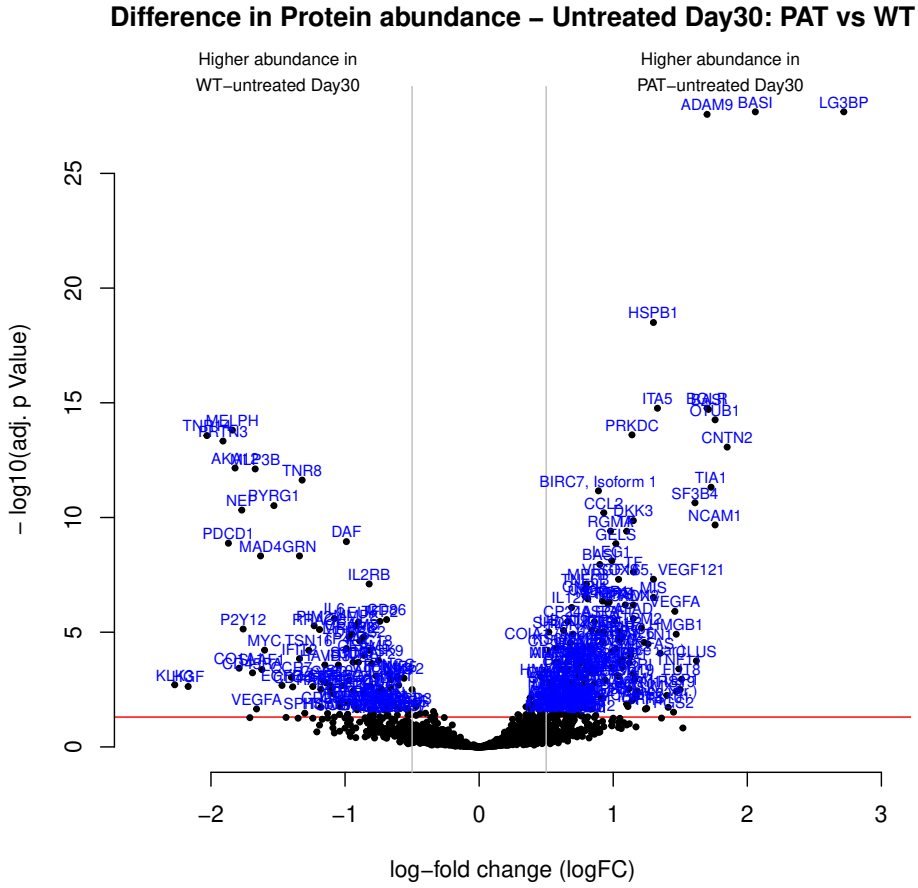

Figure 7: Several proteins exhibited distinct abundance variations in PAT-untreated Day30 and WT-untreated Day30. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-untreated Day30, proteins with a negative value in WT-untreated Day30.

Table 4: Proteins with differential abundance in PAT-untreated Day30 and WT-untreated Day30. Proteins with a positive logFC value had a higher abundance in PAT-untreated Day30, proteins with a negative value in WT-untreated Day30. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
LG3BP	ab2699	LG3BP_HUMAN	Q08380	LGALS3BP	2.72	11.41	2.1e-28
BASI	ab1910	BASI_HUMAN	P35613	BSG	2.06	14.74	2.1e-28
CNTN2	ab2731	CNTN2_HUMAN	Q02246	CNTN2	1.85	11.35	8.5e-14
OTUB1	ab0026	OTUB1_HUMAN	Q96FW1	OTUB1	1.76	14.51	5.5e-15
NCAM1	ab1459	NCAM1_HUMAN	P13591	NCAM1	1.76	13.55	2.1e-10
TIA1	ab0470	TIA1_HUMAN	P31483	TIA1	1.73	12.53	4.8e-12
BASI	ab1486	BASI_HUMAN	P35613	BSG	1.71	14.76	1.9e-15
ADAM9	ab1924	ADAM9_HUMAN	Q13443	ADAM9	1.70	11.44	2.7e-28
BGLR	ab1005	BGLR_HUMAN	P08236	GUSB	1.70	11.37	1.7e-15
CLUS	ab2109	CLUS_HUMAN	P10909	CLU	1.62	10.75	1.8e-04
SF3B4	ab0743	SF3B4_HUMAN	Q15427	SF3B4	1.61	10.89	2.3e-11
FUT8	ab1003	FUT8_HUMAN	Q9BYC5	FUT8	1.51	10.55	1.1e-03
TEP1	ab0511	TEP1_HUMAN	Q99973	TEP1	1.50	9.50	3.2e-03
TNF11	ab2674	TNF11_HUMAN	O14788	TNFSF11	1.49	10.59	4.0e-04
HMGB1	ab0690	HMGB1_HUMAN	P09429	HMGB1	1.47	9.79	1.2e-05
RS19	ab1287	RS19_HUMAN	P39019	RPS19	1.47	8.09	3.9e-03
VEGFA	ab1603	VEGFA_HUMAN	P15692	VEGFA	1.46	10.48	1.2e-06
PGS2	ab0592	PGS2_HUMAN	P07585	DCN	1.45	8.68	3.1e-02
TS101	ab0833	TS101_HUMAN	Q99816	TSG101	1.41	7.39	1.9e-02
MX2	ab1268	MX2_HUMAN	P20592	MX2	1.40	9.12	5.7e-03
FAS	ab0022	FAS_HUMAN	P49327	FASN	1.35	9.05	8.3e-05
ITA5	ab1565	ITA5_HUMAN	P08648	ITGA5	1.33	11.55	1.7e-15
HSPB1	ab2305	HSPB1_HUMAN	P04792	HSPB1	1.30	11.61	3.2e-19
VEGF165, VEGF121	ab2469		P15692	VEGFA	1.30	10.21	4.9e-08
MIS	ab2816	MIS_HUMAN	P03971	AMH	1.30	12.05	3.0e-07
ACTN1	ab2831	ACTN1_HUMAN	P12814	ACTN1	1.26	9.74	3.3e-05
IRF4	ab1010	IRF4_HUMAN	Q15306	IRF4	1.25	13.34	2.1e-02
TFR1	ab1547	TFR1_HUMAN	P02786	TFRC	1.24	11.54	2.2e-02
IL6	ab0211	IL6_HUMAN	P05231	IL6	1.23	9.96	2.8e-05
TPM2	ab1078	TPM2_HUMAN	P07951	TPM2	1.21	9.62	6.5e-06
P2RY1	ab1143	P2RY1_HUMAN	P47900	P2RY1	1.18	7.60	3.6e-03
AKT1	ab0618	AKT1_HUMAN	P31749	AKT1	1.17	12.51	4.1e-03
RASK	ab1140	RASK_HUMAN	P01116	KRAS	1.17	13.16	6.8e-03
CD19	ab1405	CD19_HUMAN	P15391	CD19	1.16	9.63	1.2e-03
DKK3	ab0493	DKK3_HUMAN	Q9UBP4	DKK3	1.15	10.97	1.4e-10
TF	ab2202	TF_HUMAN	P13726	F3	1.15	10.45	2.4e-08
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	1.15	15.42	6.4e-07
AFAD	ab0819	AFAD_HUMAN	P55196	AFDN	1.15	9.60	2.6e-06
MPRI	ab0484	MPRI_HUMAN	P11717	IGF2R	1.15	8.80	6.4e-04
PRKDC	ab1124	PRKDC_HUMAN	P78527	PRKDC	1.14	12.14	2.5e-14
LRRF2 (splice var.)	ab2826		Q9Y608	LRRFIP2	1.14	9.52	9.6e-03
MK	ab2370	MK_HUMAN	P21741	MDK	1.13	10.68	6.2e-05
MIF	ab1816	MIF_HUMAN	P14174	MIF	1.13	14.59	1.1e-04
TFR1	ab1472	TFR1_HUMAN	P02786	TFRC	1.12	11.84	2.2e-04
VCAM1	ab1792	VCAM1_HUMAN	P19320	VCAM1	1.12	9.62	2.9e-03
IL4	ab1928	IL4_HUMAN	P05112	IL4	1.11	10.60	1.7e-02
TF	ab1179	TF_HUMAN	P13726	F3	1.10	10.64	4.0e-10
VCAM1	ab0803	VCAM1_HUMAN	P19320	VCAM1	1.10	9.76	1.3e-02
NCAM1	ab1458	NCAM1_HUMAN	P13591	NCAM1	1.09	14.59	6.4e-07
PIR	ab0873	PIR_HUMAN	O00625	PIR	1.07	10.21	1.5e-05
GASR (splice var.)	ab2825		P32239	CCKBR	1.07	9.02	1.5e-04
IL9	ab2252	IL9_HUMAN	P15248	IL9	1.07	7.90	3.2e-04
SNG2	ab0809	SNG2_HUMAN	O43760	SYNGR2	1.06	9.26	2.2e-04
IGF1R	ab1995	IGF1R_HUMAN	P08069	IGF1R	1.05	12.10	9.4e-06
3BP5	ab1052	3BP5_HUMAN	O60239	SH3BP5	1.05	10.14	2.2e-05
SOX9	ab1162	SOX9_HUMAN	P48436	SOX9	1.04	12.18	5.0e-08
HNRPC	ab0723	HNRPC_HUMAN	P07910	HNRNPC	1.04	9.60	1.8e-05
PGH2	ab0643	PGH2_HUMAN	P35354	PTGS2	1.04	10.30	8.6e-04

Continued on next page

Table 4 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
TIE1	ab0536	TIE1_HUMAN	P35590	TIE1	1.03	9.70	7.6e-04
GELS	ab0442	GELS_HUMAN	P06396	GSN	1.02	10.48	1.4e-09
ENOG	ab0843	ENOG_HUMAN	P09104	ENO2	1.02	8.89	5.4e-05
FGF1	ab2350	FGF1_HUMAN	P05230	FGF1	1.01	10.04	3.2e-06
LEG1	ab2446	LEG1_HUMAN	P09382	LGALS1	0.99	9.56	7.7e-09
GAS1	ab0177	GAS1_HUMAN	P54826	GAS1	0.99	9.96	7.4e-05
ICOS	ab2742	ICOS_HUMAN	Q9Y6W8	ICOS	0.99	12.96	3.2e-04
RGMA	ab2023	RGMA_HUMAN	Q96B86	RGMA	0.98	12.07	3.9e-10
PRDX4	ab1318	PRDX4_HUMAN	Q13162	PRDX4	0.97	13.22	4.9e-07
PTPRS	ab0035	PTPRS_HUMAN	Q13332	PTPRS	0.96	9.34	5.7e-07
EGF	ab1160	EGF_HUMAN	P01133	EGF	0.94	12.32	1.2e-03
CCL2	ab0524	CCL2_HUMAN	P13500	CCL2	0.93	9.88	6.2e-11
TOP1	ab1298	TOP1_HUMAN	P11387	TOP1	0.93	12.95	9.3e-06
NCOR1	ab1269	NCOR1_HUMAN	O75376	NCOR1	0.92	11.31	4.4e-07
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	0.92	14.09	2.6e-05
NUP88	ab0712	NUP88_HUMAN	Q99567	NUP88	0.92	9.77	7.3e-03
PDGFD	ab2732	PDGFD_HUMAN	Q9GZP0	PDGFD	0.91	9.65	7.3e-03
BASI	ab1487	BASI_HUMAN	P35613	BSG	0.90	15.49	1.1e-08
BIRC7, Isoform 1	ab0056	BIRC7_HUMAN	Q96CA5	BIRC7	0.89	10.72	6.9e-12
IRF2	ab1256	IRF2_HUMAN	P14316	IRF2	0.89	10.17	9.9e-06
REQU	ab1350	REQU_HUMAN	Q92785	DPF2	0.87	11.26	4.2e-04
FGF23	ab2215	FGF23_HUMAN	Q9GZV9	FGF23	0.87	9.98	4.9e-04
FGF2	ab1714	FGF2_HUMAN	P09038	FGF2	0.87	11.99	4.2e-02
CASPA	ab0489	CASPA_HUMAN	Q92851	CASP10	0.86	9.91	3.4e-06
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	0.86	13.56	1.6e-03
TMED2	ab1322	TMED2_HUMAN	Q15363	TMED2	0.85	10.10	5.8e-05
NUCB2	ab2071	NUCB2_HUMAN	P80303	NUCB2	0.84	12.09	7.8e-06
PPIA	ab0998	PPIA_HUMAN	P62937	PPIA	0.84	11.94	6.1e-04
I23O1	ab1133	I23O1_HUMAN	P14902	IDO1	0.84	10.78	2.2e-02
PDIA6	ab0578	PDIA6_HUMAN	Q15084	PDIA6	0.83	11.49	3.4e-04
LIFR	ab0731	LIFR_HUMAN	P42702	LIFR	0.82	8.67	4.8e-05
JAK3	ab1149	JAK3_HUMAN	P52333	JAK3	0.82	13.62	2.1e-04
IF2A	ab0699	IF2A_HUMAN	P05198	EIF2S1	0.82	9.46	3.2e-03
CD20	ab1408	CD20_HUMAN	P11836	MS4A1	0.81	10.33	3.5e-07
EDN1	ab1243	EDN1_HUMAN	P05305	EDN1	0.81	12.73	4.9e-02
MPRI	ab1490	MPRI_HUMAN	P11717	IGF2R	0.80	12.48	7.9e-08
TNF6B	ab1759	TNF6B_HUMAN	O95407	TNFRSF6B	0.79	9.82	1.3e-07
GNPI1	ab1316	GNPI1_HUMAN	P46926	GNPDA1	0.79	10.85	2.7e-07
CLD10	ab0746	CLD10_HUMAN	P78369	CLDN10	0.79	10.29	4.0e-04
HMMR (splice var.)	ab2833		O75330	HMMR	0.79	9.09	1.1e-03
IL12B	ab1667	IL12B_HUMAN	P29460	IL12B	0.78	11.38	4.8e-05
MTHR	ab0670	MTHR_HUMAN	P42898	MTHFR	0.78	13.09	1.9e-04
SNX3	ab0813	SNX3_HUMAN	O60493	SNX3	0.78	8.27	2.1e-04
KI67	ab1337	KI67_HUMAN	P46013	MKI67	0.78	11.53	1.9e-02
JUN	ab1107	JUN_HUMAN	P05412	JUN	0.77	9.77	2.1e-04
GDF15	ab2078	GDF15_HUMAN	Q99988	GDF15	0.77	9.60	2.0e-03
P73 (splice var.)	ab2829		O15350	TP73	0.77	8.76	3.8e-03
ONCM	ab1885	ONCM_HUMAN	P13725	OSM	0.77	11.77	4.6e-02
DEND3	ab1049	DEND3_HUMAN	A2RUS2	DENND3	0.76	9.83	1.4e-02
THAP3	ab0695	THAP3_HUMAN	Q8WTV1	THAP3	0.76	9.16	4.4e-02
CCD50	ab1051	CCD50_HUMAN	Q8IVM0	CCDC50	0.75	14.82	8.6e-04
FILA	ab1199	FILA_HUMAN	P20930	FLG	0.75	8.74	8.7e-04
TRXR1	ab0837	TRXR1_HUMAN	Q16881	TXNRD1	0.75	11.06	5.1e-03
IBP1	ab0663	IBP1_HUMAN	P08833	IGFBP1	0.75	9.20	9.8e-03
TSN6	ab1200	TSN6_HUMAN	O43657	TSPAN6	0.74	8.58	8.3e-05
IFI6	ab1063	IFI6_HUMAN	P09912	IFI6	0.74	10.33	2.4e-04
ZN658	ab1155	ZN658_HUMAN	Q5TYW1	ZNF658	0.74	10.56	5.0e-04
PDCD2	ab1050	PDCD2_HUMAN	Q16342	PDCD2	0.74	9.85	8.6e-04
IL27A	ab1741	IL27A_HUMAN	Q8NEV9	IL27	0.74	10.94	1.1e-02
BRAF	ab0543	BRAF_HUMAN	P15056	BRAF	0.74	8.86	2.6e-02
UPAR	ab0802	UPAR_HUMAN	Q03405	PLAUR	0.73	9.11	2.0e-03

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Table 4 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
FRS2	ab2270	FRS2_HUMAN	Q8WU20	FRS2	0.72	10.58	1.4e-04
GLUC	ab2737	GLUC_HUMAN	P01275	GCG	0.72	10.93	2.1e-02
FCG2B	ab1803	FCG2B_HUMAN	P31994	FCGR2B	0.72	11.10	3.9e-02
CCNA2	ab0889	CCNA2_HUMAN	P20248	CCNA2	0.71	8.85	1.7e-02
RUNX1	ab2827	RUNX1_HUMAN	Q01196	RUNX1	0.70	8.76	1.2e-05
ATRN	ab2721	ATRN_HUMAN	O75882	ATRN	0.70	9.63	1.3e-02
NBL1	ab1953	NBL1_HUMAN	P41271	NBL1	0.70	10.78	4.2e-02
IL12A	ab0214	IL12A_HUMAN	P29459	IL12A	0.69	10.15	8.4e-07
TFR1	ab2730	TFR1_HUMAN	P02786	TFRC	0.69	13.13	1.6e-03
SOST	ab1798	SOST_HUMAN	Q9BQB4	SOST	0.69	10.33	1.8e-02
SCRB2	ab2146	SCRB2_HUMAN	Q14108	SCARB2	0.69	9.56	1.9e-02
COIA1 (endostatin)	ab2815	COIA1_HUMAN	P39060	COL18A1	0.68	10.33	2.9e-05
ACTG	ab0842	ACTG_HUMAN	P63261	ACTG1	0.68	9.47	5.1e-03
P73	ab0839	P73_HUMAN	O15350	TP73	0.68	8.83	3.9e-02
IL16	ab1009	IL16_HUMAN	Q14005	IL16	0.67	9.78	8.6e-05
CD15	ab1395				0.67	11.04	1.6e-03
CP24A	ab1156	CP24A_HUMAN	Q07973	CYP24A1	0.66	10.97	3.4e-06
ACY1	ab2821	ACY1_HUMAN	Q03154	ACY1	0.66	11.72	1.9e-04
DX39B	ab0715	DX39B_HUMAN	Q13838	DDX39B	0.66	11.21	4.2e-04
CEAM5	ab1630	CEAM5_HUMAN	P06731	CEACAM5	0.66	10.11	1.5e-02
PTCA	ab0862	PTCA_HUMAN	Q14761	PTPRCAP	0.66	9.55	1.8e-02
FGF7	ab0706	FGF7_HUMAN	P21781	FGF7	0.66	8.67	1.9e-02
CD276	ab2437	CD276_HUMAN	Q5ZPR3	CD276	0.65	13.45	5.2e-04
SEC13	ab0766	SEC13_HUMAN	P55735	SEC13	0.65	8.09	4.3e-02
CSF2	ab2175	CSF2_HUMAN	P04141	CSF2	0.64	8.97	1.1e-02
KLOT	ab2780	KLOT_HUMAN	Q9UEF7	KL	0.64	10.23	1.8e-02
UB2D2	ab0011	UB2D2_HUMAN	P62837	UBE2D2	0.63	10.39	8.4e-06
PGH1	ab1520	PGH1_HUMAN	P23219	PTGS1	0.63	9.36	2.1e-03
PGAM5	ab0034	PGAM5_HUMAN	Q96HS1	PGAM5	0.63	11.32	1.7e-02
RL29	ab1281	RL29_HUMAN	P47914	RPL29	0.62	10.25	4.1e-04
BRCA1	ab1092	BRCA1_HUMAN	P38398	BRCA1	0.62	11.02	1.1e-02
SH3R3	ab0761	SH3R3_HUMAN	Q8TEJ3	SH3RF3	0.62	8.83	3.5e-02
IL1A	ab0713	IL1A_HUMAN	P01583	IL1A	0.61	9.23	3.7e-02
BCL3	ab1064	BCL3_HUMAN	P20749	BCL3	0.60	10.61	5.5e-03
ARHGC	ab0038	ARHGC_HUMAN	Q9NZN5	ARHGEF12	0.59	11.26	2.0e-04
IL6RA	ab1706	IL6RA_HUMAN	P08887	IL6R	0.59	11.35	7.1e-03
KS6A2	ab0024	KS6A2_HUMAN	Q15349	RPS6KA2	0.58	10.77	4.8e-05
TPMT	ab0763	TPMT_HUMAN	P51580	TPMT	0.58	8.35	2.3e-03
UCHL5	ab0027	UCHL5_HUMAN	Q9Y5K5	UCHL5	0.58	9.01	5.1e-03
EP300	ab0740	EP300_HUMAN	Q09472	EP300	0.58	8.32	3.6e-02
BNIP3	ab0450	BNIP3_HUMAN	Q12983	BNIP3	0.58	9.14	4.6e-02
MMP14	ab1061	MMP14_HUMAN	P50281	MMP14	0.57	10.32	2.1e-04
IL20	ab1722	IL20_HUMAN	Q9NYY1	IL20	0.57	11.33	3.2e-03
PHS	ab0797	PHS_HUMAN	P61457	PCBD1	0.56	9.44	3.8e-03
MMP7	ab0503	MMP7_HUMAN	P09237	MMP7	0.56	9.89	5.1e-03
PLGF	ab0121	PLGF_HUMAN	P49763	PGF	0.56	10.17	1.1e-02
UBP4	ab1116	UBP4_HUMAN	Q13107	USP4	0.56	10.27	3.9e-02
SSR4	ab0686	SSR4_HUMAN	P31391	SSTR4	0.56	8.71	4.6e-02
GATA4	ab0120	GATA4_HUMAN	P43694	GATA4	0.55	8.68	1.0e-02
AURKB	ab1071	AURKB_HUMAN	Q96GD4	AURKB	0.55	10.07	1.7e-02
UB2E1	ab1301	UB2E1_HUMAN	P51965	UBE2E1	0.55	10.27	3.5e-02
HNRPM	ab0599	HNRPM_HUMAN	P52272	HNRNPM	0.55	10.45	4.0e-02
CDw17	ab1401				0.54	9.80	1.5e-03
MAD4	ab0506	MAD4_HUMAN	Q14582	MXD4	0.54	9.47	8.8e-03
VEGFA	ab0804	VEGFA_HUMAN	P15692	VEGFA	0.54	8.58	4.1e-02
SPRC	ab0687	SPRC_HUMAN	P09486	SPARC	0.53	9.41	2.4e-03
CKAP2	ab0816	CKAP2_HUMAN	Q8WWK9	CKAP2	0.53	9.97	4.6e-02
SHD	ab0018	SHD_HUMAN	Q96IW2	SHD	0.52	10.56	9.9e-06
MMP1	ab0533	MMP1_HUMAN	P03956	MMP1	0.52	10.59	1.5e-03
IL3RB	ab1551	IL3RB_HUMAN	P32927	CSF2RB	0.52	9.19	2.1e-02
CD59	ab1464	CD59_HUMAN	P13987	CD59	0.51	11.34	6.3e-05

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Table 4 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
KAP2	ab0004	KAP2_HUMAN	P13861	PRKAR2A	0.51	11.16	1.1e-02
ITAM	ab1387	ITAM_HUMAN	P11215	ITGAM	-0.53	9.40	2.4e-02
AREG	ab0750	AREG_HUMAN	P15514	AREG	-0.53	11.47	2.8e-02
CD57	ab1460				-0.53	10.30	4.3e-02
ERBB3	ab0458	ERBB3_HUMAN	P21860	ERBB3	-0.54	8.81	2.1e-02
MK12	ab0071	MK12_HUMAN	P53778	MAPK12	-0.56	11.44	1.0e-03
EDIL3	ab2705	EDIL3_HUMAN	O43854	EDIL3	-0.59	12.64	2.1e-02
HPT	ab1194	HPT_HUMAN	P00738	HP	-0.60	11.80	2.0e-03
TNR5	ab1752	TNR5_HUMAN	P25942	CD40	-0.61	9.11	8.4e-04
IL18	ab1511	IL18_HUMAN	Q14116	IL18	-0.61	10.82	1.0e-03
CSF3R	ab2506	CSF3R_HUMAN	Q99062	CSF3R	-0.61	9.61	4.1e-02
B3GA1	ab1568	B3GA1_HUMAN	Q9P2W7	B3GAT1	-0.63	12.74	1.6e-02
ICAM1	ab1454	ICAM1_HUMAN	P05362	ICAM1	-0.66	11.05	1.2e-03
IL17	ab2102	IL17_HUMAN	Q16552	IL17A	-0.66	9.53	2.6e-03
FANCC	ab0564	FANCC_HUMAN	Q00597	FANCC	-0.67	10.48	6.6e-04
CCL4	ab2391	CCL4_HUMAN	P13236	CCL4	-0.68	8.98	4.0e-02
CD86	ab1477	CD86_HUMAN	P42081	CD86	-0.69	10.10	2.8e-06
CR2	ab1410	CR2_HUMAN	P20023	CR2	-0.69	9.99	1.7e-02
CCL26	ab2098	CCL26_HUMAN	Q9Y258	CCL26	-0.69	9.02	4.4e-02
MSLN	ab2741	MSLN_HUMAN	Q13421	MSLN	-0.71	8.29	1.2e-02
ULBP1	ab2753	ULBP1_HUMAN	Q9BZM6	ULBP1	-0.71	8.87	1.4e-02
RENI	ab2133	RENI_HUMAN	P00797	REN	-0.71	8.79	2.4e-02
CD27	ab0989	CD27_HUMAN	P26842	CD27	-0.72	8.79	3.5e-03
CYTA	ab1240	CYTA_HUMAN	P01040	CSTA	-0.73	8.63	2.9e-03
IL6	ab1007	IL6_HUMAN	P05231	IL6	-0.73	9.16	1.0e-02
DLL1	ab1815	DLL1_HUMAN	O00548	DLL1	-0.73	9.58	1.3e-02
TFF2	ab1895	TFF2_HUMAN	Q03403	TFF2	-0.74	8.90	3.4e-06
NGF	ab1833	NGF_HUMAN	P01138	NGF	-0.74	7.99	4.8e-02
PCSK9	ab2710	PCSK9_HUMAN	Q8NBP7	PCSK9	-0.75	8.45	1.7e-04
K1C18	ab1606	K1C18_HUMAN	P05783	KRT18	-0.75	11.29	3.9e-03
VTCN1	ab1131	VTCN1_HUMAN	Q7Z7D3	VTCN1	-0.77	9.49	8.0e-04
UB2J1	ab1303	UB2J1_HUMAN	Q9Y385	UBE2J1	-0.78	13.65	7.5e-03
IL10	ab1008	IL10_HUMAN	P22301	IL10	-0.78	8.58	2.1e-02
WISP1	ab2093	WISP1_HUMAN	O95388	WISP1	-0.79	8.63	3.5e-02
CEAM3,5	ab1629		P40198	CEACAM3	-0.79	8.57	3.8e-02
ANGT	ab2292	ANGT_HUMAN	P01019	AGT	-0.79	9.08	4.9e-02
CRLF2	ab1498	CRLF2_HUMAN	Q9HC73	CRLF2	-0.80	11.19	2.3e-04
CCL17	ab2448	CCL17_HUMAN	Q92583	CCL17	-0.81	8.62	2.2e-03
CCL15	ab1789	CCL15_HUMAN	Q16663	CCL15	-0.81	8.98	2.2e-02
IL34	ab2441	IL34_HUMAN	Q6ZMJ4	IL34	-0.81	12.22	4.0e-02
IL2RB	ab1575	IL2RB_HUMAN	P14784	IL2RB	-0.82	10.36	7.9e-08
K1C18	ab0581	K1C18_HUMAN	P05783	KRT18	-0.82	11.29	6.2e-05
AZI2	ab0082	AZI2_HUMAN	Q9H6S1	AZI2	-0.86	10.85	1.6e-05
CEAM5	ab2720	CEAM5_HUMAN	P06731	CEACAM5	-0.86	9.89	1.0e-04
K2C4	ab0548	K2C4_HUMAN	P19013	KRT4	-0.86	11.51	4.6e-03
DHRS2	ab0081	DHRS2_HUMAN	Q13268	DHRS2	-0.89	10.17	2.5e-05
LEUK	ab1434	LEUK_HUMAN	P16150	SPN	-0.90	12.18	3.6e-06
CD8A	ab1376	CD8A_HUMAN	P01732	CD8A	-0.90	9.62	2.0e-04
LEP	ab2340	LEP_HUMAN	P41159	LEP	-0.91	8.19	2.4e-02
MMP2	ab0854	MMP2_HUMAN	P08253	MMP2	-0.92	11.01	5.2e-06
PERM	ab2761	PERM_HUMAN	P05164	MPO	-0.93	12.42	9.9e-03
RBM3	ab0074	RBM3_HUMAN	P98179	RBM3	-0.93	10.52	1.7e-02
S10A7	ab0855	S10A7_HUMAN	P31151	S100A7	-0.94	10.32	2.1e-04
PLEC	ab0680	PLEC_HUMAN	Q15149	PLEC	-0.94	10.81	3.7e-03
CEAM8	ab1577	CEAM8_HUMAN	P31997	CEACAM8	-0.95	8.93	1.2e-05
MRPP3	ab1266	MRPP3_HUMAN	O15091	KIAA0391	-0.97	11.11	1.7e-05
S10A9	ab0769	S10A9_HUMAN	P06702	S100A9	-0.97	10.83	1.2e-03
ADAM8	ab1936	ADAM8_HUMAN	P78325	ADAM8	-0.98	8.89	1.2e-02
OSTP	ab0676	OSTP_HUMAN	P10451	SPP1	-0.98	11.37	3.8e-02
DAF	ab1457	DAF_HUMAN	P08174	CD55	-0.99	8.43	1.1e-09
TP4A2	ab0023	TP4A2_HUMAN	Q12974	PTP4A2	-0.99	8.86	5.1e-05

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Table 4 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
AREG	ab1991	AREG_HUMAN	P15514	AREG	-1.02	8.49	2.1e-03
RP9	ab0103	RP9_HUMAN	Q8TA86	RP9	-1.03	14.99	9.7e-03
IL1R2	ab2480	IL1R2_HUMAN	P27930	IL1R2	-1.04	8.95	1.6e-02
CASP9	ab1099	CASP9_HUMAN	P55211	CASP9	-1.04	11.43	3.8e-02
ID3	ab0070	ID3_HUMAN	Q02535	ID3	-1.05	10.11	2.7e-04
IL6	ab0192	IL6_HUMAN	P05231	IL6	-1.08	12.27	2.6e-06
IBP4	ab1883	IBP4_HUMAN	P22692	IGFBP4	-1.09	8.14	4.8e-03
TAF12	ab0606	TAF12_HUMAN	Q16514	TAF12	-1.10	10.70	2.8e-03
SIGL5	ab2282	SIGL5_HUMAN	O15389	SIGLEC5	-1.11	9.08	2.1e-03
HSBP1	ab0737	HSBP1_HUMAN	O75506	HSBP1	-1.13	12.47	3.5e-02
LY75	ab1036	LY75_HUMAN	O60449	LY75	-1.14	8.52	1.6e-03
HAVR1	ab2781	HAVR1_HUMAN	Q96D42	HAVCR1	-1.15	8.37	2.7e-04
CCL22	ab1600	CCL22_HUMAN	O00626	CCL22	-1.16	8.67	1.4e-03
RA51C	ab0540	RA51C_HUMAN	O43502	RAD51C	-1.18	15.01	3.1e-03
CD28	ab1234	CD28_HUMAN	P10747	CD28	-1.18	8.83	1.9e-02
RRAGC	ab0076	RRAGC_HUMAN	Q9HB90	RRAGC	-1.19	10.29	7.7e-06
PIM2	ab1022	PIM2_HUMAN	Q9P1W9	PIM2	-1.23	12.29	5.3e-06
OSTP	ab0551	OSTP_HUMAN	P10451	SPP1	-1.24	12.70	2.3e-03
TSN16	ab0083	TSN16_HUMAN	Q9UKR8	TSPAN16	-1.27	10.66	6.2e-05
SPIT1	ab2131	SPIT1_HUMAN	O43278	SPINT1	-1.30	12.73	3.4e-02
TNR8	ab1423	TNR8_HUMAN	P28908	TNFRSF8	-1.32	10.73	2.3e-12
GRN	ab2704	GRN_HUMAN	P28799	GRN	-1.34	12.37	4.7e-09
IFIT2	ab0084	IFIT2_HUMAN	P09913	IFIT2	-1.34	10.59	1.4e-04
CD44	ab1540	CD44_HUMAN	P16070	CD44	-1.39	11.13	2.4e-03
CCR7	ab0792	CCR7_HUMAN	P32248	CCR7	-1.40	14.80	9.3e-04
EGFR	ab1341	EGFR_HUMAN	P00533	EGFR	-1.47	12.78	2.1e-03
PYRG1	ab0085	PYRG1_HUMAN	P17812	CTPS1	-1.53	10.48	3.0e-11
MYC	ab1015	MYC_HUMAN	P01106	MYC	-1.60	10.21	6.0e-05
SLAF1	ab2132	SLAF1_HUMAN	Q13291	SLAMF1	-1.62	10.23	4.2e-04
MAD4	ab0066	MAD4_HUMAN	Q14582	MXD4	-1.63	10.45	4.7e-09
VEGFA	ab1604	VEGFA_HUMAN	P15692	VEGFA	-1.66	14.25	2.2e-02
MLP3B	ab0078	MLP3B_HUMAN	Q9GZQ8	MAP1LC3B	-1.67	10.39	7.7e-13
CD45RA	ab1442		P08575	PTPRC	-1.69	12.08	5.9e-04
P2Y12	ab1144	P2Y12_HUMAN	Q9H244	P2RY12	-1.76	10.38	7.3e-06
NEP	ab1029	NEP_HUMAN	P08473	MME	-1.77	10.52	4.8e-11
CO1A1	ab2123	CO1A1_HUMAN	P02452	COL1A1	-1.79	13.95	3.7e-04
AKA12	ab0067	AKA12_HUMAN	Q02952	AKAP12	-1.82	10.45	7.0e-13
MELPH	ab0077	MELPH_HUMAN	Q9BV36	MLPH	-1.84	10.50	1.5e-14
PDCD1	ab0974	PDCD1_HUMAN	Q15116	PDCD1	-1.87	10.14	1.3e-09
PRTN3	ab1501	PRTN3_HUMAN	P24158	PRTN3	-1.91	10.11	4.6e-14
TNR14	ab1765	TNR14_HUMAN	Q92956	TNFRSF14	-2.03	10.73	2.7e-14
HGF	ab2443	HGF_HUMAN	P14210	HGF	-2.17	14.01	2.3e-03
KLK3	ab1879	KLK3_HUMAN	P07288	KLK3	-2.27	12.83	2.0e-03

3.2.4 Treated Day10: PAT vs WT

Between PAT-treated Day10 and WT-treated Day10, 42 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 8) and listed in Table 5.

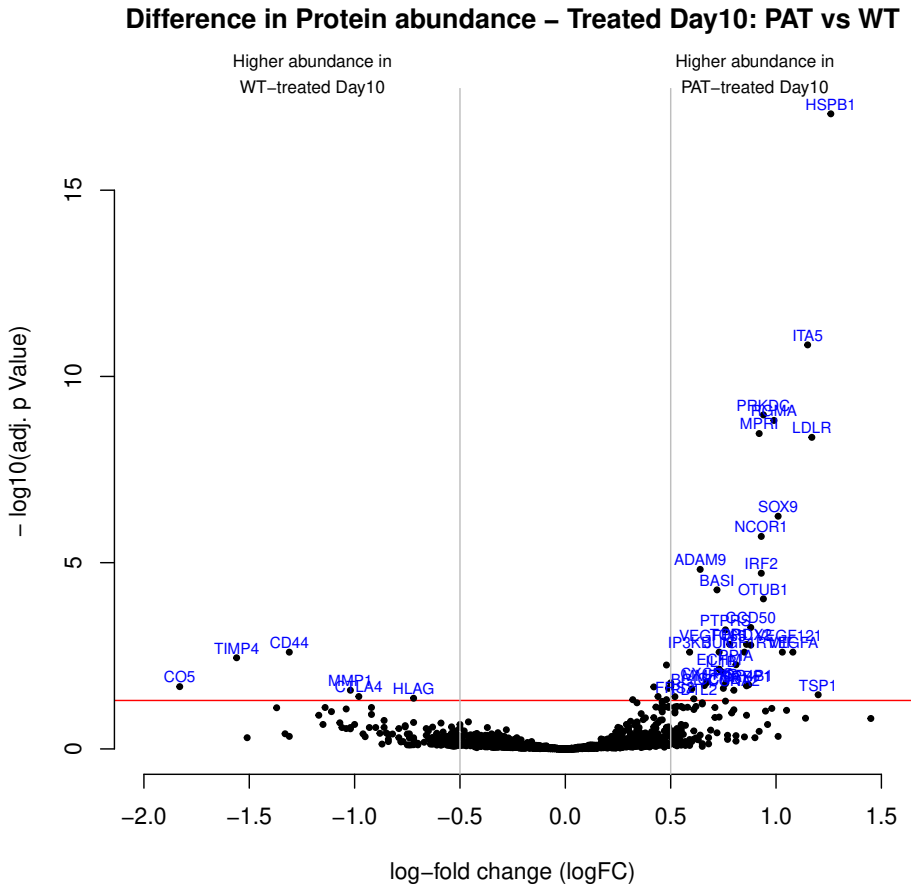

Figure 8: Several proteins exhibited distinct abundance variations in PAT-treated Day10 and WT-treated Day10. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-treated Day10, proteins with a negative value in WT-treated Day10.

Table 5: Proteins with differential abundance in PAT-treated Day10 and WT-treated Day10. Proteins with a positive logFC value had a higher abundance in PAT-treated Day10, proteins with a negative value in WT-treated Day10. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
HSPB1	ab2305	HSPB1_HUMAN	P04792	HSPB1	1.26	11.61	8.9e-18
TSP1	ab1855	TSP1_HUMAN	P07996	THBS1	1.20	10.24	3.5e-02
LDLR	ab1766	LDLR_HUMAN	P01130	LDLR	1.17	12.13	4.3e-09
ITA5	ab1565	ITA5_HUMAN	P08648	ITGA5	1.15	11.55	1.4e-11
VEGFA	ab1603	VEGFA_HUMAN	P15692	VEGFA	1.08	10.48	2.5e-03
MIF	ab1816	MIF_HUMAN	P14174	MIF	1.03	14.59	2.5e-03
SOX9	ab1162	SOX9_HUMAN	P48436	SOX9	1.01	12.18	5.7e-07
RGMA	ab2023	RGMA_HUMAN	Q96B86	RGMA	0.99	12.07	1.5e-09
PRKDC	ab1124	PRKDC_HUMAN	P78527	PRKDC	0.94	12.14	1.1e-09
OTUB1	ab0026	OTUB1_HUMAN	Q96FW1	OTUB1	0.94	14.51	9.4e-05
NCOR1	ab1269	NCOR1_HUMAN	O75376	NCOR1	0.93	11.31	2.0e-06
IRF2	ab1256	IRF2_HUMAN	P14316	IRF2	0.93	10.17	1.9e-05
MPRI	ab1490	MPRI_HUMAN	P11717	IGF2R	0.92	12.48	3.4e-09
CCD50	ab1051	CCD50_HUMAN	Q8IVM0	CCDC50	0.88	14.82	5.5e-04
VEGF165, VEGF121	ab2469		P15692	VEGFA	0.88	10.21	1.6e-03
CP4B1	ab0114	CP4B1_HUMAN	P13584	CYP4B1	0.87	11.39	1.9e-02
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	0.86	15.42	1.6e-03
SRBP1	ab0659	SRBP1_HUMAN	P36956	SREBF1	0.86	8.71	2.0e-02
IGF1R	ab1995	IGF1R_HUMAN	P08069	IGF1R	0.85	12.10	2.5e-03
PPIA	ab0998	PPIA_HUMAN	P62937	PPIA	0.81	11.94	5.5e-03
CCNA2	ab0889	CCNA2_HUMAN	P20248	CCNA2	0.80	8.85	2.7e-02
TOP1	ab1298	TOP1_HUMAN	P11387	TOP1	0.78	12.95	1.6e-03
PTPRS	ab0035	PTPRS_HUMAN	Q13332	PTPRS	0.76	9.34	6.4e-04
PIR	ab0873	PIR_HUMAN	O00625	PIR	0.76	10.21	1.8e-02
CCNB1	ab1233	CCNB1_HUMAN	P14635	CCNB1	0.75	9.99	2.4e-02
IL1B	ab0204	IL1B_HUMAN	P01584	IL1B	0.74	10.01	8.4e-03
JUN	ab1107	JUN_HUMAN	P05412	JUN	0.73	9.77	2.5e-03
ECHM	ab0593	ECHM_HUMAN	P30084	ECHS1	0.73	14.25	7.2e-03
BASI	ab1910	BASI_HUMAN	P35613	BSG	0.72	14.74	5.4e-05
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	0.67	14.09	1.7e-02
MMP7	ab1845	MMP7_HUMAN	P09237	MMP7	0.66	11.19	2.0e-02
ADAM9	ab1924	ADAM9_HUMAN	Q13443	ADAM9	0.64	11.44	1.5e-05
PD1L2	ab1020	PD1L2_HUMAN	Q9BQ51	PDCD1LG2	0.61	14.29	4.5e-02
BGLR	ab1005	BGLR_HUMAN	P08236	GUSB	0.60	11.37	2.5e-02
IP3KB	ab1048	IP3KB_HUMAN	P27987	ITPKB	0.59	11.02	2.5e-03
FRS2	ab2270	FRS2_HUMAN	Q8WU20	FRS2	0.52	10.58	4.0e-02
HLAG	ab1609	HLAG_HUMAN	P17693	HLA-G	-0.72	12.07	4.4e-02
CTLA4	ab1117	CTLA4_HUMAN	P16410	CTLA4	-0.98	13.19	3.9e-02
MMP1	ab2484	MMP1_HUMAN	P03956	MMP1	-1.02	8.75	2.7e-02
CD44	ab1437	CD44_HUMAN	P16070	CD44	-1.31	10.12	2.5e-03
TIMP4	ab1965	TIMP4_HUMAN	Q99727	TIMP4	-1.56	9.94	3.6e-03
CO5	ab2011	CO5_HUMAN	P01031	C5	-1.83	9.61	2.1e-02

3.2.5 Treated Day20: PAT vs WT

Between PAT-treated Day20 and WT-treated Day20, 318 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 9) and listed in Table 6.

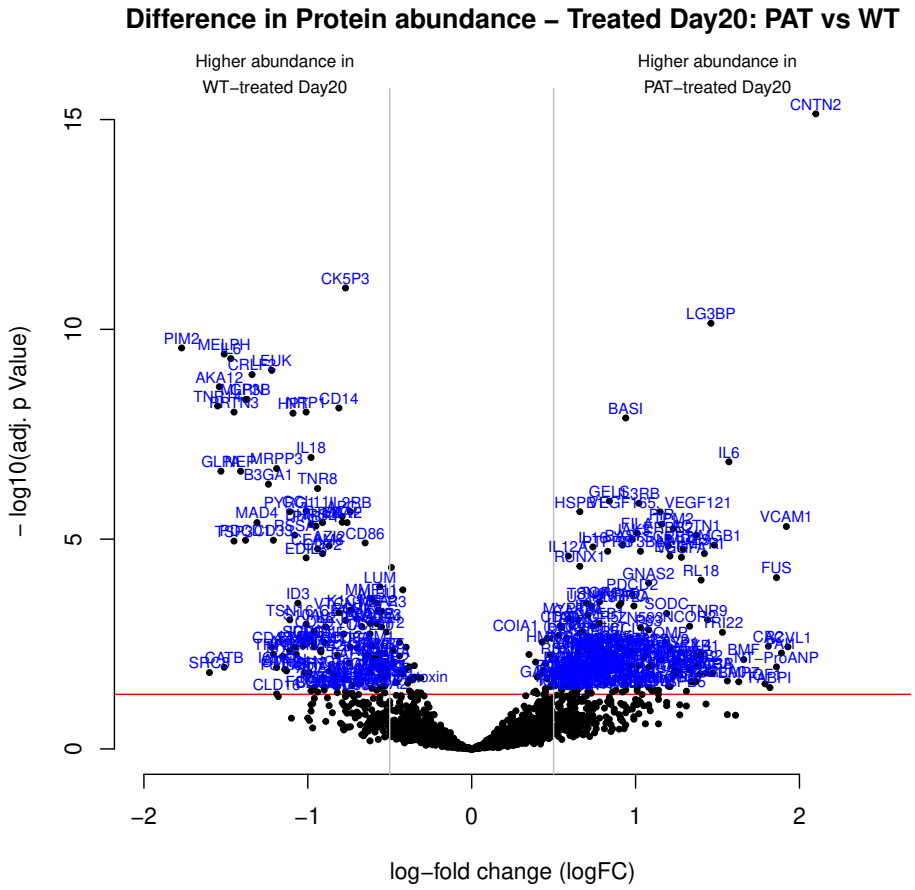

Figure 9: Several proteins exhibited distinct abundance variations in PAT-treated Day20 and WT-treated Day20. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-treated Day20, proteins with a negative value in WT-treated Day20.

Table 6: Proteins with differential abundance in PAT-treated Day20 and WT-treated Day20. Proteins with a positive logFC value had a higher abundance in PAT-treated Day20, proteins with a negative value in WT-treated Day20. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CNTN2	ab2731	CNTN2_HUMAN	Q02246	CNTN2	2.10	11.35	7.3e-16
ACVL1	ab2786	ACVL1_HUMAN	P37023	ACVRL1	1.93	12.04	3.7e-03
VCAM1	ab0803	VCAM1_HUMAN	P19320	VCAM1	1.92	9.76	5.0e-06
PAI1	ab0187	PAI1_HUMAN	P05121	SERPINE1	1.89	11.94	5.2e-03
FUS	ab0836	FUS_HUMAN	P35637	FUS	1.86	10.18	8.3e-05
NT-ProANP	ab2799		P01160	NPPA	1.86	11.34	1.1e-02
FABPI	ab1145	FABPI_HUMAN	P12104	FABP2	1.82	12.68	3.5e-02
CR2	ab0988	CR2_HUMAN	P20023	CR2	1.81	10.78	3.6e-03
IGF1	ab0480	IGF1_HUMAN	P05019	IGF1	1.79	12.78	2.8e-02
BMF	ab1040	BMF_HUMAN	Q96LC9	BMF	1.66	12.63	7.4e-03
BMP7	ab1772	BMP7_HUMAN	P18075	BMP7	1.63	10.48	2.5e-02
IL6	ab0211	IL6_HUMAN	P05231	IL6	1.57	9.96	1.4e-07
RLA0	ab0585	RLA0_HUMAN	P05388	RPLP0	1.56	10.68	2.4e-02
TRI22	ab0514	TRI22_HUMAN	Q8IYM9	TRIM22	1.53	9.68	1.7e-03
HMGB1	ab0690	HMGB1_HUMAN	P09429	HMGB1	1.48	9.79	1.4e-05
RARB	ab0711	RARB_HUMAN	P10826	RARB	1.47	12.32	1.6e-02
LG3BP	ab2699	LG3BP_HUMAN	Q08380	LGALS3BP	1.46	11.41	7.2e-11
TNR9	ab1028	TNR9_HUMAN	Q07011	TNFRSF9	1.44	13.03	8.4e-04
MUC3A	ab0672	MUC3A_HUMAN	Q02505	MUC3A	1.43	11.29	1.5e-02
MPRI	ab0484	MPRI_HUMAN	P11717	IGF2R	1.42	8.80	2.2e-05
RL18	ab1280	RL18_HUMAN	Q07020	RPL18	1.40	10.64	9.5e-05
IL4	ab0203	IL4_HUMAN	P05112	IL4	1.40	10.02	5.5e-03
CXB1	ab0642	CXB1_HUMAN	P08034	GJB1	1.39	12.04	5.9e-03
BDNF	ab2677	BDNF_HUMAN	P23560	BDNF	1.39	12.70	1.7e-02
ERBB2	ab2784	ERBB2_HUMAN	P04626	ERBB2	1.38	9.85	1.0e-02
CKS2	ab0877	CKS2_HUMAN	P33552	CKS2	1.38	12.88	1.1e-02
ACTN1	ab2831	ACTN1_HUMAN	P12814	ACTN1	1.37	9.74	8.0e-06
IF2B2	ab0479	IF2B2_HUMAN	Q9Y6M1	IGF2BP2	1.37	7.51	2.5e-02
SAP	ab2787	SAP_HUMAN	P07602	PSAP	1.35	11.91	2.5e-02
SPIT1	ab2131	SPIT1_HUMAN	O43278	SPINT1	1.34	12.73	2.5e-02
NCOR2	ab0760	NCOR2_HUMAN	Q9Y618	NCOR2	1.33	7.65	1.2e-03
RS19	ab1287	RS19_HUMAN	P39019	RPS19	1.33	8.09	1.1e-02
IRF4	ab1010	IRF4_HUMAN	Q15306	IRF4	1.33	13.34	1.3e-02
SPB5	ab1320	SPB5_HUMAN	P36952	SERPINB5	1.31	13.15	4.2e-02
NMDE3	ab0549	NMDE3_HUMAN	Q14957	GRIN2C	1.29	10.08	1.7e-05
VEGFA	ab1603	VEGFA_HUMAN	P15692	VEGFA	1.28	10.48	2.7e-05
TSP1	ab1855	TSP1_HUMAN	P07996	THBS1	1.27	10.24	5.0e-03
TLR3	ab2700	TLR3_HUMAN	O15455	TLR3	1.26	14.85	8.2e-03
MYH11	ab0565	MYH11_HUMAN	P35749	MYH11	1.26	12.79	1.4e-02
HNRPF	ab0555	HNRPF_HUMAN	P52597	HNRNPF	1.24	12.49	8.2e-03
CAV2	ab0631	CAV2_HUMAN	P51636	CAV2	1.24	12.43	1.5e-02
TPM2	ab1078	TPM2_HUMAN	P07951	TPM2	1.23	9.62	5.6e-06
PRTN3	ab1856	PRTN3_HUMAN	P24158	PRTN3	1.23	11.14	1.1e-02
IGF1R	ab0481	IGF1R_HUMAN	P08069	IGF1R	1.23	8.47	1.9e-02
EGF	ab1160	EGF_HUMAN	P01133	EGF	1.21	12.32	2.5e-05
CAV3	ab0790	CAV3_HUMAN	P56539	CAV3	1.21	11.49	4.1e-03
CAC1G	ab1315	CAC1G_HUMAN	O43497	CACNA1G	1.21	9.49	3.3e-02
ERBB2	ab0846	ERBB2_HUMAN	P04626	ERBB2	1.20	10.33	9.1e-06
SCRB2	ab2146	SCRB2_HUMAN	Q14108	SCARB2	1.20	9.56	1.4e-05
Lactoferin	ab1611	TRFL_HUMAN	P02788	LTF	1.20	14.28	3.2e-02
SODC	ab0644	SODC_HUMAN	P00441	SOD1	1.19	10.96	5.9e-04
COMP	ab2307	COMP_HUMAN	P49747	COMP	1.18	11.86	2.9e-03
PIR	ab0873	PIR_HUMAN	O00625	PIR	1.16	10.21	4.4e-06
VEGF165, VEGF121	ab2469		P15692	VEGFA	1.15	10.21	2.2e-06
PIM1	ab0605	PIM1_HUMAN	P11309	PIM1	1.15	9.54	7.6e-03
1C01	ab0754	1C01_HUMAN	P30499	HLA-C	1.14	11.81	4.0e-02
IL1A	ab2263	IL1A_HUMAN	P01583	IL1A	1.12	13.45	4.0e-02
PRDM1	ab0138	PRDM1_HUMAN	O75626	PRDM1	1.10	9.35	1.0e-02

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
MAMC2	ab0844	MAMC2_HUMAN	Q7Z304	MAMDC2	1.10	11.35	1.7e-02
TEP1	ab0511	TEP1_HUMAN	Q99973	TEP1	1.10	9.50	4.1e-02
GNAS2	ab0751	GNAS2_HUMAN	P63092	GNAS	1.08	9.41	1.1e-04
P63	ab0840	P63_HUMAN	Q9H3D4	TP63	1.08	9.58	1.5e-03
B2CL2	ab1228	B2CL2_HUMAN	Q92843	BCL2L2	1.08	10.78	1.1e-02
CHST4	ab0623	CHST4_HUMAN	Q8NCG5	CHST4	1.08	7.76	3.4e-02
1433S	ab0193	1433S_HUMAN	P31947	SFN	1.07	10.81	4.2e-03
SEPR	ab0065	SEPR_HUMAN	Q12884	FAP	1.06	10.18	5.8e-03
GRN	ab0542	GRN_HUMAN	P28799	GRN	1.05	7.40	6.9e-03
SF3B4	ab0743	SF3B4_HUMAN	Q15427	SF3B4	1.03	10.89	2.0e-05
ZN593	ab0767	ZN593_HUMAN	O00488	ZNF593	1.03	10.53	1.3e-03
IL3RB	ab1551	IL3RB_HUMAN	P32927	CSF2RB	1.02	9.19	1.4e-06
IGHA1	ab0168	IGHA1_HUMAN	P01876	IGHA1	1.02	7.58	1.0e-02
TNFA	ab0732	TNFA_HUMAN	P01375	TNF	1.02	11.04	3.1e-02
FILA	ab1199	FILA_HUMAN	P20930	FLG	1.01	8.74	7.2e-06
EWS	ab0523	EWS_HUMAN	Q01844	EWSR1	1.01	9.50	2.7e-02
S10A4	ab0117	S10A4_HUMAN	P26447	S100A4	1.01	14.60	3.5e-02
CD59	ab1463	CD59_HUMAN	P13987	CD59	1.01	9.43	4.1e-02
IF2A	ab0699	IF2A_HUMAN	P05198	EIF2S1	0.99	9.46	3.9e-04
JAK3	ab1149	JAK3_HUMAN	P52333	JAK3	0.98	13.62	1.0e-05
PDCD2	ab0566	PDCD2_HUMAN	Q16342	PDCD2	0.98	11.47	2.1e-04
DDR1	ab2832	DDR1_HUMAN	Q08345	DDR1	0.97	9.29	4.6e-03
RHOA	ab0596	RHOA_HUMAN	P61586	RHOA	0.97	11.22	1.0e-02
CCL2	ab2435	CCL2_HUMAN	P13500	CCL2	0.96	10.12	2.3e-03
IBP3	ab0474	IBP3_HUMAN	P17936	IGFBP3	0.96	11.31	5.1e-03
TGM2	ab1344	TGM2_HUMAN	P21980	TGM2	0.95	13.22	5.8e-03
BASI	ab1910	BASI_HUMAN	P35613	BSG	0.94	14.74	1.3e-08
SPA9	ab1034	SPA9_HUMAN	Q86WD7	SERPINA9	0.94	10.33	4.1e-03
LAG3	ab2794	LAG3_HUMAN	P18627	LAG3	0.94	10.15	1.9e-02
UXS1	ab0097	UXS1_HUMAN	Q8NBZ7	UXS1	0.94	11.39	3.1e-02
MTG8	ab0777	MTG8_HUMAN	Q06455	RUNX1T1	0.94	11.05	4.0e-02
P2RY1	ab1143	P2RY1_HUMAN	P47900	P2RY1	0.93	7.60	2.8e-02
BASI	ab1486	BASI_HUMAN	P35613	BSG	0.92	14.76	1.4e-05
HYAS1 (splice var.)	ab2830		Q92839	HAS1	0.92	8.36	6.1e-03
CYTL1	ab1670	CYTL1_HUMAN	Q9NRR1	CYTL1	0.92	12.85	4.4e-02
AFAD	ab0819	AFAD_HUMAN	P55196	AFDN	0.91	9.60	3.4e-04
SGSM3	ab0729	SGSM3_HUMAN	Q96HU1	SGSM3	0.91	9.20	9.7e-03
K1C15	ab0604	K1C15_HUMAN	P19012	KRT15	0.91	9.87	1.4e-02
ULBP3	ab2329	ULBP3_HUMAN	Q9BZM4	ULBP3	0.91	10.19	2.0e-02
HNRPC	ab0723	HNRPC_HUMAN	P07910	HNRNPC	0.90	9.60	3.8e-04
MIF	ab1816	MIF_HUMAN	P14174	MIF	0.90	14.59	3.6e-03
CADH1	ab2412	CADH1_HUMAN	P12830	CDH1	0.90	11.14	9.8e-03
EF1A1	ab0719	EF1A1_HUMAN	P68104	EEF1A1	0.88	10.00	1.1e-02
BARD1	ab0048	BARD1_HUMAN	Q99728	BARD1	0.88	12.64	4.0e-02
BIRC7, Isoform 1	ab0044	BIRC7_HUMAN	Q96CA5	BIRC7	0.87	9.14	5.2e-03
RPB3	ab0600	RPB3_HUMAN	P19387	POLR2C	0.86	10.84	2.6e-02
CDN2B	ab0490	CDN2B_HUMAN	P42772	CDKN2B	0.86	9.77	4.3e-02
GELS	ab0442	GELS_HUMAN	P06396	GSN	0.84	10.48	1.2e-06
T4S4	ab0831	T4S4_HUMAN	P48230	TM4SF4	0.84	8.92	1.3e-02
PTPRS	ab0035	PTPRS_HUMAN	Q13332	PTPRS	0.83	9.34	2.0e-05
ARI4A	ab0795	ARI4A_HUMAN	P29374	ARID4A	0.83	9.31	1.9e-02
SMAD4	ab0590	SMAD4_HUMAN	Q13485	SMAD4	0.82	8.94	1.4e-02
PACA	ab0617	PACA_HUMAN	P18509	ADCYAP1	0.82	10.60	1.5e-02
OVGP1	ab0828	OVGP1_HUMAN	Q12889	OVGP1	0.82	9.56	1.9e-02
MYCN	ab0745	MYCN_HUMAN	P04198	MYCN	0.82	12.01	2.6e-02
DAB2	ab0123	DAB2_HUMAN	P98082	DAB2	0.81	8.85	1.3e-02
ELAF	ab0825	ELAF_HUMAN	P19957	PI3	0.81	11.79	1.3e-02
Z385A	ab0755	Z385A_HUMAN	Q96PM9	ZNF385A	0.81	10.13	1.4e-02
KAP3	ab0005	KAP3_HUMAN	P31323	PRKAR2B	0.81	7.52	2.6e-02
IBP5	ab0475	IBP5_HUMAN	P24593	IGFBP5	0.80	10.66	2.7e-03
MK	ab2370	MK_HUMAN	P21741	MDK	0.80	10.68	8.1e-03

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
TIE1	ab0536	TIE1_HUMAN	P35590	TIE1	0.80	9.70	1.2e-02
P73 (splice var.)	ab2829		O15350	TP73	0.79	8.76	3.8e-03
BNIP3	ab0450	BNIP3_HUMAN	Q12983	BNIP3	0.79	9.14	4.2e-03
PHB	ab1174	PHB_HUMAN	P35232	PHB	0.79	9.27	8.4e-03
TOP1	ab1298	TOP1_HUMAN	P11387	TOP1	0.78	12.95	3.1e-04
CREB1	ab1114	CREB1_HUMAN	P16220	CREB1	0.78	10.20	1.0e-03
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	0.77	13.56	6.8e-03
P73	ab0839	P73_HUMAN	O15350	TP73	0.77	8.83	1.5e-02
MUC2	ab0504	MUC2_HUMAN	Q02817	MUC2	0.77	12.03	1.6e-02
CP11A	ab0879	CP11A_HUMAN	P05108	CYP11A1	0.76	9.16	4.2e-03
IL1A	ab0713	IL1A_HUMAN	P01583	IL1A	0.76	9.23	7.5e-03
CTGF	ab0472	CTGF_HUMAN	P29279	CTGF	0.76	10.13	8.2e-03
IL16	ab1009	IL16_HUMAN	Q14005	IL16	0.74	9.78	1.5e-05
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	0.74	14.09	1.2e-03
VGFR1	ab0128	VGFR1_HUMAN	P17948	FLT1	0.74	9.40	1.0e-02
S35A2	ab0801	S35A2_HUMAN	P78381	SLC35A2	0.74	8.21	1.2e-02
UCHL5	ab0027	UCHL5_HUMAN	Q9Y5K5	UCHL5	0.73	9.01	3.9e-04
HMMR (splice var.)	ab2833		O75330	HMMR	0.73	9.09	3.6e-03
CSF2	ab2175	CSF2_HUMAN	P04141	CSF2	0.73	8.97	4.0e-03
RBP2	ab0201	RBP2_HUMAN	P49792	RANBP2	0.73	12.26	5.7e-03
MAD1	ab0824	MAD1_HUMAN	Q05195	MXD1	0.73	8.86	5.7e-03
DDX17	ab0579	DDX17_HUMAN	Q92841	DDX17	0.73	8.90	4.7e-02
CKAP2	ab0816	CKAP2_HUMAN	Q8WWK9	CKAP2	0.72	9.97	4.6e-03
SH3R3	ab0761	SH3R3_HUMAN	Q8TEJ3	SH3RF3	0.72	8.83	1.2e-02
SNG2	ab0809	SNG2_HUMAN	O43760	SYNGR2	0.72	9.26	1.8e-02
NUP88	ab0712	NUP88_HUMAN	Q99567	NUP88	0.72	9.77	4.4e-02
IFI6	ab1063	IFI6_HUMAN	P09912	IFI6	0.71	10.33	6.5e-04
BAX	ab0704	BAX_HUMAN	Q07812	BAX	0.71	9.19	4.4e-03
PGH2	ab0643	PGH2_HUMAN	P35354	PTGS2	0.71	10.30	3.2e-02
RL3	ab0096	RL3_HUMAN	P39023	RPL3	0.71	9.59	4.2e-02
TSN6	ab1200	TSN6_HUMAN	O43657	TSPAN6	0.70	8.58	3.4e-04
DKK1	ab1094	DKK1_HUMAN	O94907	DKK1	0.69	9.38	1.3e-02
KIF23	ab0872	KIF23_HUMAN	Q02241	KIF23	0.69	9.96	2.4e-02
JUN	ab1107	JUN_HUMAN	P05412	JUN	0.68	9.77	1.6e-03
EP300	ab0740	EP300_HUMAN	Q09472	EP300	0.68	8.32	1.1e-02
GASR (splice var.)	ab2825		P32239	CCKBR	0.68	9.02	2.4e-02
CAV2	ab0530	CAV2_HUMAN	P51636	CAV2	0.67	9.58	2.4e-02
HSPB1	ab2305	HSPB1_HUMAN	P04792	HSPB1	0.66	11.61	2.2e-06
RUNX1	ab2827	RUNX1_HUMAN	Q01196	RUNX1	0.66	8.76	4.4e-05
PGH1	ab1520	PGH1_HUMAN	P23219	PTGS1	0.66	9.36	1.7e-03
IBP1	ab0663	IBP1_HUMAN	P08833	IGFBP1	0.66	9.20	2.5e-02
CASPA	ab0489	CASPA_HUMAN	Q92851	CASP10	0.65	9.91	8.4e-04
OTUB1	ab0026	OTUB1_HUMAN	Q96FW1	OTUB1	0.65	14.51	5.0e-03
CP4B1	ab0114	CP4B1_HUMAN	P13584	CYP4B1	0.65	11.39	3.8e-02
MMP1	ab2755	MMP1_HUMAN	P03956	MMP1	0.64	10.23	1.4e-02
NCHL1	ab0142	NCHL1_HUMAN	O00533	CHL1	0.64	11.66	4.8e-02
EZRI	ab0701	EZRI_HUMAN	P15311	EZR	0.64	8.69	4.9e-02
TIA1	ab0470	TIA1_HUMAN	P31483	TIA1	0.63	12.53	1.7e-02
FGF7	ab0706	FGF7_HUMAN	P21781	FGF7	0.63	8.67	2.4e-02
IGHA1	ab0126	IGHA1_HUMAN	P01876	IGHA1	0.63	9.67	2.7e-02
SRBP1	ab0659	SRBP1_HUMAN	P36956	SREBF1	0.63	8.71	4.5e-02
DNLI3	ab0818	DNLI3_HUMAN	P49916	LIG3	0.62	9.33	8.5e-03
PPIA	ab0998	PPIA_HUMAN	P62937	PPIA	0.61	11.94	1.9e-02
HNRPM	ab0599	HNRPM_HUMAN	P52272	HNRNPM	0.61	10.45	2.0e-02
IL13	ab1716	IL13_HUMAN	P35225	IL13	0.61	11.01	2.0e-02
IL6RA	ab2433	IL6RA_HUMAN	P08887	IL6R	0.61	9.84	2.5e-02
IL20	ab1817	IL20_HUMAN	Q9NYY1	IL20	0.61	11.33	4.8e-02
XPO1	ab0781	XPO1_HUMAN	O14980	XPO1	0.60	8.61	1.5e-02
SSR4	ab0686	SSR4_HUMAN	P31391	SSTR4	0.60	8.71	2.9e-02
IL12A	ab0214	IL12A_HUMAN	P29459	IL12A	0.59	10.15	2.5e-05
MYPT2	ab0033	MYPT2_HUMAN	O60237	PPP1R12B	0.59	10.20	7.8e-04

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
DKK3	ab0493	DKK3_HUMAN	Q9UBP4	DKK3	0.58	10.97	2.3e-03
RN141	ab0053	RN141_HUMAN	Q8WVD5	RNF141	0.58	10.07	3.1e-02
BCL3	ab1064	BCL3_HUMAN	P20749	BCL3	0.56	10.61	1.1e-02
CD302	ab1235	CD302_HUMAN	Q8IX05	CD302	0.56	11.12	1.9e-02
ITA5	ab1565	ITA5_HUMAN	P08648	ITGA5	0.55	11.55	1.3e-03
PDCD2	ab1050	PDCD2_HUMAN	Q16342	PDCD2	0.55	9.85	1.7e-02
REQU	ab1350	REQU_HUMAN	Q92785	DPF2	0.55	11.26	3.7e-02
ICAM2	ab0662	ICAM2_HUMAN	P13598	ICAM2	0.55	8.36	4.0e-02
CD20	ab1408	CD20_HUMAN	P11836	MS4A1	0.54	10.33	1.2e-03
LIFR	ab0731	LIFR_HUMAN	P42702	LIFR	0.54	8.67	1.1e-02
COIA1 (endostatin)	ab2815	COIA1_HUMAN	P39060	COL18A1	0.53	10.33	2.0e-03
RS3	ab0739	RS3_HUMAN	P23396	RPS3	0.51	8.96	6.9e-03
FGF1	ab2350	FGF1_HUMAN	P05230	FGF1	0.51	10.04	3.1e-02
TFF2	ab1895	TFF2_HUMAN	Q03403	TFF2	-0.52	8.90	1.6e-03
ISOC2	ab0073	ISOC2_HUMAN	Q96AB3	ISOC2	-0.52	12.12	1.2e-02
IFM1	ab0860	IFM1_HUMAN	P13164	IFITM1	-0.52	10.95	1.8e-02
TNR5	ab1752	TNR5_HUMAN	P25942	CD40	-0.53	9.11	5.3e-03
CALCA	ab2693	CALCA_HUMAN	P06881	CALCA	-0.53	10.88	8.2e-03
C3a anaphylatoxin	ab1218		P01024	C3	-0.53	8.94	3.2e-02
TP4A2	ab0023	TP4A2_HUMAN	Q12974	PTP4A2	-0.53	8.86	4.6e-02
ECHM	ab0593	ECHM_HUMAN	P30084	ECHS1	-0.54	14.25	2.1e-02
S10A8/9	ab1624				-0.54	10.48	2.4e-02
VGFR3	ab1622	VGFR3_HUMAN	P35916	FLT4	-0.55	11.39	5.3e-04
CD34	ab1426	CD34_HUMAN	P28906	CD34	-0.55	11.34	1.2e-03
K2C7	ab1333	K2C7_HUMAN	P08729	KRT7	-0.55	11.01	5.2e-03
PARK7	ab2223	PARK7_HUMAN	Q99497	PARK7	-0.55	14.97	1.7e-02
AREG	ab0750	AREG_HUMAN	P15514	AREG	-0.55	11.47	1.9e-02
LUM	ab2814	LUM_HUMAN	P51884	LUM	-0.56	11.52	1.4e-04
IL1A	ab1688	IL1A_HUMAN	P01583	IL1A	-0.56	8.81	1.1e-02
IL17	ab2102	IL17_HUMAN	Q16552	IL17A	-0.56	9.53	1.4e-02
1433Z	ab2089	1433Z_HUMAN	P63104	YWHAZ	-0.56	10.38	3.7e-02
MTA2	ab0092	MTA2_HUMAN	O94776	MTA2	-0.57	11.42	4.9e-04
MSLN	ab2692	MSLN_HUMAN	Q13421	MSLN	-0.57	10.62	6.3e-03
ALBU	ab2778	ALBU_HUMAN	P02768	ALB	-0.58	11.40	3.4e-04
CASP3	ab1096	CASP3_HUMAN	P42574	CASP3	-0.58	15.33	1.0e-03
CCL17	ab2448	CCL17_HUMAN	Q92583	CCL17	-0.58	8.62	4.0e-02
CO3	ab1623	CO3_HUMAN	P01024	C3	-0.60	11.80	7.0e-03
MMP11	ab0135	MMP11_HUMAN	P24347	MMP11	-0.61	10.51	2.7e-04
ICAM1	ab1454	ICAM1_HUMAN	P05362	ICAM1	-0.61	11.05	3.5e-03
ITA4	ab1543	ITA4_HUMAN	P13612	ITGA4	-0.61	9.68	3.6e-02
KLOTB	ab2691	KLOTB_HUMAN	Q86Z14	KLB	-0.62	10.69	1.0e-03
CCL20	ab1598	CCL20_HUMAN	P78556	CCL20	-0.62	11.42	1.8e-03
CD27	ab0989	CD27_HUMAN	P26842	CD27	-0.62	8.79	1.5e-02
K1C17	ab1335	K1C17_HUMAN	Q04695	KRT17	-0.64	11.74	5.7e-03
CD86	ab1477	CD86_HUMAN	P42081	CD86	-0.65	10.10	1.2e-05
TNR27	ab1977	TNR27_HUMAN	Q9HAV5	EDA2R	-0.65	8.71	7.5e-03
IFNA1	ab1519	IFNA1_HUMAN	P01562	IFNA1; IFNA13	-0.67	11.43	1.2e-03
PO2F1	ab0157	PO2F1_HUMAN	P14859	POU2F1	-0.68	10.59	2.7e-02
RRAGC	ab0076	RRAGC_HUMAN	Q9HB90	RRAGC	-0.69	10.29	1.5e-02
SFRP3	ab1295	SFRP3_HUMAN	Q92765	FRZB	-0.69	9.51	2.8e-02
PCSK9	ab2710	PCSK9_HUMAN	Q8NBP7	PCSK9	-0.70	8.45	7.8e-04
TFF1	ab2792	TFF1_HUMAN	P04155	TFF1	-0.70	11.21	3.9e-03
IL10	ab1008	IL10_HUMAN	P22301	IL10	-0.73	8.58	3.1e-02
AA2AR	ab1112	AA2AR_HUMAN	P29274	ADORA2A	-0.73	11.49	4.7e-02
IL2RB	ab1575	IL2RB_HUMAN	P14784	IL2RB	-0.74	10.36	2.2e-06
K1C18	ab0581	K1C18_HUMAN	P05783	KRT18	-0.74	11.29	4.9e-04
CD8A	ab1376	CD8A_HUMAN	P01732	CD8A	-0.74	9.62	3.7e-03
CD53	ab1544	CD53_HUMAN	P19397	CD53	-0.74	11.22	4.8e-02
FAF1	ab1248	FAF1_HUMAN	Q9UNN5	FAF1	-0.75	15.57	9.0e-03
DAF	ab1457	DAF_HUMAN	P08174	CD55	-0.76	8.43	4.0e-06
CK5P3	ab0094	CK5P3_HUMAN	Q96JB5	CDK5RAP3	-0.77	11.43	1.0e-11

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Table 6 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CEAM5	ab2720	CEAM5_HUMAN	P06731	CEACAM5	-0.77	9.89	8.6e-04
IKBA	ab0982	IKBA_HUMAN	P25963	NFKBIA	-0.77	11.24	2.0e-02
IFIT2	ab0084	IFIT2_HUMAN	P09913	IFIT2	-0.77	10.59	4.3e-02
CYTA	ab1240	CYTA_HUMAN	P01040	CSTA	-0.78	8.63	1.8e-03
APC	ab1227	APC_HUMAN	P25054	APC	-0.79	12.67	2.9e-06
MK12	ab0071	MK12_HUMAN	P53778	MAPK12	-0.79	11.44	4.0e-06
CD14	ab1627	CD14_HUMAN	P08571	CD14	-0.81	15.80	7.5e-09
VTCN1	ab1131	VTCN1_HUMAN	Q7Z7D3	VTCN1	-0.81	9.49	5.7e-04
UB2J1	ab1303	UB2J1_HUMAN	Q9Y385	UBE2J1	-0.82	13.65	5.7e-03
CCL22	ab1600	CCL22_HUMAN	O00626	CCL22	-0.82	8.67	3.3e-02
VGFR1	ab1617	VGFR1_HUMAN	P17948	FLT1	-0.82	9.04	4.6e-02
Fc fusion with TNR21	ab0517				-0.84	15.48	1.7e-02
AZI2	ab0082	AZI2_HUMAN	Q9H6S1	AZI2	-0.87	10.85	1.4e-05
NGF	ab1833	NGF_HUMAN	P01138	NGF	-0.87	7.99	1.4e-02
IL2	ab1901	IL2_HUMAN	P60568	IL2	-0.89	15.63	1.2e-03
BDNF	ab1502	BDNF_HUMAN	P23560	BDNF	-0.90	11.89	2.9e-03
RA51C	ab0540	RA51C_HUMAN	O43502	RAD51C	-0.90	15.01	3.2e-02
CD28	ab1420	CD28_HUMAN	P10747	CD28	-0.90	10.16	4.0e-02
NTF4	ab1516	NTF4_HUMAN	P34130	NTF4	-0.91	11.61	4.0e-06
CD72	ab1473	CD72_HUMAN	P21854	CD72	-0.91	12.35	2.2e-05
ADAM8	ab1936	ADAM8_HUMAN	P78325	ADAM8	-0.91	8.89	2.0e-02
MTOR	ab1153	MTOR_HUMAN	P42345	MTOR	-0.92	15.47	4.4e-03
ITAE	ab1573	ITAE_HUMAN	P38570	ITGAE	-0.92	11.86	4.9e-03
TNR8	ab1423	TNR8_HUMAN	P28908	TNFRSF8	-0.94	10.73	6.2e-07
CEAM8	ab1577	CEAM8_HUMAN	P31997	CEACAM8	-0.94	8.93	1.7e-05
B2MG	ab1014	B2MG_HUMAN	P61769	B2M	-0.94	15.08	4.4e-02
PABP1	ab0152	PABP1_HUMAN	P11940	PABPC1	-0.95	11.24	4.9e-06
CD99	ab1482	CD99_HUMAN	P14209	CD99	-0.96	11.53	1.6e-03
HAVR1	ab2781	HAVR1_HUMAN	Q96D42	HAVCR1	-0.96	8.37	3.7e-03
IL2	ab1115	IL2_HUMAN	P60568	IL2	-0.96	15.41	3.4e-02
IL18	ab1511	IL18_HUMAN	Q14116	IL18	-0.98	10.82	1.1e-07
DHRS2	ab0081	DHRS2_HUMAN	Q13268	DHRS2	-0.98	10.17	4.4e-06
IGLC1	ab1584	IGLC1_HUMAN	P0CG04	IGLC1	-0.98	13.22	2.7e-03
FCG2A	ab1561	FCG2A_HUMAN	P12318	FCGR2A	-0.98	9.95	4.1e-02
IBP7	ab0477	IBP7_HUMAN	Q16270	IGFBP7	-0.99	11.07	1.5e-02
NRP1	ab1781	NRP1_HUMAN	O14786	NRP1	-1.01	11.70	9.4e-09
CCL11	ab1503	CCL11_HUMAN	P51671	CCL11	-1.01	11.50	2.1e-06
EDIL3	ab2705	EDIL3_HUMAN	O43854	EDIL3	-1.01	12.64	2.8e-05
S10A9	ab0769	S10A9_HUMAN	P06702	S100A9	-1.01	10.83	1.1e-03
P2Y12	ab1144	P2Y12_HUMAN	Q9H244	P2RY12	-1.02	10.38	1.5e-02
SDC1	ab1576	SDC1_HUMAN	P18827	SDC1	-1.03	13.12	2.6e-03
LYAM3	ab1570	LYAM3_HUMAN	P16109	SELP	-1.03	12.78	3.6e-03
ID3	ab0070	ID3_HUMAN	Q02535	ID3	-1.06	10.11	3.4e-04
RBM3	ab0074	RBM3_HUMAN	P98179	RBM3	-1.07	10.52	5.5e-03
RSSA	ab0156	RSSA_HUMAN	P08865	RPSA	-1.08	11.56	8.0e-06
ST14	ab1321	ST14_HUMAN	Q9Y5Y6	ST14	-1.08	10.91	3.8e-03
HPT	ab1194	HPT_HUMAN	P00738	HP	-1.09	11.80	1.0e-08
PYRG1	ab0085	PYRG1_HUMAN	P17812	CTPS1	-1.11	10.48	2.2e-06
TSN16	ab0083	TSN16_HUMAN	Q9UKR8	TSPAN16	-1.11	10.66	8.4e-04
AOXA	ab0441	AOXA_HUMAN	Q06278	AOX1	-1.11	11.42	4.6e-03
CTNB1	ab1183	CTNB1_HUMAN	P35222	CTNNB1	-1.13	13.76	1.4e-02
AMPN	ab1390	AMPN_HUMAN	P15144	ANPEP	-1.14	13.71	1.3e-02
MYC	ab1015	MYC_HUMAN	P01106	MYC	-1.15	10.21	6.3e-03
MRPP3	ab1266	MRPP3_HUMAN	O15091	KIAA0391	-1.19	11.11	2.1e-07
IGKC	ab1583	IGKC_HUMAN	P01834	IGKC	-1.19	11.03	1.1e-02
CLD16	ab0738	CLD16_HUMAN	Q9Y5I7	CLDN16	-1.19	12.21	4.9e-02
CD33	ab1562	CD33_HUMAN	P20138	CD33	-1.21	12.85	1.1e-05
TRFE	ab1300	TRFE_HUMAN	P02787	TF	-1.21	15.22	5.5e-03
LEUK	ab1434	LEUK_HUMAN	P16150	SPN	-1.22	12.18	9.5e-10
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-1.22	15.30	3.8e-03
B3GA1	ab1568	B3GA1_HUMAN	Q9P2W7	B3GAT1	-1.24	12.74	4.9e-07

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Table 6 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
MAD4	ab0066	MAD4_HUMAN	Q14582	MXD4	-1.31	10.45	4.0e-06
CRLF2	ab1498	CRLF2_HUMAN	Q9HC73	CRLF2	-1.34	11.19	1.2e-09
GRN	ab2704	GRN_HUMAN	P28799	GRN	-1.37	12.37	4.7e-09
MLP3B	ab0078	MLP3B_HUMAN	Q9GZQ8	MAP1LC3B	-1.38	10.39	4.7e-09
PDCD1	ab0974	PDCD1_HUMAN	Q15116	PDCD1	-1.38	10.14	1.1e-05
NEP	ab1029	NEP_HUMAN	P08473	MME	-1.41	10.52	2.4e-07
PRTN3	ab1501	PRTN3_HUMAN	P24158	PRTN3	-1.45	10.11	9.4e-09
TSP3	ab1170	TSP3_HUMAN	P49746	THBS3	-1.45	12.64	1.1e-05
IL6	ab0192	IL6_HUMAN	P05231	IL6	-1.47	12.27	5.0e-10
MELPH	ab0077	MELPH_HUMAN	Q9BV36	MLPH	-1.51	10.50	3.9e-10
CATB	ab1172	CATB_HUMAN	P07858	CTSB	-1.51	12.67	1.1e-02
GLPA	ab1491	GLPA_HUMAN	P02724	GYPA	-1.53	13.23	2.4e-07
AKA12	ab0067	AKA12_HUMAN	Q02952	AKAP12	-1.54	10.45	2.3e-09
TNR14	ab1765	TNR14_HUMAN	Q92956	TNFRSF14	-1.55	10.73	6.7e-09
SRC8	ab0858	SRC8_HUMAN	Q14247	CTTN	-1.60	11.98	1.5e-02
PIM2	ab1022	PIM2_HUMAN	Q9P1W9	PIM2	-1.77	12.29	2.8e-10

3.2.6 Treated Day30: PAT vs WT

Between PAT-treated Day30 and WT-treated Day30, 369 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 10) and listed in Table 7.

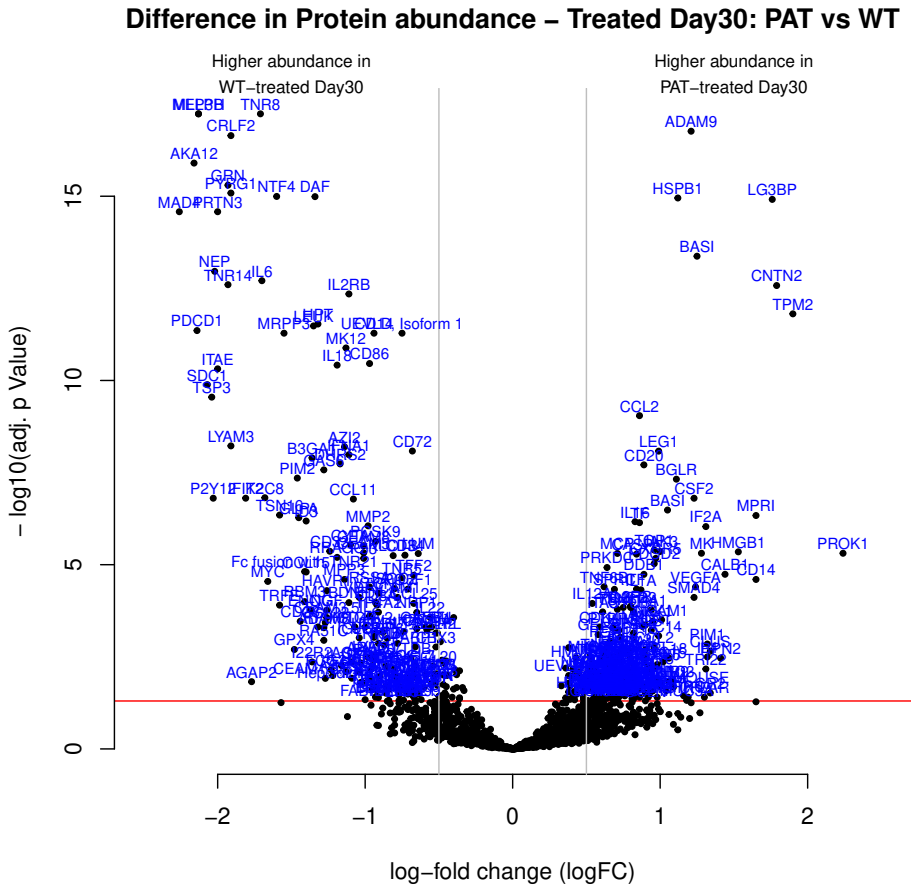

Figure 10: Several proteins exhibited distinct abundance variations in PAT-treated Day30 and WT-treated Day30. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-treated Day30, proteins with a negative value in WT-treated Day30.

Table 7: Proteins with differential abundance in PAT-treated Day30 and WT-treated Day30. Proteins with a positive logFC value had a higher abundance in PAT-treated Day30, proteins with a negative value in WT-treated Day30. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
PROK1	ab2017	PROK1_HUMAN	P58294	PROK1	2.24	9.89	4.9e-06
TPM2	ab1078	TPM2_HUMAN	P07951	TPM2	1.90	9.62	1.6e-12
CNTN2	ab2731	CNTN2_HUMAN	Q02246	CNTN2	1.79	11.35	2.7e-13
LG3BP	ab2699	LG3BP_HUMAN	Q08380	LGALS3BP	1.76	11.41	1.2e-15
MPRI	ab0484	MPRI_HUMAN	P11717	IGF2R	1.65	8.80	4.6e-07
CD14	ab2267	CD14_HUMAN	P08571	CD14	1.65	13.39	2.5e-05
HMGB1	ab0690	HMGB1_HUMAN	P09429	HMGB1	1.53	9.79	4.5e-06
CALB1	ab1911	CALB1_HUMAN	P05937	CALB1	1.44	11.48	1.8e-05
RPN2	ab0589	RPN2_HUMAN	P04844	RPN2	1.41	8.57	3.4e-03
CLUS	ab2109	CLUS_HUMAN	P10909	CLU	1.34	10.75	2.2e-03
CR2	ab0988	CR2_HUMAN	P20023	CR2	1.34	10.78	3.0e-02
PIM1	ab0605	PIM1_HUMAN	P11309	PIM1	1.32	9.54	1.4e-03
IL4	ab1928	IL4_HUMAN	P05112	IL4	1.32	10.60	3.2e-03
IF2A	ab0699	IF2A_HUMAN	P05198	EIF2S1	1.31	9.46	9.2e-07
TRI22	ab0514	TRI22_HUMAN	Q8IYM9	TRIM22	1.31	9.68	6.8e-03
CFLAR	ab1100	CFLAR_HUMAN	O15519	CFLAR	1.30	10.56	3.9e-02
MK	ab2370	MK_HUMAN	P21741	MDK	1.28	10.68	4.9e-06
BASI	ab1910	BASI_HUMAN	P35613	BSG	1.25	14.74	4.2e-14
VEGFA	ab1603	VEGFA_HUMAN	P15692	VEGFA	1.24	10.48	4.0e-05
CSF2	ab2175	CSF2_HUMAN	P04141	CSF2	1.23	8.97	1.6e-07
SMAD4	ab0590	SMAD4_HUMAN	Q13485	SMAD4	1.23	8.94	7.7e-05
ADAM9	ab1924	ADAM9_HUMAN	Q13443	ADAM9	1.21	11.44	1.7e-17
STK19	ab1296	STK19_HUMAN	P49842	STK19	1.19	12.81	3.9e-02
MUC3A	ab0672	MUC3A_HUMAN	Q02505	MUC3A	1.18	11.29	4.8e-02
SPRC	ab1026	SPRC_HUMAN	P09486	SPARC	1.16	13.13	3.6e-02
HSPB1	ab2305	HSPB1_HUMAN	P04792	HSPB1	1.12	11.61	1.1e-15
BGLR	ab1005	BGLR_HUMAN	P08236	GUSB	1.11	11.37	4.8e-08
TNF10_MOUSE	ab1223	TNF10_MOUSE	P50592	Tnfsf10	1.09	13.89	2.1e-02
BIRC3	ab0046	BIRC3_HUMAN	Q13489	BIRC3	1.08	12.70	1.5e-02
RL18	ab1280	RL18_HUMAN	Q07020	RPL18	1.06	10.64	3.4e-03
TNR9	ab1028	TNR9_HUMAN	Q07011	TNFRSF9	1.06	13.03	1.5e-02
BASI	ab1486	BASI_HUMAN	P35613	BSG	1.05	14.76	3.3e-07
HNRPF	ab0555	HNRPF_HUMAN	P52597	HNRNPF	1.04	12.49	2.6e-02
K1C15	ab0604	K1C15_HUMAN	P19012	KRT15	1.02	9.87	4.4e-03
NCAM1	ab1459	NCAM1_HUMAN	P13591	NCAM1	1.01	13.55	3.1e-04
PRDM1	ab0138	PRDM1_HUMAN	O75626	PRDM1	1.01	9.35	1.6e-02
JAK3	ab1149	JAK3_HUMAN	P52333	JAK3	1.00	13.62	4.4e-06
SMCA4	ab0630	SMCA4_HUMAN	P51532	SMARCA4	1.00	12.44	2.0e-02
LEG1	ab2446	LEG1_HUMAN	P09382	LGALS1	0.99	9.56	8.3e-09
K1C14	ab0829	K1C14_HUMAN	P02533	KRT14	0.99	9.47	8.6e-04
TCF25	ab0775	TCF25_HUMAN	Q9BQ70	TCF25	0.98	8.80	5.1e-03
RIN1	ab0852	RIN1_HUMAN	Q13671	RIN1	0.98	14.05	1.4e-02
RIN1	ab0130	RIN1_HUMAN	Q13671	RIN1	0.98	13.97	4.0e-02
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	0.97	14.09	6.7e-06
TOP1	ab1298	TOP1_HUMAN	P11387	TOP1	0.96	12.95	4.0e-06
PDCD2	ab1050	PDCD2_HUMAN	Q16342	PDCD2	0.96	9.85	9.4e-06
CCL2	ab2435	CCL2_HUMAN	P13500	CCL2	0.96	10.12	1.8e-03
KAP3	ab0005	KAP3_HUMAN	P31323	PRKAR2B	0.96	7.52	6.5e-03
DKK1	ab1094	DKK1_HUMAN	O94907	DKK1	0.95	9.38	3.4e-04
UBE2A	ab0042	UBE2A_HUMAN	P49459	UBE2A	0.95	12.33	2.7e-02
TIA1	ab0470	TIA1_HUMAN	P31483	TIA1	0.94	12.53	1.7e-04
SOST	ab1798	SOST_HUMAN	Q9BQB4	SOST	0.94	10.33	6.0e-04
DDR1	ab2832	DDR1_HUMAN	Q08345	DDR1	0.93	9.29	5.7e-03
HMMR	ab0867	HMMR_HUMAN	O75330	HMMR	0.93	12.35	3.1e-02
VCAM1	ab0803	VCAM1_HUMAN	P19320	VCAM1	0.92	9.76	3.9e-02
PAK1	ab0678	PAK1_HUMAN	Q13153	PAK1	0.91	9.64	8.2e-03
MIS	ab2816	MIS_HUMAN	P03971	AMH	0.90	12.05	4.3e-04
IL20	ab1817	IL20_HUMAN	Q9NYY1	IL20	0.90	11.33	2.0e-03

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Table 7 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
IL6	ab0211	IL6_HUMAN	P05231	IL6	0.90	9.96	3.0e-03
P73	ab0839	P73_HUMAN	O15350	TP73	0.90	8.83	3.3e-03
NCOR2	ab0760	NCOR2_HUMAN	Q9Y618	NCOR2	0.90	7.65	3.1e-02
OCLN	ab1169	OCLN_HUMAN	Q16625	OCLN	0.90	8.84	5.0e-02
CD20	ab1408	CD20_HUMAN	P11836	MS4A1	0.89	10.33	2.0e-08
DDB1	ab1118	DDB1_HUMAN	Q16531	DDB1	0.89	7.37	1.8e-05
K1C14	ab1331	K1C14_HUMAN	P02533	KRT14	0.89	13.53	4.6e-03
MAD1	ab0824	MAD1_HUMAN	Q05195	MXD1	0.88	8.86	4.8e-04
ITAE	ab1257	ITAE_HUMAN	P38570	ITGAE	0.88	7.46	1.9e-02
IL1A	ab0497	IL1A_HUMAN	P01583	IL1A	0.87	9.23	4.8e-05
CCL2	ab0524	CCL2_HUMAN	P13500	CCL2	0.86	9.88	9.0e-10
TF	ab1179	TF_HUMAN	P13726	F3	0.86	10.64	7.2e-07
BARD1	ab0048	BARD1_HUMAN	Q99728	BARD1	0.86	12.64	4.0e-02
SODC	ab0644	SODC_HUMAN	P00441	SOD1	0.85	10.96	1.6e-02
CXCL9	ab2058	CXCL9_HUMAN	Q07325	CXCL9	0.85	10.74	2.5e-02
CASPA	ab0489	CASPA_HUMAN	Q92851	CASP10	0.84	9.91	5.2e-06
TF	ab2202	TF_HUMAN	P13726	F3	0.84	10.45	4.6e-05
SGSM3	ab0729	SGSM3_HUMAN	Q96HU1	SGSM3	0.84	9.20	1.5e-02
IL16	ab1009	IL16_HUMAN	Q14005	IL16	0.83	9.78	6.8e-07
OVGP1	ab0828	OVGP1_HUMAN	Q12889	OVGP1	0.83	9.56	1.7e-02
SEPR	ab0065	SEPR_HUMAN	Q12884	FAP	0.83	10.18	3.1e-02
OTUB1	ab0026	OTUB1_HUMAN	Q96FW1	OTUB1	0.82	14.51	1.9e-04
SF3B4	ab0743	SF3B4_HUMAN	Q15427	SF3B4	0.82	10.89	7.1e-04
GDF15	ab2078	GDF15_HUMAN	Q99988	GDF15	0.82	9.60	9.7e-04
PHB	ab1174	PHB_HUMAN	P35232	PHB	0.82	9.27	5.0e-03
MSRE	ab0810	MSRE_HUMAN	P21757	MSR1	0.82	8.07	6.8e-03
STAT4	ab1152	STAT4_HUMAN	Q14765	STAT4	0.82	10.30	1.2e-02
CCL2	ab1168	CCL2_HUMAN	P13500	CCL2	0.82	10.72	4.4e-02
ZN593	ab0767	ZN593_HUMAN	O00488	ZNF593	0.81	10.53	1.1e-02
P63	ab0840	P63_HUMAN	Q9H3D4	TP63	0.81	9.58	1.7e-02
DPP4	ab1778	DPP4_HUMAN	P27487	DPP4	0.81	10.35	3.6e-02
VCAM1	ab1792	VCAM1_HUMAN	P19320	VCAM1	0.81	9.62	3.6e-02
NTF4	ab2237	NTF4_HUMAN	P34130	NTF4	0.81	10.41	4.4e-02
IL3RB	ab1551	IL3RB_HUMAN	P32927	CSF2RB	0.80	9.19	1.3e-04
TMED2	ab1322	TMED2_HUMAN	Q15363	TMED2	0.80	10.10	1.5e-04
IGHA1	ab0126	IGHA1_HUMAN	P01876	IGHA1	0.80	9.67	3.6e-03
MMP9	ab2439	MMP9_HUMAN	P14780	MMP9	0.80	10.71	8.4e-03
FCG2B	ab1803	FCG2B_HUMAN	P31994	FCGR2B	0.80	11.10	1.6e-02
TCEA1	ab0660	TCEA1_HUMAN	P23193	TCEA1	0.79	9.39	2.2e-03
CD69	ab1470	CD69_HUMAN	Q07108	CD69	0.79	10.54	2.8e-03
SRBP1	ab0659	SRBP1_HUMAN	P36956	SREBF1	0.79	8.71	8.6e-03
PIR	ab0873	PIR_HUMAN	O00625	PIR	0.78	10.21	2.2e-03
IL2RG	ab0559	IL2RG_HUMAN	P31785	IL2RG	0.78	8.11	2.3e-02
FAS	ab0022	FAS_HUMAN	P49327	FASN	0.76	9.05	3.6e-02
PO2F2	ab1275	PO2F2_HUMAN	P09086	POU2F2	0.75	7.67	1.5e-04
BAX	ab0704	BAX_HUMAN	Q07812	BAX	0.75	9.19	1.9e-03
LYSC	ab0730	LYSC_HUMAN	P61626	LYZ	0.75	8.29	8.9e-03
IBP1	ab0663	IBP1_HUMAN	P08833	IGFBP1	0.75	9.20	9.0e-03
CCL19	ab1585	CCL19_HUMAN	Q99731	CCL19	0.75	10.88	1.6e-02
MMP1	ab0845	MMP1_HUMAN	P03956	MMP1	0.74	7.96	4.1e-03
CAV2	ab0530	CAV2_HUMAN	P51636	CAV2	0.74	9.58	1.0e-02
ERBB2	ab0124	ERBB2_HUMAN	P04626	ERBB2	0.74	11.04	1.9e-02
CDK1	ab0870	CDK1_HUMAN	P06493	CDK1	0.74	11.44	2.4e-02
HYAS1 (splice var.)	ab2830		Q92839	HAS1	0.74	8.36	2.8e-02
FGF1	ab2350	FGF1_HUMAN	P05230	FGF1	0.73	10.04	9.3e-04
PYR1	ab1278	PYR1_HUMAN	P27708	CAD	0.73	7.39	2.2e-03
PPIA	ab0998	PPIA_HUMAN	P62937	PPIA	0.73	11.94	3.2e-03
CSF2	ab1053	CSF2_HUMAN	P04141	CSF2	0.73	10.45	4.1e-03
HMGB2	ab0882	HMGB2_HUMAN	P26583	HMGB2	0.73	7.92	2.0e-02
JUN	ab1107	JUN_HUMAN	P05412	JUN	0.72	9.77	6.0e-04
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	0.72	13.56	9.9e-03

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CEAM1	ab2363	CEAM1_HUMAN	P13688	CEACAM1	0.72	9.70	3.1e-02
CXCL5	ab1828	CXCL5_HUMAN	P42830	CXCL5	0.72	9.64	3.9e-02
MCP	ab1446	MCP_HUMAN	P15529	CD46	0.71	10.40	5.0e-06
TSN6	ab1200	TSN6_HUMAN	O43657	TSPAN6	0.71	8.58	1.6e-04
S35A2	ab0801	S35A2_HUMAN	P78381	SLC35A2	0.71	8.21	1.3e-02
PI2R	ab0682	PI2R_HUMAN	P43119	PTGIR	0.71	8.58	3.6e-02
HMMR (splice var.)	ab2833		O75330	HMMR	0.70	9.09	4.1e-03
RSPO1	ab2675	RSPO1_HUMAN	Q2MKA7	RSPO1	0.70	10.54	2.0e-02
ECT2	ab0041	ECT2_HUMAN	Q9H8V3	ECT2	0.70	8.79	2.1e-02
CAV1	ab0789	CAV1_HUMAN	Q03135	CAV1	0.70	10.97	4.2e-02
SPRC	ab0687	SPRC_HUMAN	P09486	SPARC	0.69	9.41	4.7e-05
SEC13	ab0766	SEC13_HUMAN	P55735	SEC13	0.69	8.09	2.5e-02
NUP88	ab0712	NUP88_HUMAN	Q99567	NUP88	0.69	9.77	4.7e-02
PTPRS	ab0035	PTPRS_HUMAN	Q13332	PTPRS	0.68	9.34	5.1e-04
CCD50	ab1051	CCD50_HUMAN	Q8IVM0	CCDC50	0.68	14.82	3.1e-03
PCGF2	ab0111	PCGF2_HUMAN	P35227	PCGF2	0.68	9.82	5.8e-03
HXA13	ab0655	HXA13_HUMAN	P31271	HOXA13	0.68	8.15	9.7e-03
RL3	ab0096	RL3_HUMAN	P39023	RPL3	0.68	9.59	4.6e-02
CING	ab1193	CING_HUMAN	Q9P2M7	CGN	0.67	8.88	7.5e-03
VEGFA	ab0804	VEGFA_HUMAN	P15692	VEGFA	0.67	8.58	7.7e-03
IL34_MOUSE	ab1224	IL34_MOUSE	Q8R1R4	Il34	0.67	14.50	2.7e-02
NPY1R	ab0692	NPY1R_HUMAN	P25929	NPY1R	0.67	8.22	3.6e-02
PGH1	ab1520	PGH1_HUMAN	P23219	PTGS1	0.66	9.36	1.2e-03
DNLI3	ab0818	DNLI3_HUMAN	P49916	LIG3	0.66	9.33	3.9e-03
PDIA6	ab0578	PDIA6_HUMAN	Q15084	PDIA6	0.66	11.49	5.5e-03
AFAD	ab0819	AFAD_HUMAN	P55196	AFDN	0.66	9.60	9.9e-03
ATRN	ab2721	ATRN_HUMAN	O75882	ATRN	0.66	9.63	1.8e-02
ROA1	ab0199	ROA1_HUMAN	P09651	HNRNPA1	0.66	7.92	3.4e-02
AMY2B	ab0764	AMY2B_HUMAN	P19961	AMY2B	0.66	6.84	3.6e-02
AURKB	ab1071	AURKB_HUMAN	Q96GD4	AURKB	0.65	10.07	3.3e-03
APEX1	ab0584	APEX1_HUMAN	P27695	APEX1	0.65	7.75	1.8e-02
SH3R3	ab0761	SH3R3_HUMAN	Q8TEJ3	SH3RF3	0.65	8.83	2.1e-02
IL9	ab2252	IL9_HUMAN	P15248	IL9	0.65	7.90	3.9e-02
PRKDC	ab1124	PRKDC_HUMAN	P78527	PRKDC	0.64	12.14	1.2e-05
IFI6	ab1063	IFI6_HUMAN	P09912	IFI6	0.64	10.33	1.7e-03
NMDE3	ab0549	NMDE3_HUMAN	Q14957	GRIN2C	0.64	10.08	4.2e-02
IL6RA	ab1706	IL6RA_HUMAN	P08887	IL6R	0.63	11.35	3.3e-03
DEND3	ab1049	DEND3_HUMAN	A2RUS2	DENND3	0.63	9.83	4.2e-02
TNF6B	ab1759	TNF6B_HUMAN	O95407	TNFRSF6B	0.62	9.82	4.0e-05
TNF12	ab1808	TNF12_HUMAN	O43508	TNFSF12	0.62	10.56	2.6e-03
ITA5	ab1565	ITA5_HUMAN	P08648	ITGA5	0.61	11.55	1.9e-04
LIFR	ab0731	LIFR_HUMAN	P42702	LIFR	0.60	8.67	3.5e-03
NEP	ab0887	NEP_HUMAN	P08473	MME	0.60	10.38	2.0e-02
IL6RA	ab2433	IL6RA_HUMAN	P08887	IL6R	0.60	9.84	2.8e-02
GNAS2	ab0751	GNAS2_HUMAN	P63092	GNAS	0.60	9.41	3.9e-02
CDK4	ab1236	CDK4_HUMAN	P11802	CDK4	0.59	9.63	4.9e-04
UBE2N	ab1307	UBE2N_HUMAN	P61088	UBE2N	0.59	9.54	9.6e-03
SPS2L	ab0571	SPS2L_HUMAN	Q9NUQ6	SPATS2L	0.59	8.88	1.5e-02
LYAM1	ab0762	LYAM1_HUMAN	P14151	SELL	0.59	8.05	3.7e-02
SCRB2	ab2146	SCRB2_HUMAN	Q14108	SCARB2	0.59	9.56	4.7e-02
GELS	ab0442	GELS_HUMAN	P06396	GSN	0.58	10.48	7.9e-04
UEVLD, Isoform 1	ab0061	UEVLD_HUMAN	Q8IX04	UEVLD	0.56	9.93	9.7e-03
FILA	ab1199	FILA_HUMAN	P20930	FLG	0.56	8.74	1.6e-02
BRPF3	ab0575	BRPF3_HUMAN	Q9ULD4	BRPF3	0.56	10.44	2.6e-02
ITB4	ab0807	ITB4_HUMAN	P16144	ITGB4	0.56	9.94	3.5e-02
BNIP3	ab0450	BNIP3_HUMAN	Q12983	BNIP3	0.56	9.14	4.3e-02
MAD4	ab0506	MAD4_HUMAN	Q14582	MXD4	0.55	9.47	7.5e-03
CCL24	ab1774	CCL24_HUMAN	O00175	CCL24	0.55	10.53	8.0e-03
UCHL5	ab0027	UCHL5_HUMAN	Q9Y5K5	UCHL5	0.55	9.01	8.2e-03
TR10B	ab1299	TR10B_HUMAN	O14763	TNFRSF10B	0.55	10.80	1.0e-02
PLGF	ab0121	PLGF_HUMAN	P49763	PGF	0.55	10.17	1.1e-02

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
ACTG	ab0842	ACTG_HUMAN	P63261	ACTG1	0.55	9.47	2.6e-02
XPO1	ab0781	XPO1_HUMAN	O14980	XPO1	0.55	8.61	2.6e-02
KLOT	ab2780	KLOT_HUMAN	Q9UEF7	KL	0.55	10.23	4.2e-02
IL12A	ab0214	IL12A_HUMAN	P29459	IL12A	0.54	10.15	1.1e-04
SOX9	ab1162	SOX9_HUMAN	P48436	SOX9	0.54	12.18	6.5e-03
UPAR	ab0802	UPAR_HUMAN	Q03405	PLAUR	0.54	9.11	2.4e-02
ATS13	ab2768	ATS13_HUMAN	Q76LX8	ADAMTS13	0.53	10.83	3.6e-03
IRF2	ab1256	IRF2_HUMAN	P14316	IRF2	0.53	10.17	1.1e-02
TGFB3	ab1863	TGFB3_HUMAN	P10600	TGFB3	0.53	10.05	1.8e-02
REL3	ab2803	REL3_HUMAN	Q8WXF3	RLN3	0.53	9.65	2.1e-02
K2C5	ab1346	K2C5_HUMAN	P13647	KRT5	0.53	11.39	2.1e-02
MK03	ab1262	MK03_HUMAN	P27361	MAPK3	0.51	11.21	3.0e-03
NCOR1	ab1269	NCOR1_HUMAN	O75376	NCOR1	0.51	11.31	8.0e-03
PTN6	ab1319	PTN6_HUMAN	P29350	PTPN6	0.51	9.50	2.4e-02
IGF1R	ab1995	IGF1R_HUMAN	P08069	IGF1R	0.51	12.10	4.9e-02
SELPL	ab1488	SELPL_HUMAN	Q14242	SELPLG	-0.51	11.76	7.1e-04
ITAV	ab1567	ITAV_HUMAN	P06756	ITGAV	-0.51	11.75	9.2e-03
IL1A	ab1688	IL1A_HUMAN	P01583	IL1A	-0.51	8.81	1.9e-02
IL1R2	ab0742	IL1R2_HUMAN	P27930	IL1R2	-0.52	10.28	7.1e-04
CBX3	ab0547	CBX3_HUMAN	Q13185	CBX3	-0.52	10.17	1.7e-03
IL12B	ab1731	IL12B_HUMAN	P29460	IL12B	-0.52	11.34	9.3e-03
MSLN	ab2692	MSLN_HUMAN	Q13421	MSLN	-0.53	10.62	9.5e-03
K1C18	ab0581	K1C18_HUMAN	P05783	KRT18	-0.53	11.29	1.4e-02
CCL20	ab1598	CCL20_HUMAN	P78556	CCL20	-0.54	11.42	5.6e-03
ALBU	ab2778	ALBU_HUMAN	P02768	ALB	-0.55	11.40	4.9e-04
PARK7	ab2223	PARK7_HUMAN	Q99497	PARK7	-0.55	14.97	1.7e-02
LGMN	ab2408	LGMN_HUMAN	Q99538	LGMN	-0.55	9.03	1.8e-02
IL22	ab1723	IL22_HUMAN	Q9GZX6	IL22	-0.56	12.58	2.7e-04
CD79A	ab1475	CD79A_HUMAN	P11912	CD79A	-0.58	10.59	6.0e-04
GASP1	ab1962	GASP1_HUMAN	Q5JY77	GPRASP1	-0.59	10.87	4.9e-04
K1C17	ab1335	K1C17_HUMAN	Q04695	KRT17	-0.59	11.74	9.6e-03
RN141	ab0052	RN141_HUMAN	Q8WVD5	RNF141	-0.60	9.75	2.1e-02
CD99	ab1482	CD99_HUMAN	P14209	CD99	-0.62	11.53	4.6e-02
LUM	ab2814	LUM_HUMAN	P51884	LUM	-0.64	11.52	5.0e-06
CHK2	ab1123	CHK2_HUMAN	O96017	CHEK2	-0.64	12.53	3.2e-02
NRP1	ab1781	NRP1_HUMAN	O14786	NRP1	-0.65	11.70	2.0e-04
K2C7	ab1333	K2C7_HUMAN	P08729	KRT7	-0.65	11.01	5.5e-04
PABP1	ab0152	PABP1_HUMAN	P11940	PABPC1	-0.66	11.24	1.7e-03
CCL7	ab1513	CCL7_HUMAN	P80098	CCL7	-0.66	11.09	5.5e-03
ANGP4	ab1940	ANGP4_HUMAN	Q9Y264	ANGPT4	-0.66	9.40	2.4e-02
AFAM	ab2791	AFAM_HUMAN	P43652	AFM	-0.66	11.84	2.7e-02
IFNL1	ab2735	IFNL1_HUMAN	Q8IU54	IFNL1	-0.66	8.79	4.7e-02
TFF2	ab1895	TFF2_HUMAN	Q03403	TFF2	-0.67	8.90	1.9e-05
CCL25	ab1601	CCL25_HUMAN	O15444	CCL25	-0.67	9.21	1.1e-04
CAD11	ab2820	CAD11_HUMAN	P55287	CDH11	-0.67	9.91	7.1e-03
ANM5	ab0037	ANM5_HUMAN	O14744	PRMT5	-0.67	14.06	1.1e-02
IGLC1	ab0172	IGLC1_HUMAN	P0CG04	IGLC1	-0.67	10.65	3.6e-02
MLH1	ab0175	MLH1_HUMAN	P40692	MLH1	-0.67	9.72	3.9e-02
CD72	ab1474	CD72_HUMAN	P21854	CD72	-0.68	11.29	8.2e-09
VTDB	ab2758	VTDB_HUMAN	P02774	GC	-0.69	10.79	3.4e-03
FSTL1	ab2750	FSTL1_HUMAN	Q12841	FSTL1	-0.69	8.96	1.4e-02
S10A9	ab0769	S10A9_HUMAN	P06702	S100A9	-0.69	10.83	2.8e-02
LYAM2	ab1569	LYAM2_HUMAN	P16581	SELE	-0.70	8.89	1.2e-02
GRB2	ab0170	GRB2_HUMAN	P62993	GRB2	-0.70	9.79	2.2e-02
PO5F1	ab1276	PO5F1_HUMAN	Q01860	POU5F1	-0.71	10.06	4.6e-05
IL10	ab1008	IL10_HUMAN	P22301	IL10	-0.71	8.58	3.2e-02
CD34	ab1426	CD34_HUMAN	P28906	CD34	-0.73	11.34	5.5e-06
CR1	ab1536	CR1_HUMAN	P17927	CR1	-0.73	9.87	2.6e-02
IL17	ab2102	IL17_HUMAN	Q16552	IL17A	-0.74	9.53	6.6e-04
MMP1	ab0069	MMP1_HUMAN	P03956	MMP1	-0.74	12.37	4.7e-02
UEVLD, Isoform 1	ab0060	UEVLD_HUMAN	Q8IX04	UEVLD	-0.75	9.93	5.2e-12

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Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
TNR5	ab1752	TNR5_HUMAN	P25942	CD40	-0.75	9.11	2.3e-05
LY75	ab1036	LY75_HUMAN	O60449	LY75	-0.75	8.52	5.0e-02
CD8A	ab1375	CD8A_HUMAN	P01732	CD8A	-0.76	10.40	2.2e-02
IL1B	ab1687	IL1B_HUMAN	P01584	IL1B	-0.77	10.41	2.0e-02
PERM	ab2761	PERM_HUMAN	P05164	MPO	-0.77	12.42	3.4e-02
DFB4A	ab1330	DFB4A_HUMAN	O15263	DEFB4A; DEFB4B	-0.77	10.57	4.8e-02
ICAM1	ab1454	ICAM1_HUMAN	P05362	ICAM1	-0.78	11.05	7.7e-05
CD27	ab0989	CD27_HUMAN	P26842	CD27	-0.78	8.79	1.4e-03
CCL4	ab2391	CCL4_HUMAN	P13236	CCL4	-0.79	8.98	1.1e-02
ISOC2	ab0073	ISOC2_HUMAN	Q96AB3	ISOC2	-0.80	12.12	4.5e-05
TFPI1	ab2395	TFPI1_HUMAN	P10646	TFPI	-0.80	8.84	6.5e-03
SFRP3	ab1295	SFRP3_HUMAN	Q92765	FRZB	-0.80	9.51	8.0e-03
IL1RA	ab1586				-0.80	9.55	9.2e-03
KLOTB	ab2691	KLOTB_HUMAN	Q86Z14	KLB	-0.81	10.69	5.7e-06
TNR1B	ab2455	TNR1B_HUMAN	P20333	TNFRSF1B	-0.84	10.45	2.4e-02
THBG	ab2140	THBG_HUMAN	P05543	SERPINA7	-0.84	8.53	4.8e-02
IBP6	ab1979	IBP6_HUMAN	P24592	IGFBP6	-0.85	8.79	1.0e-03
NCHL1	ab0142	NCHL1_HUMAN	O00533	CHL1	-0.85	11.66	5.9e-03
TMM54	ab0075	TMM54_HUMAN	Q969K7	TMEM54	-0.86	13.29	5.6e-03
SIGL5	ab2282	SIGL5_HUMAN	O15389	SIGLEC5	-0.86	9.08	2.0e-02
DHX40	ab0104	DHX40_HUMAN	Q8IX18	DHX40	-0.86	6.53	3.1e-02
ITA4	ab1543	ITA4_HUMAN	P13612	ITGA4	-0.87	9.68	1.5e-03
CCL17	ab2448	CCL17_HUMAN	Q92583	CCL17	-0.88	8.62	6.9e-04
PTMS	ab0811	PTMS_HUMAN	P20962	PTMS	-0.90	11.13	1.0e-02
VTCN1	ab1131	VTCN1_HUMAN	Q7Z7D3	VTCN1	-0.91	9.49	5.9e-05
TP4A2	ab0023	TP4A2_HUMAN	Q12974	PTP4A2	-0.91	8.86	1.9e-04
TNR1A	ab1610	TNR1A_HUMAN	P19438	TNFRSF1A	-0.91	9.02	1.4e-03
RL7	ab1284	RL7_HUMAN	P18124	RPL7	-0.91	15.49	4.0e-02
CD8A	ab1376	CD8A_HUMAN	P01732	CD8A	-0.92	9.62	1.2e-04
NFAC4	ab1104	NFAC4_HUMAN	Q14934	NFATC4	-0.92	9.66	2.5e-02
EGLN	ab1483	EGLN_HUMAN	P17813	ENG	-0.92	10.55	3.6e-02
PCSK9	ab2710	PCSK9_HUMAN	Q8NBP7	PCSK9	-0.93	8.45	2.3e-06
EDIL3	ab2705	EDIL3_HUMAN	O43854	EDIL3	-0.93	12.64	1.0e-04
ULBP1	ab2753	ULBP1_HUMAN	Q9BZM6	ULBP1	-0.93	8.87	7.1e-04
LYAM1	ab1466	LYAM1_HUMAN	P14151	SELL	-0.93	8.88	3.0e-03
BUB1	ab0865	BUB1_HUMAN	O43683	BUB1	-0.93	12.76	3.9e-02
CD14	ab1627	CD14_HUMAN	P08571	CD14	-0.94	15.80	5.2e-12
UB2J1	ab1303	UB2J1_HUMAN	Q9Y385	UBE2J1	-0.94	13.65	9.3e-04
BMP5	ab2373	BMP5_HUMAN	P22003	BMP5	-0.94	8.83	3.6e-03
ITA2B	ab1432	ITA2B_HUMAN	P08514	ITGA2B	-0.94	6.60	1.8e-02
IF2B3	ab0665	IF2B3_HUMAN	O00425	IGF2BP3	-0.95	12.21	5.5e-03
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-0.95	15.30	2.4e-02
WISP1	ab2093	WISP1_HUMAN	O95388	WISP1	-0.96	8.63	6.7e-03
IBP4	ab1883	IBP4_HUMAN	P22692	IGFBP4	-0.96	8.14	1.4e-02
CD86	ab1477	CD86_HUMAN	P42081	CD86	-0.97	10.10	3.5e-11
RSSA	ab0156	RSSA_HUMAN	P08865	RPSA	-0.97	11.56	4.0e-05
IL2	ab1901	IL2_HUMAN	P60568	IL2	-0.97	15.63	2.5e-04
MMP2	ab0854	MMP2_HUMAN	P08253	MMP2	-0.98	11.01	8.8e-07
AREG	ab1991	AREG_HUMAN	P15514	AREG	-0.98	8.49	3.3e-03
CD44v2	ab2782		P16070	CD44	-1.00	12.70	4.9e-04
FABPH	ab2686	FABPH_HUMAN	P05413	FABP3	-1.00	9.18	4.6e-02
CEAM8	ab1577	CEAM8_HUMAN	P31997	CEACAM8	-1.01	8.93	3.1e-06
CEAM5	ab2720	CEAM5_HUMAN	P06731	CEACAM5	-1.01	9.89	4.8e-06
P53	ab1018	P53_HUMAN	P04637	TP53	-1.01	12.67	6.7e-06
IL1R2	ab2480	IL1R2_HUMAN	P27930	IL1R2	-1.02	8.95	1.6e-02
ST14	ab1321	ST14_HUMAN	Q9Y5Y6	ST14	-1.03	10.91	4.6e-03
Hepcidin-25 chain	ab2789		P81172	HAMP	-1.03	8.53	1.6e-02
VDR	ab1080	VDR_HUMAN	P11473	VDR	-1.04	12.71	7.7e-05
IGLC1	ab1584	IGLC1_HUMAN	P0CG04	IGLC1	-1.04	13.22	9.7e-04
CCL2	ab1588	CCL2_HUMAN	P13500	CCL2	-1.04	10.96	8.2e-03
MTOR	ab1153	MTOR_HUMAN	P42345	MTOR	-1.07	15.47	4.9e-04

Continued on next page

Table 7 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CCL11	ab1503	CCL11_HUMAN	P51671	CCL11	-1.08	11.50	1.7e-07
AOXA	ab0441	AOXA_HUMAN	Q06278	AOX1	-1.09	11.42	4.4e-03
CCR7	ab0792	CCR7_HUMAN	P32248	CCR7	-1.09	14.80	1.2e-02
CYTA	ab1240	CYTA_HUMAN	P01040	CSTA	-1.10	8.63	2.9e-06
IL2RB	ab1575	IL2RB_HUMAN	P14784	IL2RB	-1.11	10.36	4.5e-13
IFNA1	ab1519	IFNA1_HUMAN	P01562	IFNA1; IFNA13	-1.11	11.43	1.0e-08
BDNF	ab1502	BDNF_HUMAN	P23560	BDNF	-1.11	11.89	1.1e-04
MK12	ab0071	MK12_HUMAN	P53778	MAPK12	-1.13	11.44	1.3e-11
SFRP5	ab2696	SFRP5_HUMAN	Q5T4F7	SFRP5	-1.13	13.54	8.0e-03
AZI2	ab0082	AZI2_HUMAN	Q9H6S1	AZI2	-1.14	10.85	6.3e-09
MPP3	ab0552	MPP3_HUMAN	Q13368	MPP3	-1.14	10.77	2.5e-05
IL1B	ab1888	IL1B_HUMAN	P01584	IL1B	-1.16	8.89	5.5e-03
DHRS2	ab0081	DHRS2_HUMAN	Q13268	DHRS2	-1.17	10.17	1.8e-08
IL18	ab1511	IL18_HUMAN	Q14116	IL18	-1.19	10.82	3.8e-11
RRAGC	ab0076	RRAGC_HUMAN	Q9HB90	RRAGC	-1.19	10.29	6.3e-06
CASP9	ab1099	CASP9_HUMAN	P55211	CASP9	-1.22	11.43	1.0e-02
FCG2A	ab1561	FCG2A_HUMAN	P12318	FCGR2A	-1.23	9.95	7.2e-03
CD33	ab1562	CD33_HUMAN	P20138	CD33	-1.24	12.85	4.3e-06
HAVR1	ab2781	HAVR1_HUMAN	Q96D42	HAVCR1	-1.26	8.37	5.1e-05
NGF	ab1833	NGF_HUMAN	P01138	NGF	-1.26	7.99	1.7e-04
CEAM3,5	ab1629		P40198	CEACAM3	-1.26	8.57	2.7e-04
CCL22	ab1600	CCL22_HUMAN	O00626	CCL22	-1.27	8.67	3.7e-04
CEAM1,3,5,6,8	ab1632		P13688	CEACAM1	-1.27	11.51	1.2e-02
GAS6	ab0068	GAS6_HUMAN	Q14393	GAS6	-1.28	11.29	2.7e-08
ADAM8	ab1936	ADAM8_HUMAN	P78325	ADAM8	-1.28	8.89	5.1e-04
RA51C	ab0540	RA51C_HUMAN	O43502	RAD51C	-1.28	15.01	1.1e-03
HPT	ab1194	HPT_HUMAN	P00738	HP	-1.32	11.80	2.9e-12
RP9	ab0103	RP9_HUMAN	Q8TA86	RP9	-1.32	14.99	4.9e-04
DAF	ab1457	DAF_HUMAN	P08174	CD55	-1.34	8.43	1.0e-15
LEUK	ab1434	LEUK_HUMAN	P16150	SPN	-1.35	12.18	3.3e-12
B3GA1	ab1568	B3GA1_HUMAN	Q9P2W7	B3GAT1	-1.36	12.74	1.3e-08
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.36	15.34	4.4e-03
ENOG	ab2054	ENOG_HUMAN	P09104	ENO2	-1.37	15.26	1.7e-04
ID3	ab0070	ID3_HUMAN	Q02535	ID3	-1.40	10.11	6.5e-07
CCL15	ab1789	CCL15_HUMAN	Q16663	CCL15	-1.40	8.98	1.6e-05
Fc fusion with TNR21	ab0517				-1.41	15.48	1.5e-05
RBM3	ab0074	RBM3_HUMAN	P98179	RBM3	-1.41	10.52	1.0e-04
CD28	ab1420	CD28_HUMAN	P10747	CD28	-1.44	10.16	3.4e-04
GLPA	ab1491	GLPA_HUMAN	P02724	GYPA	-1.45	13.23	5.3e-07
PIM2	ab1022	PIM2_HUMAN	Q9P1W9	PIM2	-1.46	12.29	4.5e-08
GPX4	ab0495	GPX4_HUMAN	P36969	GPX4	-1.48	11.93	2.0e-03
MRPP3	ab1266	MRPP3_HUMAN	O15091	KIAA0391	-1.55	11.11	5.2e-12
TSN16	ab0083	TSN16_HUMAN	Q9UKR8	TSPAN16	-1.58	10.66	4.5e-07
TRFE	ab1300	TRFE_HUMAN	P02787	TF	-1.58	15.22	1.3e-04
NTF4	ab1516	NTF4_HUMAN	P34130	NTF4	-1.60	11.61	1.0e-15
MYC	ab1015	MYC_HUMAN	P01106	MYC	-1.66	10.21	2.8e-05
K2C8	ab0072	K2C8_HUMAN	P05787	KRT8	-1.68	12.36	1.5e-07
IL6	ab0192	IL6_HUMAN	P05231	IL6	-1.70	12.27	2.0e-13
TNR8	ab1423	TNR8_HUMAN	P28908	TNFRSF8	-1.71	10.73	5.8e-18
AGAP2	ab0029	AGAP2_HUMAN	Q99490	AGAP2	-1.77	6.70	1.5e-02
IFIT2	ab0084	IFIT2_HUMAN	P09913	IFIT2	-1.81	10.59	1.6e-07
CRLF2	ab1498	CRLF2_HUMAN	Q9HC73	CRLF2	-1.91	11.19	2.3e-17
PYRG1	ab0085	PYRG1_HUMAN	P17812	CTPS1	-1.91	10.48	8.2e-16
LYAM3	ab1570	LYAM3_HUMAN	P16109	SELP	-1.91	12.78	6.0e-09
GRN	ab2704	GRN_HUMAN	P28799	GRN	-1.93	12.37	5.0e-16
TNR14	ab1765	TNR14_HUMAN	Q92956	TNFRSF14	-1.93	10.73	2.5e-13
PRTN3	ab1501	PRTN3_HUMAN	P24158	PRTN3	-2.00	10.11	2.6e-15
ITAE	ab1573	ITAE_HUMAN	P38570	ITGAE	-2.00	11.86	4.8e-11
NEP	ab1029	NEP_HUMAN	P08473	MME	-2.02	10.52	1.1e-13
P2Y12	ab1144	P2Y12_HUMAN	Q9H244	P2RY12	-2.03	10.38	1.6e-07
TSP3	ab1170	TSP3_HUMAN	P49746	THBS3	-2.04	12.64	2.8e-10

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Table 7 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
SDC1	ab1576	SDC1_HUMAN	P18827	SDC1	-2.07	13.12	1.3e-10
MLP3B	ab0078	MLP3B_HUMAN	Q9GZQ8	MAP1LC3B	-2.13	10.39	5.8e-18
MELPH	ab0077	MELPH_HUMAN	Q9BV36	MLPH	-2.13	10.50	5.8e-18
PDCD1	ab0974	PDCD1_HUMAN	Q15116	PDCD1	-2.14	10.14	4.4e-12
AKA12	ab0067	AKA12_HUMAN	Q02952	AKAP12	-2.16	10.45	1.3e-16
MAD4	ab0066	MAD4_HUMAN	Q14582	MXD4	-2.26	10.45	2.6e-15

3.2.7 PAT Day10: Treated vs Untreated

Between PAT-treated Day10 and PAT-untreated Day10, 5 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 11) and listed in Table 8.

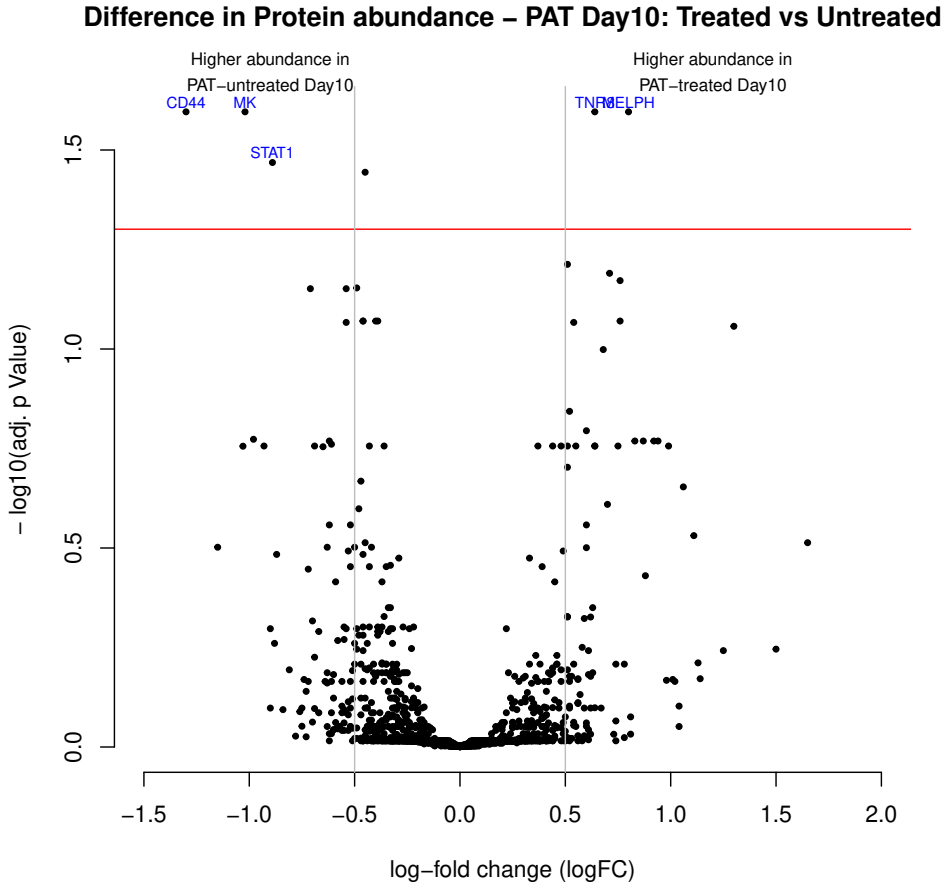

Figure 11: Several proteins exhibited distinct abundance variations in PAT-treated Day10 and PAT-untreated Day10. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-treated Day10, proteins with a negative value in PAT-untreated Day10.

Table 8: Proteins with differential abundance in PAT-treated Day10 and PAT-untreated Day10. Proteins with a positive logFC value had a higher abundance in PAT-treated Day10, proteins with a negative value in PAT-untreated Day10. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
MELPH	ab0077	MELPH_HUMAN	Q9BV36	MLPH	0.80	10.50	2.5e-02
TNR8	ab1423	TNR8_HUMAN	P28908	TNFRSF8	0.64	10.73	2.5e-02
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	-0.89	13.56	3.4e-02
MK	ab2370	MK_HUMAN	P21741	MDK	-1.02	10.68	2.5e-02
CD44	ab1437	CD44_HUMAN	P16070	CD44	-1.30	10.12	2.5e-02

3.2.8 PAT Day20: Treated vs Untreated

Between PAT-treated Day20 and PAT-untreated Day20, 20 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 12) and listed in Table 9.

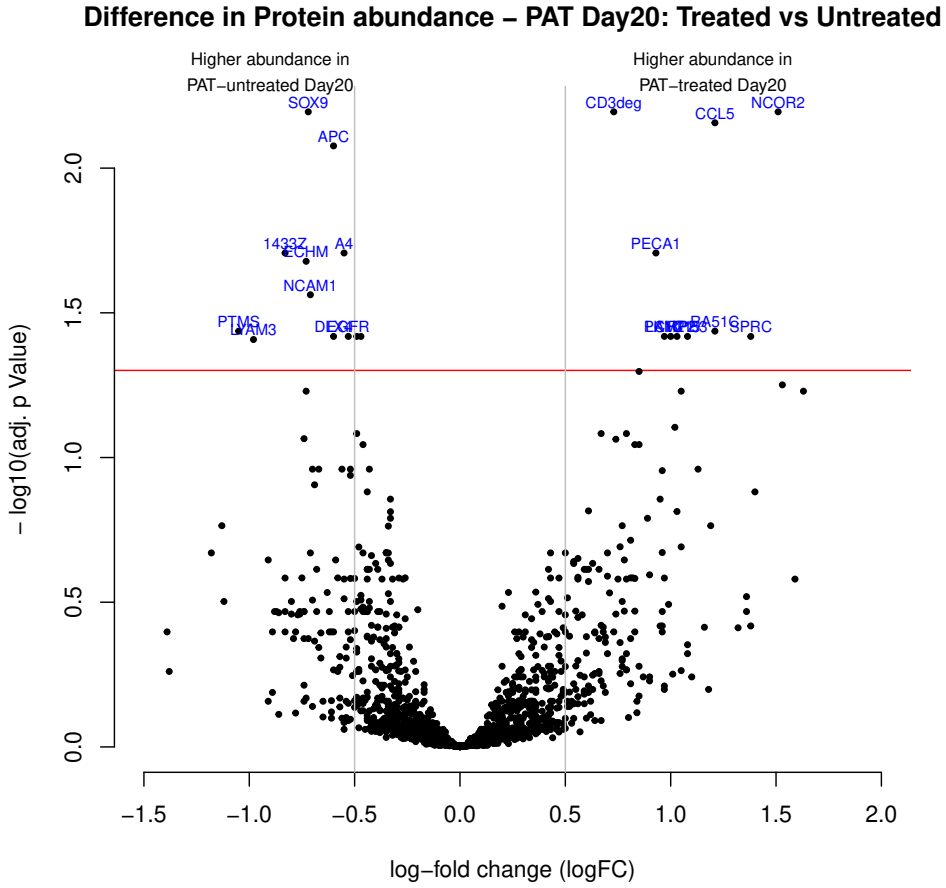

Figure 12: Several proteins exhibited distinct abundance variations in PAT-treated Day20 and PAT-untreated Day20. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-treated Day20, proteins with a negative value in PAT-untreated Day20.

Table 9: Proteins with differential abundance in PAT-treated Day20 and PAT-untreated Day20. Proteins with a positive logFC value had a higher abundance in PAT-treated Day20, proteins with a negative value in PAT-untreated Day20. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
NCOR2	ab0760	NCOR2_HUMAN	Q9Y618	NCOR2	1.51	7.65	6.4e-03
SPRC	ab2197	SPRC_HUMAN	P09486	SPARC	1.38	13.04	3.8e-02
CCL5	ab1672	CCL5_HUMAN	P13501	CCL5	1.21	9.72	7.0e-03
RA51C	ab0540	RA51C_HUMAN	O43502	RAD51C	1.21	15.01	3.7e-02
RPB3	ab0600	RPB3_HUMAN	P19387	POLR2C	1.08	10.84	3.8e-02
K1C15	ab0604	K1C15_HUMAN	P19012	KRT15	1.03	9.87	3.8e-02
LAMP2	ab0782	LAMP2_HUMAN	P13473	LAMP2	1.00	11.32	3.8e-02
PCH2	ab1274	PCH2_HUMAN	Q15645	TRIP13	0.97	9.59	3.8e-02
PECA1	ab1424	PECA1_HUMAN	P16284	PECAM1	0.93	9.72	2.0e-02
CD3deg	ab1524		P07766	CD3E	0.73	11.60	6.4e-03
EGFR	ab2454	EGFR_HUMAN	P00533	EGFR	-0.53	11.15	3.8e-02
A4	ab1085	A4_HUMAN	P05067	APP	-0.55	13.99	2.0e-02
APC	ab1227	APC_HUMAN	P25054	APC	-0.60	12.67	8.4e-03
DLX4	ab1242	DLX4_HUMAN	Q92988	DLX4	-0.60	9.46	3.8e-02
NCAM1	ab1458	NCAM1_HUMAN	P13591	NCAM1	-0.71	14.59	2.7e-02
SOX9	ab1162	SOX9_HUMAN	P48436	SOX9	-0.72	12.18	6.4e-03
ECHM	ab0593	ECHM_HUMAN	P30084	ECHS1	-0.73	14.25	2.1e-02
1433Z	ab2089	1433Z_HUMAN	P63104	YWHAZ	-0.83	10.38	2.0e-02
LYAM3	ab1570	LYAM3_HUMAN	P16109	SELP	-0.98	12.78	3.9e-02
PTMS	ab0811	PTMS_HUMAN	P20962	PTMS	-1.05	11.13	3.7e-02

3.2.9 PAT Day30: Treated vs Untreated

Between PAT-treated Day30 and PAT-untreated Day30, 17 antibodies recorded a differential protein abundance. The results of the statistical analysis are summarised in the volcano plot (Figure 13) and listed in Table 10.

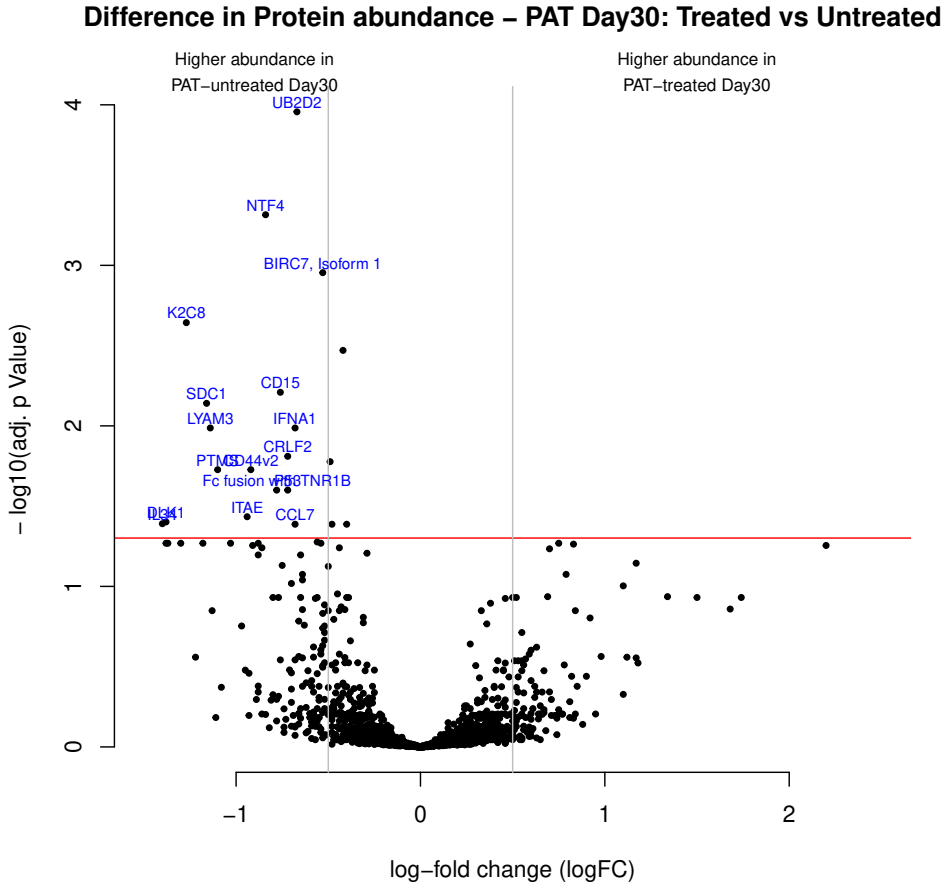

Figure 13: Several proteins exhibited distinct abundance variations in PAT-treated Day30 and PAT-untreated Day30. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC had a higher abundance in PAT-treated Day30, proteins with a negative value in PAT-untreated Day30.

Table 10: Proteins with differential abundance in PAT-treated Day30 and PAT-untreated Day30. Proteins with a positive logFC value had a higher abundance in PAT-treated Day30, proteins with a negative value in PAT-untreated Day30. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
BIRC7, Isoform 1	ab0056	BIRC7_HUMAN	Q96CA5	BIRC7	-0.53	10.72	1.1e-03
UB2D2	ab0011	UB2D2_HUMAN	P62837	UBE2D2	-0.67	10.39	1.1e-04
IFNA1	ab1519	IFNA1_HUMAN	P01562	IFNA1; IFNA13	-0.68	11.43	1.0e-02
CCL7	ab1513	CCL7_HUMAN	P80098	CCL7	-0.68	11.09	4.1e-02
CRLF2	ab1498	CRLF2_HUMAN	Q9HC73	CRLF2	-0.72	11.19	1.5e-02
P53	ab1018	P53_HUMAN	P04637	TP53	-0.72	12.67	2.5e-02
CD15	ab1395				-0.76	11.04	6.2e-03
Fc fusion with TNR1B	ab0520				-0.78	9.30	2.5e-02
NTF4	ab1516	NTF4_HUMAN	P34130	NTF4	-0.84	11.61	4.8e-04
CD44v2	ab2782		P16070	CD44	-0.92	12.70	1.9e-02
ITAE	ab1573	ITAE_HUMAN	P38570	ITGAE	-0.94	11.86	3.7e-02
PTMS	ab0811	PTMS_HUMAN	P20962	PTMS	-1.10	11.13	1.9e-02
LYAM3	ab1570	LYAM3_HUMAN	P16109	SELP	-1.14	12.78	1.0e-02
SDC1	ab1576	SDC1_HUMAN	P18827	SDC1	-1.16	13.12	7.2e-03
K2C8	ab0072	K2C8_HUMAN	P05787	KRT8	-1.27	12.36	2.3e-03
DLK1	ab1801	DLK1_HUMAN	P80370	DLK1	-1.38	10.70	4.0e-02
IL34	ab1212	IL34_HUMAN	Q6ZMJ4	IL34	-1.40	12.08	4.1e-02

3.3 Individual protein levels

For some differential proteins relative protein levels are presented in Figure 14.

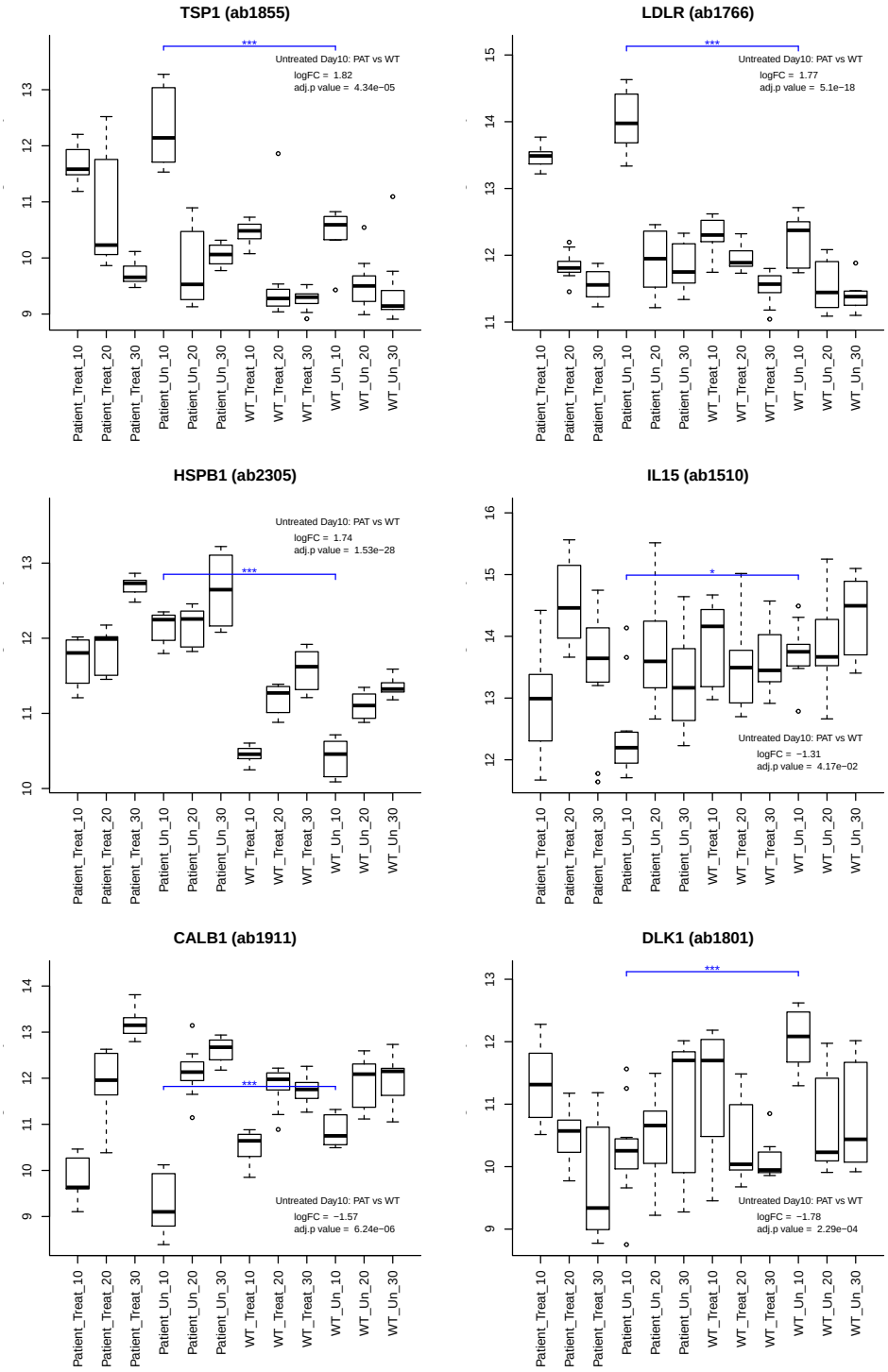

Figure 14: Individual array values for a set of differential proteins. Each sample is measured by four replicate spots per array.

4 Results of protein phosphorylation analysis

4.1 Cluster analysis

4.1.1 Hierarchical cluster analysis

The cluster analysis for the phosphorylation signal data of the complete data set (Figure 15) reveals a separation according to day of treatment. All day 10 samples (WT and patient) cluster to the right and all day 20 and day 30 samples are on the left side of the plot. For the day 20 and day 30 samples there is a slight trend of a separation.

A further cluster analysis was performed with only the differential data set (Figure 16). The cluster analysis with the differential proteins reveals a separation in three main clusters. The one on the right contains day 10 samples (WT and patient). The middle cluster mainly contains patient samples day 20 and day 30 and the cluster on the left contains day 20 and day 30 WT samples.

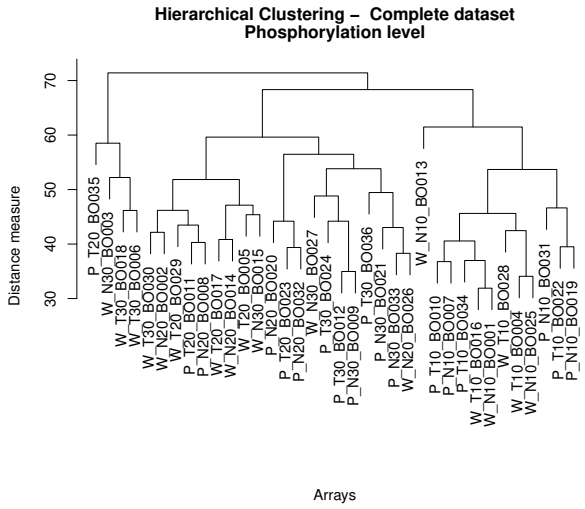

Figure 15: Hierarchical clustering of the samples' phosphorylation signal data using complete array data.

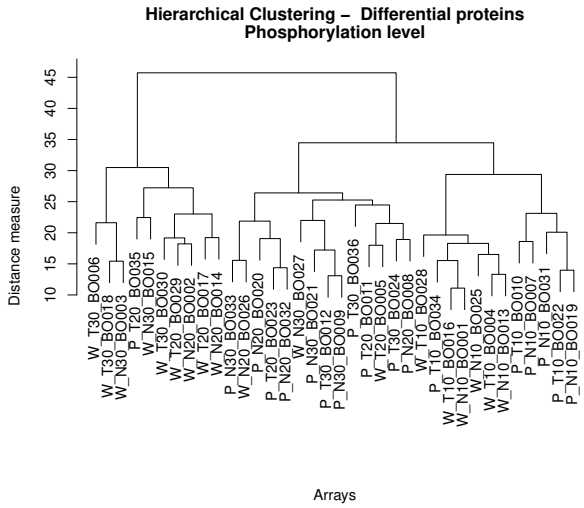

Figure 16: Hierarchical clustering of the samples' phosphorylation signal data based on differential proteins.

4.1.2 Non-metric multidimensional scaling

In addition, a non-metric multidimensional scaling (NMDS) was performed for the array data (Figure 17) as well as for the array data filtered for differential proteins (Figure 18). In this plot, the location and proximity of the samples is defined by the protein profile of the respective arrays. Samples with a similar profile are located in close proximity.

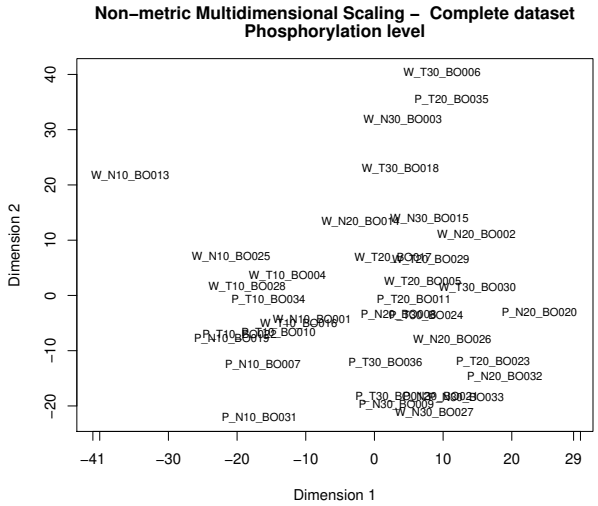

Figure 17: Non-metric multidimensional scaling plot of the samples' phosphorylation signal data using complete array data.

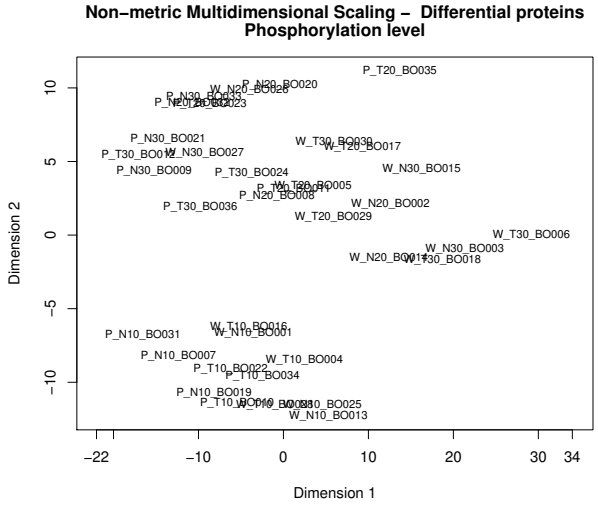

Figure 18: Non-metric multidimensional scaling plot of the samples' phosphorylation signal data based on differential proteins.

4.2 Differentially phosphorylated proteins

4.2.1 Untreated Day10: PAT vs WT

Between PAT-untreated Day10 and WT-untreated Day10, 28 antibodies recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 19) and listed in Table 11. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 20.

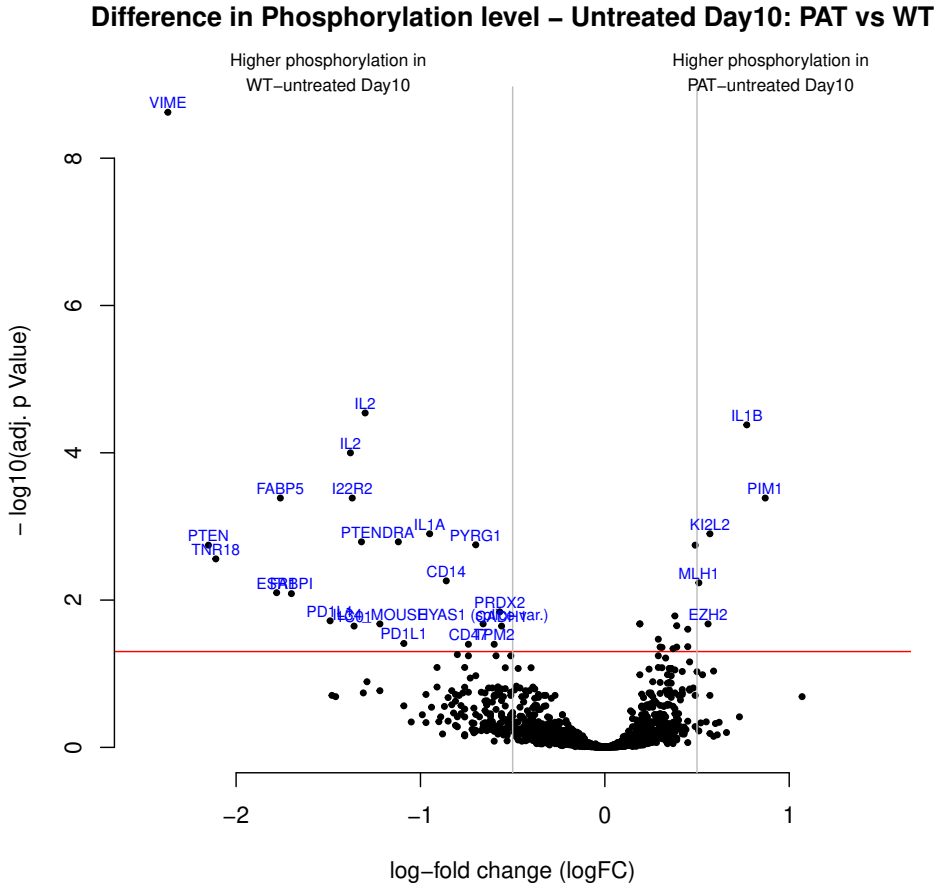

Figure 19: Several proteins exhibited distinct phosphorylation variations in PAT-untreated Day10 and WT-untreated Day10. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-untreated Day10, proteins with a negative value in WT-untreated Day10.

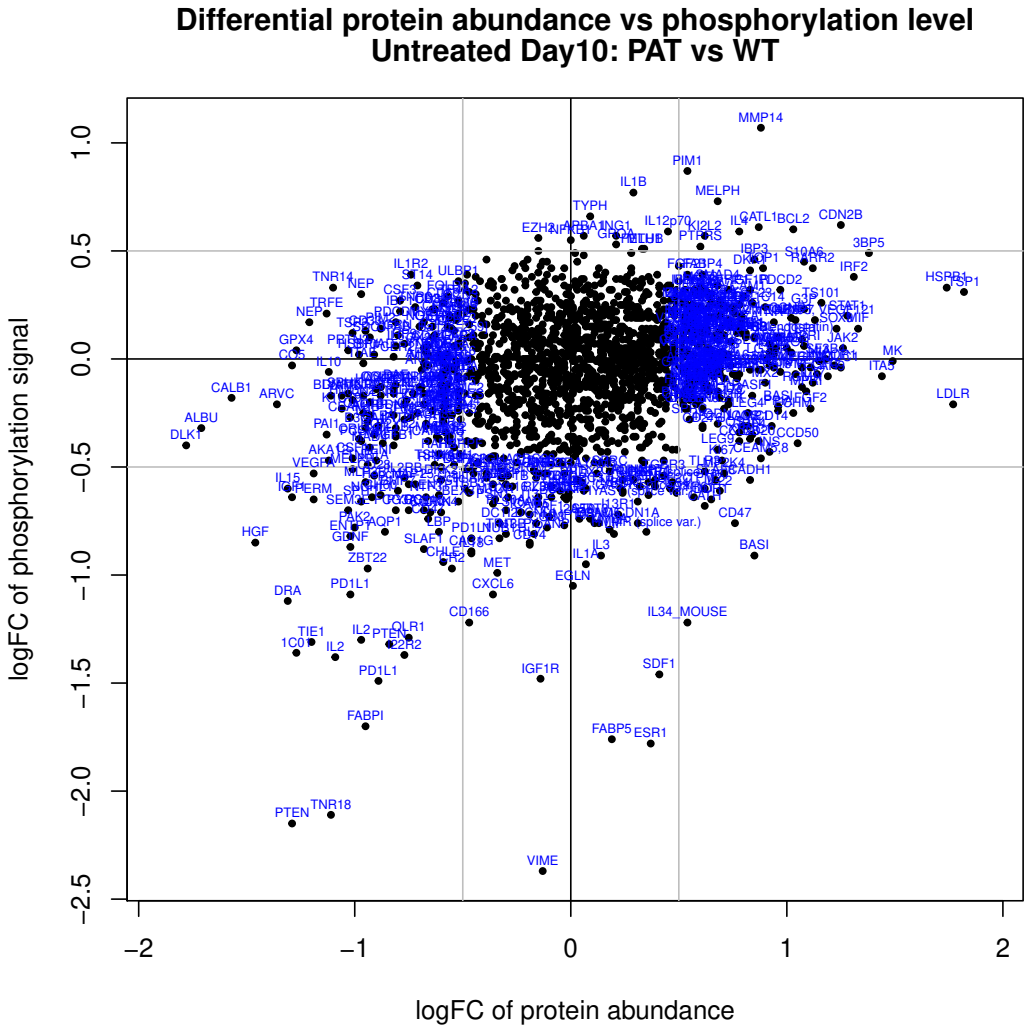

Figure 20: Overview of differences in protein abundance as well as phosphorylation levels between PAT-untreated Day10 and WT-untreated Day10. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-untreated Day10, while proteins with a negative logFC protein were higher abundant in WT-untreated Day10. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-untreated Day10. For proteins with a negative logFC phos higher phosphorylation signals were obtained in WT-untreated Day10.

Table 11: Proteins with differential phosphorylation in PAT-untreated Day10 and WT-untreated Day10. Proteins with a positive logFC value were more phosphorylated in PAT-untreated Day10, proteins with a negative value in WT-untreated Day10. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
PIM1	ab1046	PIM1_HUMAN	P11309	PIM1	0.87	10.20	4.1e-04
IL1B	ab0204	IL1B_HUMAN	P01584	IL1B	0.77	10.74	4.2e-05
KI2L2	ab1134	KI2L2_HUMAN	P43627	KIR2DL2	0.57	11.65	1.3e-03
EZH2	ab0977	EZH2_HUMAN	Q15910	EZH2	0.56	11.41	2.1e-02
MLH1	ab0459	MLH1_HUMAN	P40692	MLH1	0.51	9.21	5.8e-03
CADH1	ab1340	CADH1_HUMAN	P12830	CDH1	-0.56	11.74	2.3e-02
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	-0.57	12.43	1.4e-02
TPM2	ab1078	TPM2_HUMAN	P07951	TPM2	-0.60	9.43	4.0e-02
HYAS1 (splice var.)	ab2830		Q92839	HAS1	-0.66	8.66	2.1e-02
PYRG1	ab0085	PYRG1_HUMAN	P17812	CTPS1	-0.70	11.37	1.8e-03
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-0.74	11.26	4.0e-02
CD14	ab1627	CD14_HUMAN	P08571	CD14	-0.86	12.49	5.5e-03
IL1A	ab2263	IL1A_HUMAN	P01583	IL1A	-0.95	13.51	1.3e-03
PD1L1	ab0983	PD1L1_HUMAN	Q9NZQ7	CD274	-1.09	10.05	3.9e-02
DRA	ab1581	DRA_HUMAN	P01903	HLA-DRA	-1.12	10.74	1.6e-03
IL34_MOUSE	ab1224	IL34_MOUSE	Q8R1R4	Il34	-1.22	10.21	2.1e-02
IL2	ab1901	IL2_HUMAN	P60568	IL2	-1.30	11.08	2.9e-05
PTEN	ab0454	PTEN_HUMAN	P60484	PTEN	-1.32	10.45	1.6e-03
1C01	ab0754	1C01_HUMAN	P30499	HLA-C	-1.36	10.75	2.3e-02
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.37	10.58	4.1e-04
IL2	ab1115	IL2_HUMAN	P60568	IL2	-1.38	10.67	1.0e-04
PD1L1	ab0973	PD1L1_HUMAN	Q9NZQ7	CD274	-1.49	10.21	1.9e-02
FABPI	ab1145	FABPI_HUMAN	P12104	FABP2	-1.70	10.31	8.2e-03
FABP5	ab1246	FABP5_HUMAN	Q01469	FABP5	-1.76	10.84	4.1e-04
ESR1	ab1339	ESR1_HUMAN	P03372	ESR1	-1.78	12.84	7.9e-03
TNR18	ab2113	TNR18_HUMAN	Q9Y5U5	TNFRSF18	-2.11	11.58	2.8e-03
PTEN	ab1024	PTEN_HUMAN	P60484	PTEN	-2.15	10.70	1.8e-03
VIME	ab1164	VIME_HUMAN	P08670	VIM	-2.37	11.16	2.4e-09

4.2.2 Untreated Day20: PAT vs WT

Between PAT-untreated Day20 and WT-untreated Day20, 20 antibodies recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 21) and listed in Table 12. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 22.

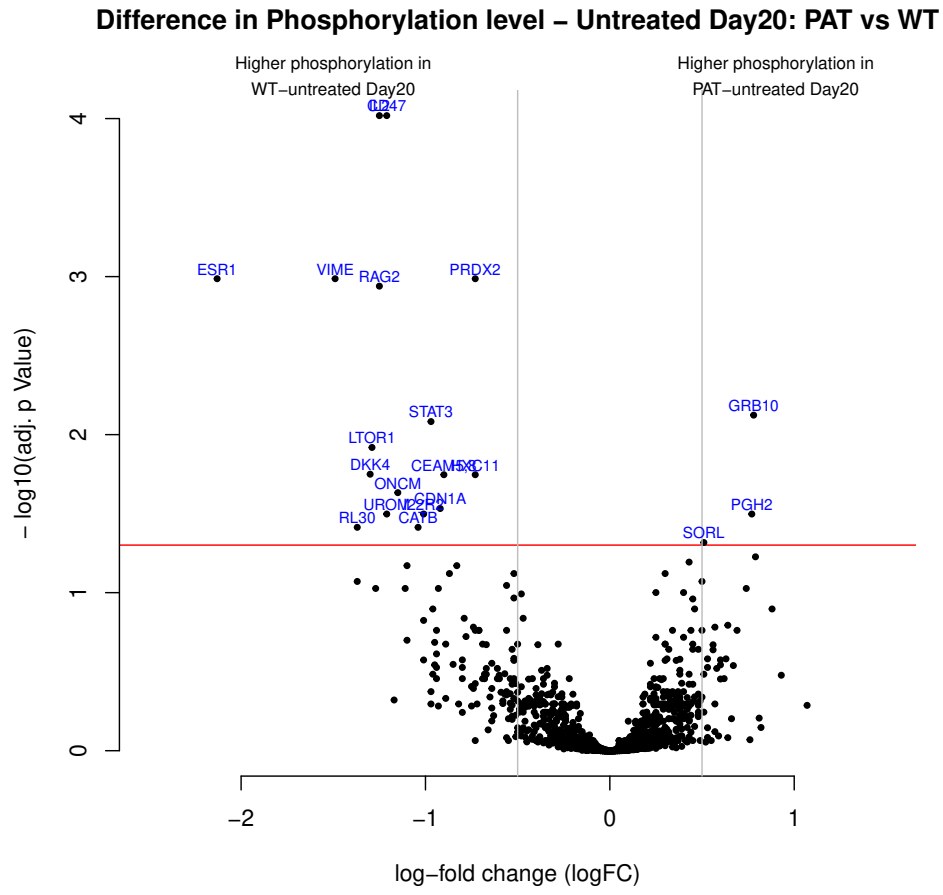

Figure 21: Several proteins exhibited distinct phosphorylation variations in PAT-untreated Day20 and WT-untreated Day20. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-untreated Day20, proteins with a negative value in WT-untreated Day20.

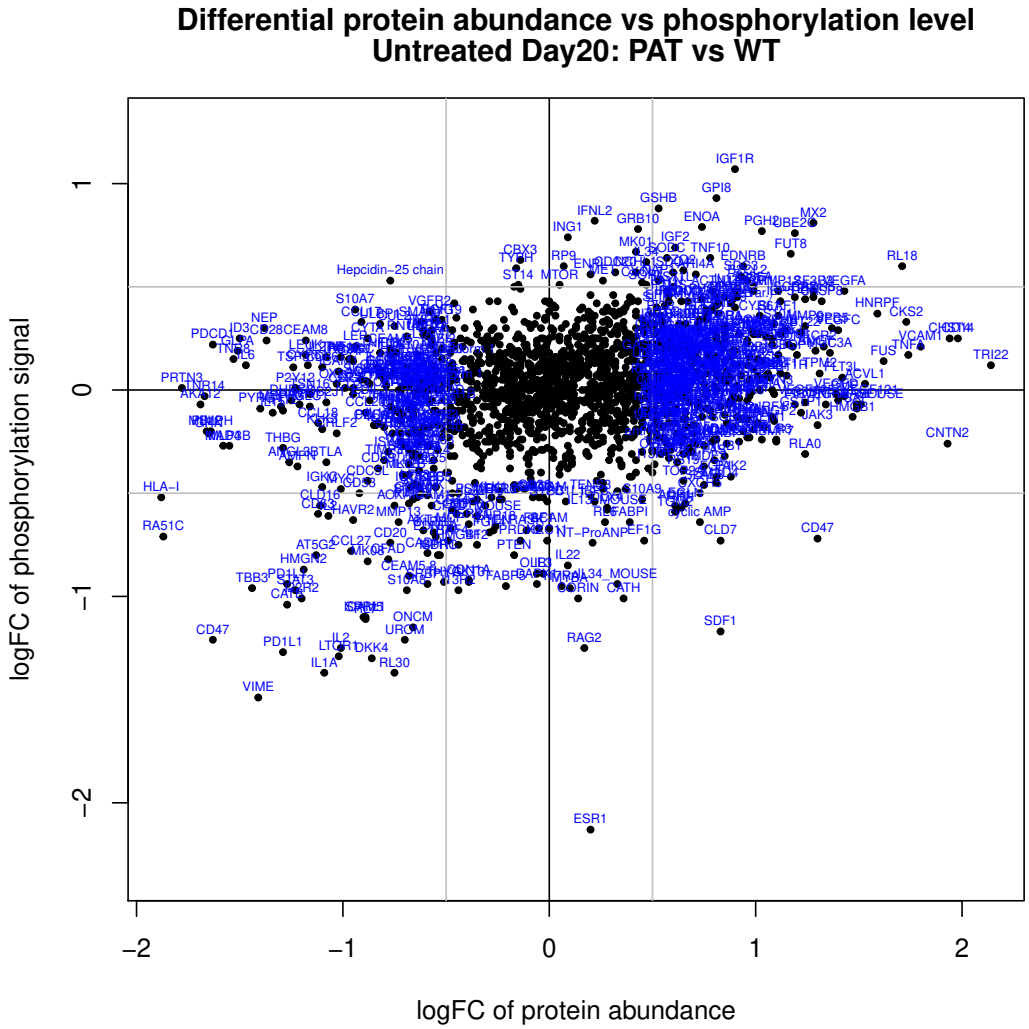

Figure 22: Overview of differences in protein abundance as well as phosphorylation levels between PAT-untreated Day20 and WT-untreated Day20. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-untreated Day20, while proteins with a negative logFC protein were higher abundant in WT-untreated Day20. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-untreated Day20. For proteins with a negative logFC phos higher phosphorylation signals were obtained in WT-untreated Day20.

Table 12: Proteins with differential phosphorylation in PAT-untreated Day20 and WT-untreated Day20. Proteins with a positive logFC value were more phosphorylated in PAT-untreated Day20, proteins with a negative value in WT-untreated Day20. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
GRB10	ab0847	GRB10_HUMAN	Q13322	GRB10	0.78	12.59	7.5e-03
PGH2	ab0643	PGH2_HUMAN	P35354	PTGS2	0.77	10.37	3.2e-02
SORL	ab0522	SORL_HUMAN	Q92673	SORL1	0.51	11.16	4.8e-02
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	-0.73	12.43	1.0e-03
HXC11	ab0658	HXC11_HUMAN	O43248	HOXC11	-0.73	11.07	1.8e-02
CEAM5,8	ab1634		P06731	CEACAM5	-0.90	13.41	1.8e-02
CDN1A	ab1043	CDN1A_HUMAN	P38936	CDKN1A	-0.92	12.51	2.9e-02
STAT3	ab1042	STAT3_HUMAN	P40763	STAT3	-0.97	12.14	8.3e-03
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.01	10.58	3.2e-02
CATB	ab1172	CATB_HUMAN	P07858	CTSB	-1.04	9.48	3.9e-02
ONCM	ab1885	ONCM_HUMAN	P13725	OSM	-1.15	11.02	2.3e-02
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-1.21	11.26	9.6e-05
UROM	ab2694	UROM_HUMAN	P07911	UMOD	-1.21	10.70	3.2e-02
IL2	ab1901	IL2_HUMAN	P60568	IL2	-1.25	11.08	9.6e-05
RAG2	ab1047	RAG2_HUMAN	P55895	RAG2	-1.25	10.89	1.1e-03
LTOR1	ab0768	LTOR1_HUMAN	Q6IAA8	LAMTOR1	-1.29	12.61	1.2e-02
DKK4	ab1942	DKK4_HUMAN	Q9UBT3	DKK4	-1.30	10.86	1.8e-02
RL30	ab1282	RL30_HUMAN	P62888	RPL30	-1.37	11.29	3.9e-02
VIME	ab1164	VIME_HUMAN	P08670	VIM	-1.49	11.16	1.0e-03
ESR1	ab1339	ESR1_HUMAN	P03372	ESR1	-2.13	12.84	1.0e-03

4.2.3 Untreated Day30: PAT vs WT

Between PAT-untreated Day30 and WT-untreated Day30, 140 antibodies recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 23) and listed in Table 13. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 24.

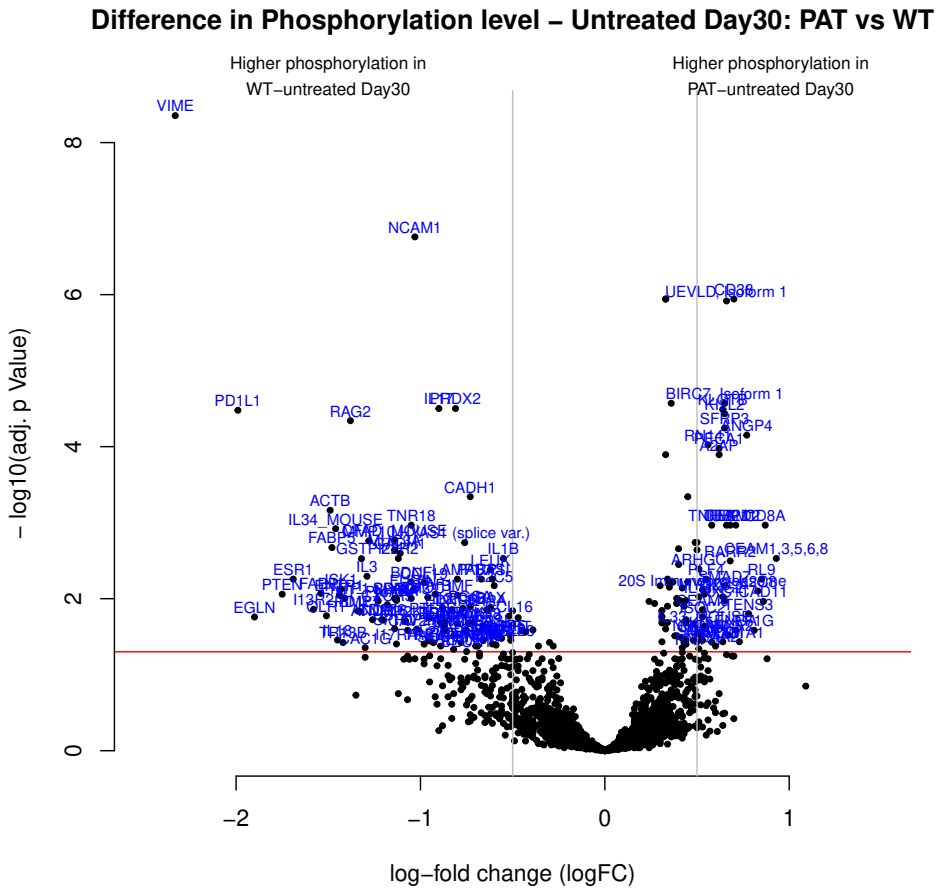

Figure 23: Several proteins exhibited distinct phosphorylation variations in PAT-untreated Day30 and WT-untreated Day30. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-untreated Day30, proteins with a negative value in WT-untreated Day30.

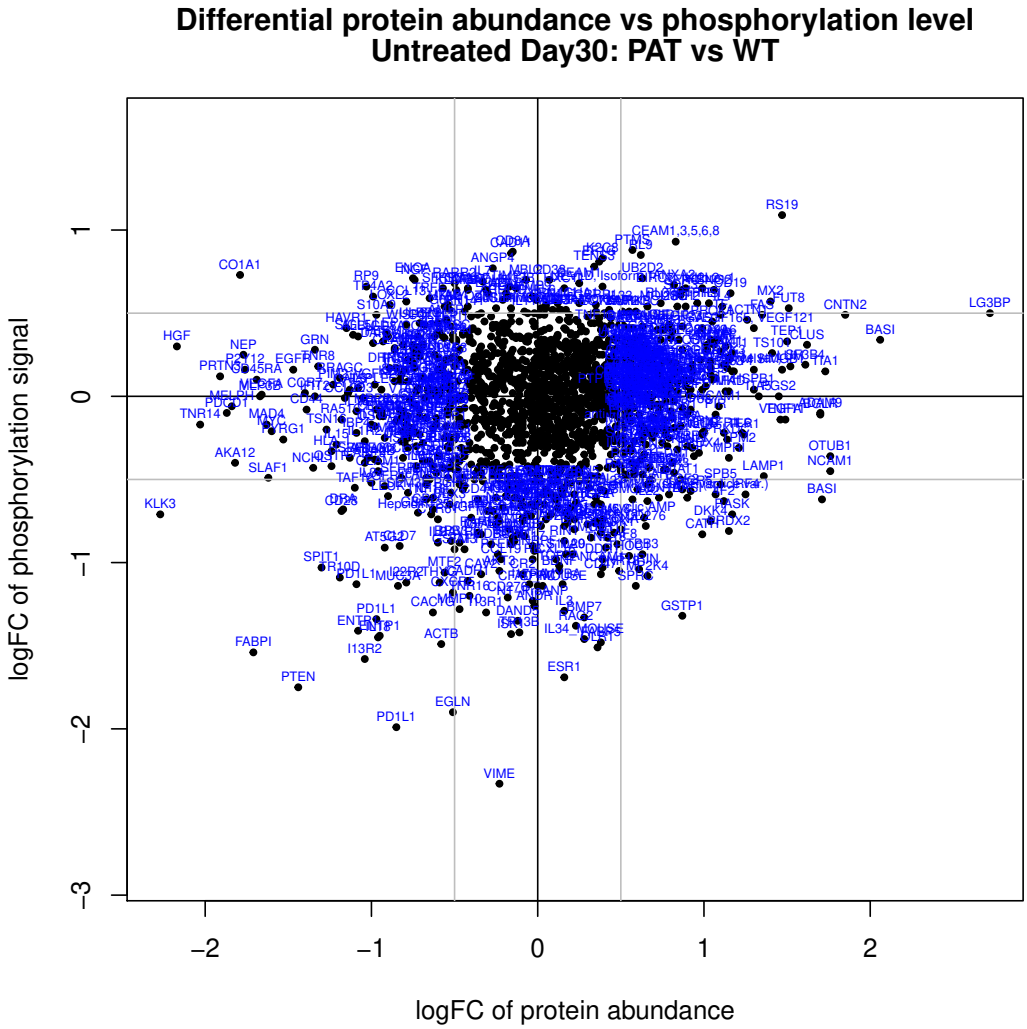

Figure 24: Overview of differences in protein abundance as well as phosphorylation levels between PAT-untreated Day30 and WT-untreated Day30. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-untreated Day30, while proteins with a negative logFC protein were higher abundant in WT-untreated Day30. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-untreated Day30. For proteins with a negative logFC phos higher phosphorylation signals were obtained in WT-untreated Day30.

Table 13: Proteins with differential phosphorylation in PAT-untreated Day30 and WT-untreated Day30. Proteins with a positive logFC value were more phosphorylated in PAT-untreated Day30, proteins with a negative value in WT-untreated Day30. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CEAM1,3,5,6,8	ab1632		P13688	CEACAM1	0.93	11.21	3.0e-03
CD8A	ab1375	CD8A_HUMAN	P01732	CD8A	0.87	12.68	1.1e-03
CAD11	ab2820	CAD11_HUMAN	P55287	CDH11	0.86	12.28	1.1e-02
RL9	ab0703	RL9_HUMAN	P32969	RPL9	0.85	10.35	5.5e-03
K2C8	ab0072	K2C8_HUMAN	P05787	KRT8	0.83	14.23	7.9e-03
EF1G	ab1202	EF1G_HUMAN	P26641	EEF1G	0.81	10.72	2.6e-02
TENS3	ab0021	TENS3_HUMAN	Q68CZ2	TNS3	0.78	11.75	1.6e-02
ANGP4	ab1940	ANGP4_HUMAN	Q9Y264	ANGPT4	0.77	12.46	7.1e-05
CO1A1	ab2123	CO1A1_HUMAN	P02452	COL1A1	0.73	14.15	3.7e-02
UB2D2	ab0011	UB2D2_HUMAN	P62837	UBE2D2	0.71	11.53	1.1e-03
ENOA	ab0646	ENOA_HUMAN	P06733	ENO1	0.71	12.71	2.6e-02
CD38	ab1429	CD38_HUMAN	P28907	CD38	0.70	12.77	1.1e-06
CEAM1	ab2363	CEAM1_HUMAN	P13688	CEACAM1	0.68	11.73	1.1e-03
RARR2	ab2130	RARR2_HUMAN	Q99969	RARRES2	0.68	11.36	3.2e-03
ANXA2	ab0619	ANXA2_HUMAN	P07355	ANXA2	0.67	11.08	3.0e-02
UEVLD, Isoform 1	ab0061	UEVLD_HUMAN	Q8IX04	UEVLD	0.66	12.84	1.2e-06
TIMP1	ab1057	TIMP1_HUMAN	P01033	TIMP1	0.66	11.26	1.1e-03
BIRC7, Isoform 1	ab0056	BIRC7_HUMAN	Q96CA5	BIRC7	0.65	11.39	2.7e-05
KI2L2	ab1134	KI2L2_HUMAN	P43627	KIR2DL2	0.65	11.65	3.7e-05
SFRP3	ab1295	SFRP3_HUMAN	Q92765	FRZB	0.65	12.42	5.7e-05
SMAD7	ab0009	SMAD7_HUMAN	O15105	SMAD7	0.65	12.22	6.7e-03
HXC11	ab0658	HXC11_HUMAN	O43248	HOXC11	0.65	11.07	1.1e-02
KLOTB	ab2691	KLOTB_HUMAN	Q86Z14	KLB	0.64	11.67	3.3e-05
SNG2	ab0809	SNG2_HUMAN	O43760	SYNGR2	0.64	9.96	9.5e-03
AFAM	ab2791	AFAM_HUMAN	P43652	AFM	0.64	12.06	3.7e-02
PECA1	ab1424	PECA1_HUMAN	P16284	PECAM1	0.62	11.94	1.1e-04
A2AP	ab1935	A2AP_HUMAN	P08697	SERPINF2	0.62	11.11	1.3e-04
TP4A2	ab0023	TP4A2_HUMAN	Q12974	PTP4A2	0.60	12.00	4.2e-02
TNFL6	ab1983	TNFL6_HUMAN	P48023	FASLG	0.58	11.47	1.1e-03
ARHGC	ab0039	ARHGC_HUMAN	Q9NZN5	ARHGEF12	0.58	12.05	3.7e-02
RN141	ab0053	RN141_HUMAN	Q8WVD5	RNF141	0.56	13.49	9.4e-05
PLF4	ab1841	PLF4_HUMAN	P02776	PF4	0.55	12.24	5.5e-03
MYOZ3	ab2021	MYOZ3_HUMAN	Q8TDC0	MYOZ3	0.54	12.03	8.7e-03
IL33_MOUSE	ab1213	IL33_MOUSE	Q8BVZ5	Il33	0.54	10.20	2.3e-02
20S Immunoproteasome	ab2722		P28062	PSMB8	0.53	11.12	7.6e-03
CEAM6	ab2714	CEAM6_HUMAN	P40199	CEACAM6	0.53	9.53	1.4e-02
ISOC2	ab0073	ISOC2_HUMAN	Q96AB3	ISOC2	0.53	11.27	1.7e-02
SMUF1	ab0055	SMUF1_HUMAN	Q9HCE7	SMURF1	0.53	11.78	3.5e-02
KIT	ab0972	KIT_HUMAN	P10721	KIT	0.52	13.17	2.7e-02
NRCAM	ab2110	NRCAM_HUMAN	Q92823	NRCAM	0.52	10.02	3.0e-02
CXL10	ab2503	CXL10_HUMAN	P02778	CXCL10	0.52	11.38	3.1e-02
ARHGC	ab0038	ARHGC_HUMAN	Q9NZN5	ARHGEF12	0.51	13.02	4.1e-03
IL11	ab1324	IL11_HUMAN	P20809	IL11	0.51	10.94	9.5e-03
RN141	ab0052	RN141_HUMAN	Q8WVD5	RNF141	0.51	11.04	4.6e-02
HPRT	ab1076	HPRT_HUMAN	P00492	HPRT1	-0.51	11.98	3.1e-02
CCL28	ab1878	CCL28_HUMAN	Q9NRJ3	CCL28	-0.51	12.76	3.5e-02
CCL16	ab1763	CCL16_HUMAN	O15467	CCL16	-0.52	10.09	1.7e-02
IL1B	ab0204	IL1B_HUMAN	P01584	IL1B	-0.55	10.74	3.0e-03
PD1L2	ab1020	PD1L2_HUMAN	Q9BQ51	PDCD1LG2	-0.56	13.86	3.3e-02
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	-0.57	12.67	3.0e-02
DMP1	ab1975	DMP1_HUMAN	Q13316	DMP1	-0.59	9.71	4.1e-02
K2C5	ab1346	K2C5_HUMAN	P13647	KRT5	-0.60	11.32	6.7e-03
LEUK	ab1434	LEUK_HUMAN	P16150	SPN	-0.60	13.57	3.1e-02
BASI	ab1487	BASI_HUMAN	P35613	BSG	-0.61	11.20	5.5e-03
CXB1	ab0642	CXB1_HUMAN	P08034	GJB1	-0.61	10.85	3.9e-02
LEUK	ab1435	LEUK_HUMAN	P16150	SPN	-0.62	11.43	4.2e-03
BAX	ab0449	BAX_HUMAN	Q07812	BAX	-0.62	12.24	1.3e-02
BASI	ab1486	BASI_HUMAN	P35613	BSG	-0.62	10.73	2.6e-02

Continued on next page

Table 13 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
IL12A	ab1088	IL12A_HUMAN	P29459	IL12A	-0.64	9.62	1.4e-02
CD14	ab1627	CD14_HUMAN	P08571	CD14	-0.66	12.49	2.3e-02
SODC	ab0644	SODC_HUMAN	P00441	SOD1	-0.66	10.72	3.4e-02
CNN2	ab1238	CNN2_HUMAN	Q99439	CNN2	-0.66	11.61	3.6e-02
PARP1	ab1125	PARP1_HUMAN	P09874	PARP1	-0.67	9.74	5.5e-03
ENOG	ab2054	ENOG_HUMAN	P09104	ENO2	-0.69	9.58	4.2e-02
S100P	ab1062	S100P_HUMAN	P25815	S100P	-0.70	12.26	4.2e-02
KLK3	ab1879	KLK3_HUMAN	P07288	KLK3	-0.71	11.63	2.0e-02
CADH1	ab1340	CADH1_HUMAN	P12830	CDH1	-0.73	11.74	4.6e-04
PGCA	ab2774	PGCA_HUMAN	P16112	ACAN	-0.73	10.32	1.3e-02
CEAM5,8	ab1634		P06731	CEACAM5	-0.74	13.41	2.1e-02
MAMC2	ab0844	MAMC2_HUMAN	Q7Z304	MAMDC2	-0.75	10.74	2.6e-02
BECN1	ab1146	BECN1_HUMAN	Q14457	BECN1	-0.75	10.14	5.0e-02
HYAS1 (splice var.)	ab2830		Q92839	HAS1	-0.76	8.66	1.8e-03
K2C6B	ab0722	K2C6B_HUMAN	P04259	KRT6B	-0.77	11.27	1.3e-02
ADA12	ab2463	ADA12_HUMAN	O43184	ADAM12	-0.78	10.74	3.8e-02
LAMP1	ab1625	LAMP1_HUMAN	P11279	LAMP1	-0.80	10.54	5.5e-03
BMF	ab1040	BMF_HUMAN	Q96LC9	BMF	-0.80	11.62	9.0e-03
PCNA	ab1060	PCNA_HUMAN	P12004	PCNA	-0.80	11.96	2.1e-02
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	-0.81	12.43	3.2e-05
RARB	ab0711	RARB_HUMAN	P10826	RARB	-0.82	12.13	3.1e-02
RLA0	ab0585	RLA0_HUMAN	P05388	RPLP0	-0.82	10.33	4.6e-02
EDNRB	ab0645	EDNRB_HUMAN	P24530	EDNRB	-0.83	10.87	1.4e-02
TDGF1	ab1886	TDGF1_HUMAN	P13385	TDGF1	-0.87	9.35	2.0e-02
RPB3	ab0600	RPB3_HUMAN	P19387	POLR2C	-0.87	14.44	2.3e-02
RIN1	ab0852	RIN1_HUMAN	Q13671	RIN1	-0.87	10.67	2.6e-02
IL2	ab1115	IL2_HUMAN	P60568	IL2	-0.88	10.67	1.3e-02
BCAM	ab2290	BCAM_HUMAN	P50895	BCAM	-0.89	11.51	2.1e-02
SLAF8	ab2129	SLAF8_HUMAN	Q9P0V8	SLAMF8	-0.89	10.30	4.2e-02
IL17	ab2717	IL17_HUMAN	Q16552	IL17A	-0.90	12.67	3.2e-05
FAF1	ab1248	FAF1_HUMAN	Q9UNN5	FAF1	-0.92	11.24	8.7e-03
HNRPF	ab0555	HNRPF_HUMAN	P52597	HNRNPF	-0.93	11.56	3.8e-02
PTEN	ab0454	PTEN_HUMAN	P60484	PTEN	-0.95	10.45	1.8e-02
IL20	ab1817	IL20_HUMAN	Q9NYY1	IL20	-0.95	10.71	3.6e-02
THOC1	ab0861	THOC1_HUMAN	Q96FV9	THOC1	-0.96	10.34	9.6e-03
CCL19	ab1585	CCL19_HUMAN	Q99731	CCL19	-0.98	9.95	6.2e-03
RB	ab1175	RB_HUMAN	P06400	RB1	-0.98	9.92	4.0e-02
TOP2A	ab1066	TOP2A_HUMAN	P11388	TOP2A	-1.02	10.83	2.5e-02
NCAM1	ab2478	NCAM1_HUMAN	P13591	NCAM1	-1.03	10.92	1.7e-07
FURIN	ab1740	FURIN_HUMAN	P09958	FURIN	-1.04	9.17	7.7e-03
TNR18	ab1138	TNR18_HUMAN	Q9Y5U5	TNFRSF18	-1.05	12.26	1.1e-03
BDNF	ab2677	BDNF_HUMAN	P23560	BDNF	-1.05	12.09	6.0e-03
AKT3	ab1106	AKT3_HUMAN	Q9Y243	AKT3	-1.05	12.40	9.9e-03
CAV2	ab0631	CAV2_HUMAN	P51636	CAV2	-1.07	11.22	2.6e-02
MP2K4	ab1265	MP2K4_HUMAN	P45985	MAP2K4	-1.08	11.66	2.0e-02
CADH1	ab1182	CADH1_HUMAN	P12830	CDH1	-1.11	11.00	2.5e-03
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.12	10.58	3.0e-03
PD1L1	ab0983	PD1L1_HUMAN	Q9NZQ7	CD274	-1.13	10.05	9.9e-03
MYBA	ab0979	MYBA_HUMAN	P10243	MYBL1	-1.13	11.25	1.1e-02
I17RA	ab2407	I17RA_HUMAN	Q96F46	IL17RA	-1.13	10.99	3.9e-02
CFAD_MOUSE	ab1220	CFAD_MOUSE	P03953	Cfd	-1.14	10.10	1.7e-03
MUC3A	ab0672	MUC3A_HUMAN	Q02505	MUC3A	-1.14	10.82	2.3e-03
SPRC	ab2197	SPRC_HUMAN	P09486	SPARC	-1.14	12.18	9.9e-03
SPRC	ab1026	SPRC_HUMAN	P09486	SPARC	-1.14	12.44	2.5e-02
CXCR5	ab0544	CXCR5_HUMAN	P32302	CXCR5	-1.18	13.88	1.2e-02
TNR16	ab2445	TNR16_HUMAN	P08138	NGFR	-1.20	11.44	1.9e-02
CD276	ab1130	CD276_HUMAN	Q5ZPR3	CD276	-1.21	14.34	1.9e-02
NT-ProANP	ab2799		P01160	NPPA	-1.23	10.18	1.1e-02
ANDR	ab1336	ANDR_HUMAN	P10275	AR	-1.26	13.53	1.9e-02
MMP10	ab0697	MMP10_HUMAN	P09238	MMP10	-1.28	13.23	1.7e-03
IL3	ab2172	IL3_HUMAN	P08700	IL3	-1.29	9.53	5.1e-03

Continued on next page

Table 13 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CAC1G	ab1315	CAC1G_HUMAN	O43497	CACNA1G	-1.30	9.42	4.4e-02
GSTP1	ab1091	GSTP1_HUMAN	P09211	GSTP1	-1.32	11.57	3.0e-03
BMP7	ab1772	BMP7_HUMAN	P18075	BMP7	-1.33	9.81	1.5e-02
PD1L1	ab0973	PD1L1_HUMAN	Q9NZQ7	CD274	-1.34	10.21	1.5e-02
RAG2	ab1047	RAG2_HUMAN	P55895	RAG2	-1.38	10.89	4.6e-05
ENTP1	ab1111	ENTP1_HUMAN	P49961	ENTPD1	-1.41	10.76	9.9e-03
TR13B	ab2250	TR13B_HUMAN	O14836	TNFRSF13B	-1.42	11.07	3.8e-02
ISK1	ab2000	ISK1_HUMAN	P00995	SPINK1	-1.43	11.13	7.5e-03
ENTP1	ab0990	ENTP1_HUMAN	P49961	ENTPD1	-1.44	11.22	9.0e-03
IL18	ab1734	IL18_HUMAN	Q14116	IL18	-1.45	9.70	3.5e-02
IL34_MOUSE	ab1224	IL34_MOUSE	Q8R1R4	Il34	-1.46	10.21	1.2e-03
FABP5	ab1246	FABP5_HUMAN	Q01469	FABP5	-1.48	10.84	2.1e-03
ACTB	ab1343	ACTB_HUMAN	P60709	ACTB	-1.49	12.17	6.9e-04
OLR1	ab1989	OLR1_HUMAN	P78380	OLR1	-1.51	10.85	1.7e-02
FABPI	ab1145	FABPI_HUMAN	P12104	FABP2	-1.54	10.31	8.5e-03
I13R2	ab1947	I13R2_HUMAN	Q14627	IL13RA2	-1.58	12.09	1.4e-02
ESR1	ab1339	ESR1_HUMAN	P03372	ESR1	-1.69	12.84	5.5e-03
PTEN	ab1024	PTEN_HUMAN	P60484	PTEN	-1.75	10.70	8.7e-03
EGLN	ab1746	EGLN_HUMAN	P17813	ENG	-1.90	10.25	1.7e-02
PD1L1	ab1823	PD1L1_HUMAN	Q9NZQ7	CD274	-1.99	10.48	3.3e-05
VIME	ab1164	VIME_HUMAN	P08670	VIM	-2.33	11.16	4.4e-09

4.2.4 Treated Day10: PAT vs WT

Between PAT-treated Day10 and WT-treated Day10, 2 antibodies recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 25) and listed in Table 14. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 26.

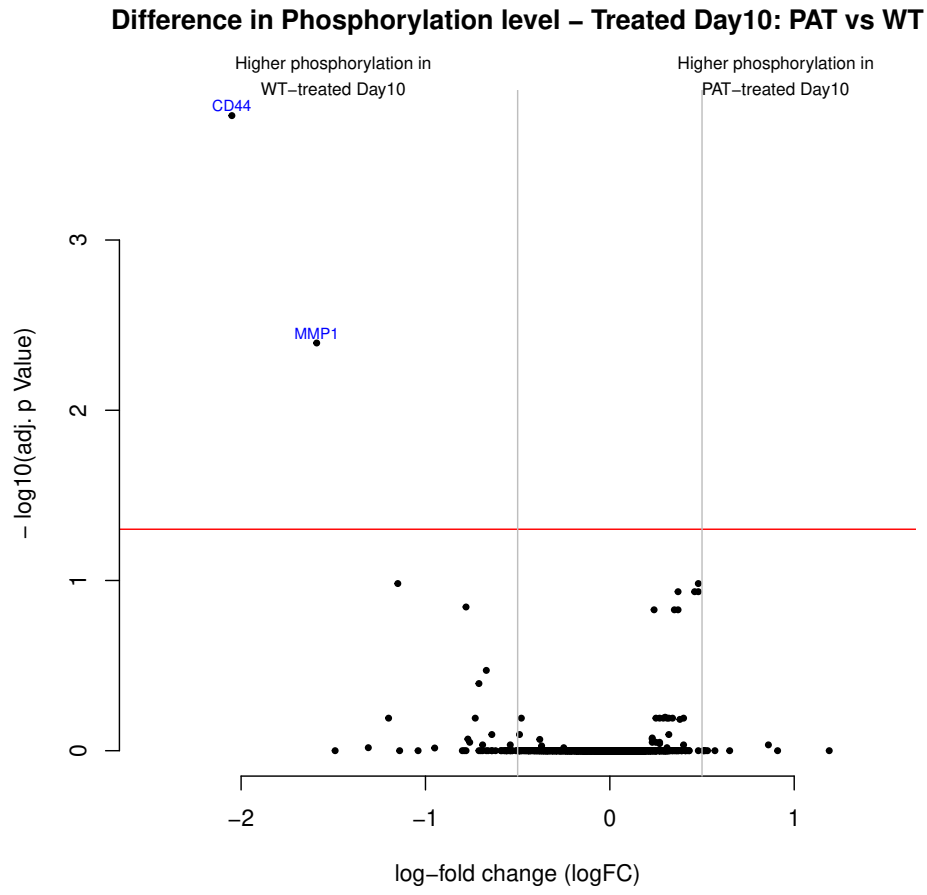

Figure 25: Several proteins exhibited distinct phosphorylation variations in PAT-treated Day10 and WT-treated Day10. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-treated Day10, proteins with a negative value in WT-treated Day10.

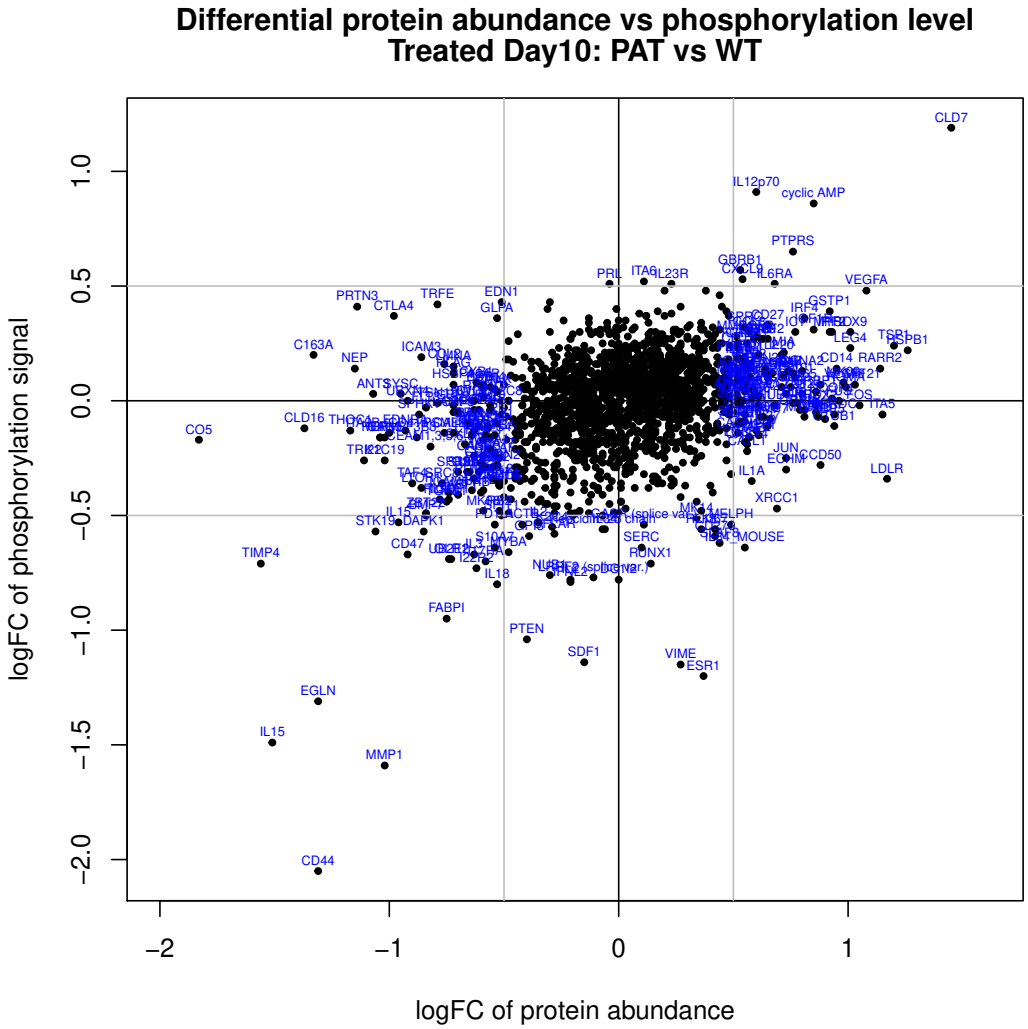

Figure 26: Overview of differences in protein abundance as well as phosphorylation levels between PAT-treated Day10 and WT-treated Day10. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-treated Day10, while proteins with a negative logFC protein were higher abundant in WT-treated Day10. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-treated Day10. For proteins with a negative logFC phos higher phosphorylation signals were obtained in WT-treated Day10.

Table 14: Proteins with differential phosphorylation in PAT-treated Day10 and WT-treated Day10. Proteins with a positive logFC value were more phosphorylated in PAT-treated Day10, proteins with a negative value in WT-treated Day10. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
MMP1	ab2484	MMP1_HUMAN	P03956	MMP1	-1.59	9.00	4.0e-03
CD44	ab1437	CD44_HUMAN	P16070	CD44	-2.05	11.70	1.9e-04

4.2.5 Treated Day20: PAT vs WT

Between PAT-treated Day20 and WT-treated Day20, 10 antibodies recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 27) and listed in Table 15. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 28.

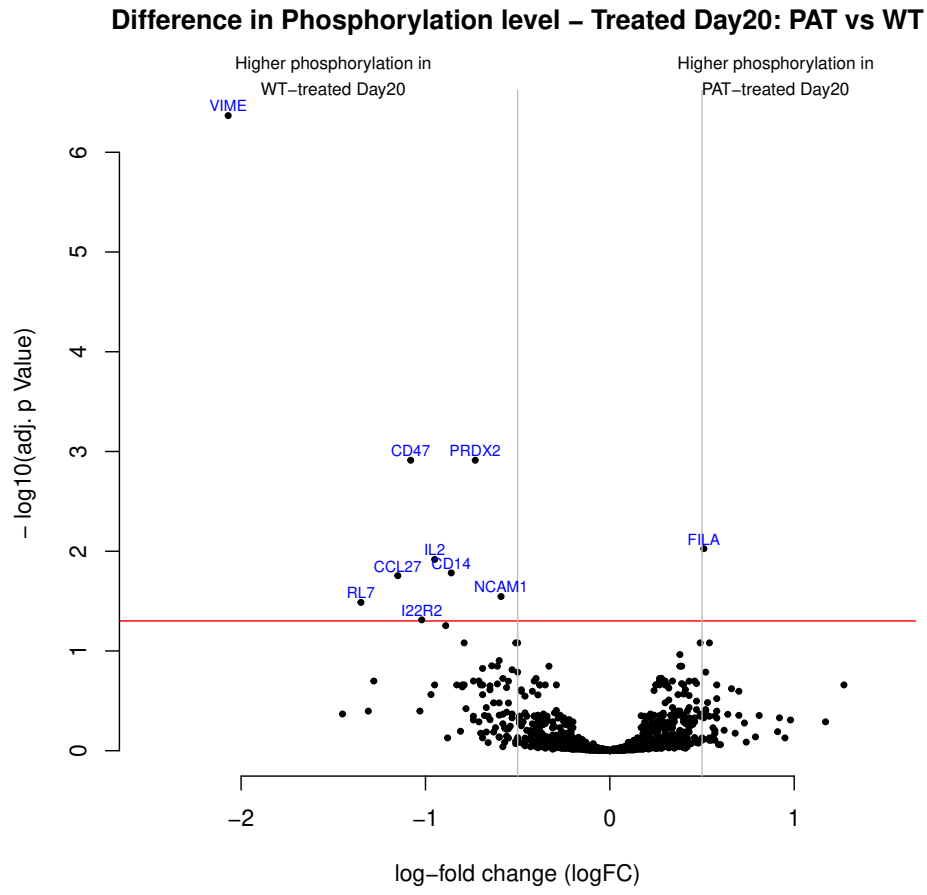

Figure 27: Several proteins exhibited distinct phosphorylation variations in PAT-treated Day20 and WT-treated Day20. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-treated Day20, proteins with a negative value in WT-treated Day20.

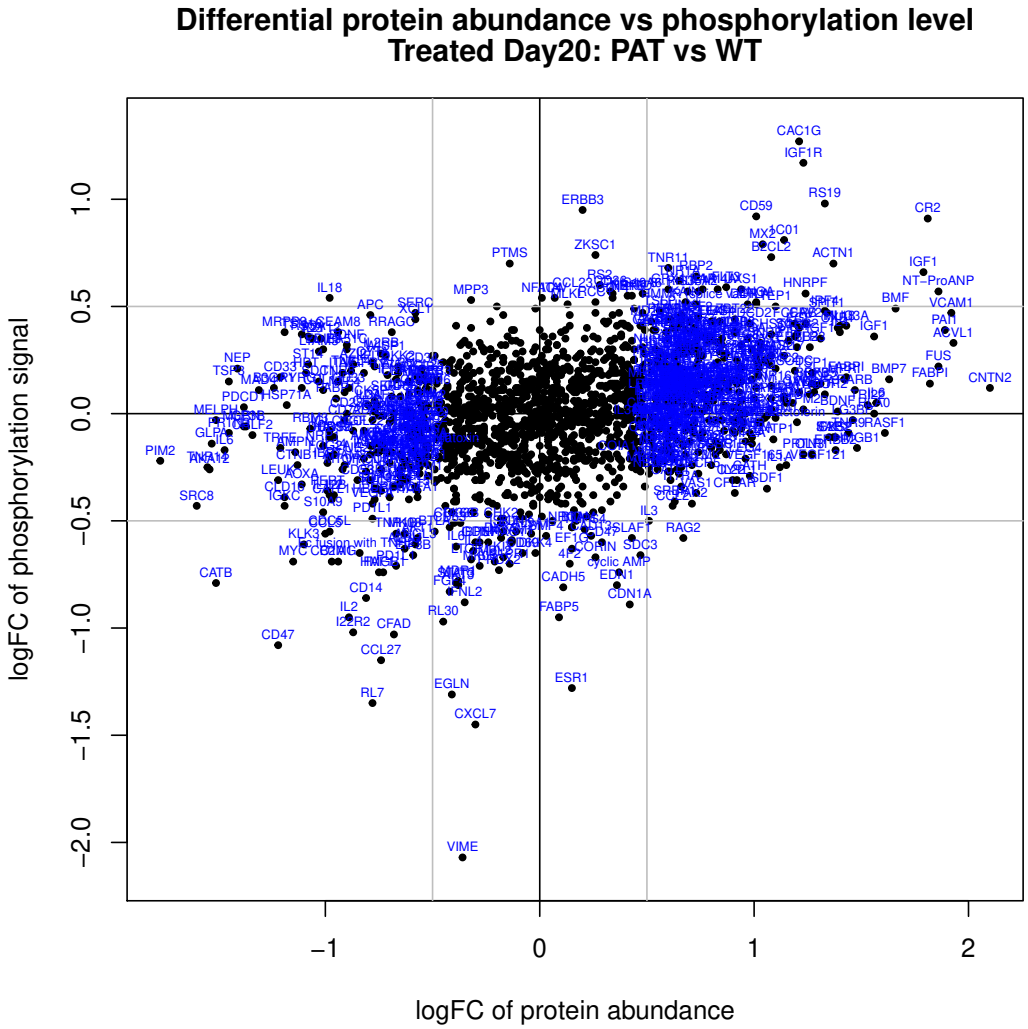

Figure 28: Overview of differences in protein abundance as well as phosphorylation levels between PAT-treated Day20 and WT-treated Day20. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-treated Day20, while proteins with a negative logFC protein were higher abundant in WT-treated Day20. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-treated Day20. For proteins with a negative logFC phos higher phosphorylation signals were obtained in WT-treated Day20.

Table 15: Proteins with differential phosphorylation in PAT-treated Day20 and WT-treated Day20. Proteins with a positive logFC value were more phosphorylated in PAT-treated Day20, proteins with a negative value in WT-treated Day20. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
FILA	ab1199	FILA_HUMAN	P20930	FLG	0.51	9.32	9.4e-03
NCAM1	ab2478	NCAM1_HUMAN	P13591	NCAM1	-0.59	10.92	2.8e-02
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	-0.73	12.43	1.2e-03
CD14	ab1627	CD14_HUMAN	P08571	CD14	-0.86	12.49	1.6e-02
IL2	ab1901	IL2_HUMAN	P60568	IL2	-0.95	11.08	1.2e-02
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.02	10.58	4.9e-02
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-1.08	11.26	1.2e-03
CCL27	ab2154	CCL27_HUMAN	Q9Y4X3	CCL27	-1.15	11.95	1.8e-02
RL7	ab1284	RL7_HUMAN	P18124	RPL7	-1.35	11.80	3.3e-02
VIME	ab1164	VIME_HUMAN	P08670	VIM	-2.07	11.16	4.3e-07

4.2.6 Treated Day30: PAT vs WT

Between PAT-treated Day30 and WT-treated Day30, 125 antibodies recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 29) and listed in Table 16. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 30.

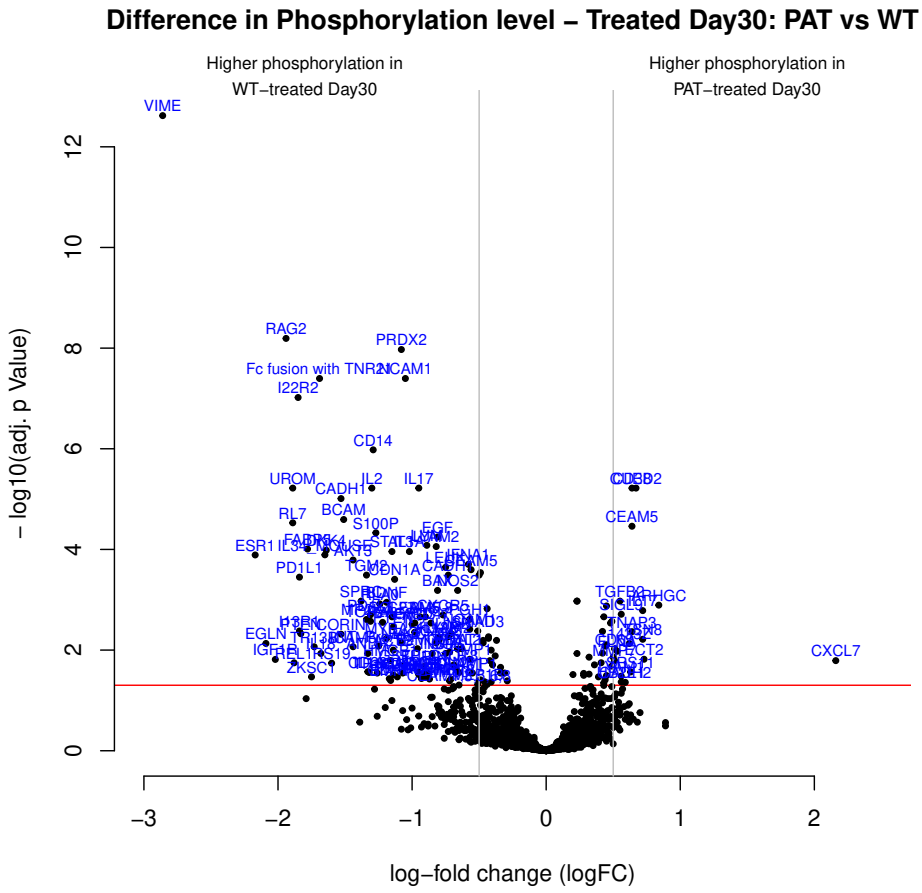

Figure 29: Several proteins exhibited distinct phosphorylation variations in PAT-treated Day30 and WT-treated Day30. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-treated Day30, proteins with a negative value in WT-treated Day30.

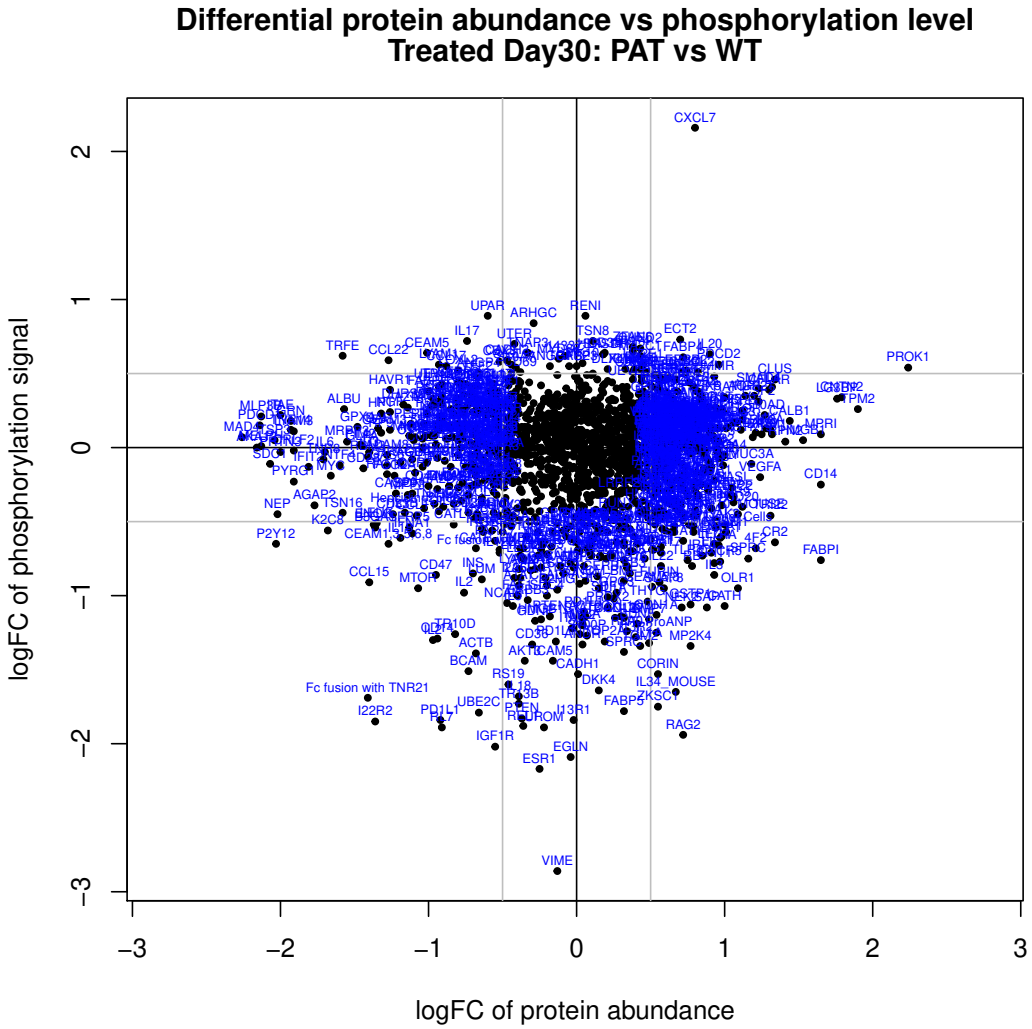

Figure 30: Overview of differences in protein abundance as well as phosphorylation levels between PAT-treated Day30 and WT-treated Day30. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-treated Day30, while proteins with a negative logFC protein were higher abundant in WT-treated Day30. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-treated Day30. For proteins with a negative logFC phos higher phosphorylation signals were obtained in WT-treated Day30.

Table 16: Proteins with differential phosphorylation in PAT-treated Day30 and WT-treated Day30. Proteins with a positive logFC value were more phosphorylated in PAT-treated Day30, proteins with a negative value in WT-treated Day30. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CXCL7	ab2128	CXCL7_HUMAN	P02775	PPBP	2.16	6.96	1.6e-02
ARHGC	ab0039	ARHGC_HUMAN	Q9NZN5	ARHGEF12	0.84	12.05	1.3e-03
ECT2	ab0041	ECT2_HUMAN	Q9H8V3	ECT2	0.73	11.89	1.5e-02
IL17	ab2102	IL17_HUMAN	Q16552	IL17A	0.72	11.42	1.6e-03
TSN8	ab1163	TSN8_HUMAN	P19075	TSPAN8	0.72	11.51	6.1e-03
CUED2	ab0051	CUED2_HUMAN	Q9H467	CUEDC2	0.67	9.92	6.0e-06
CD38	ab1429	CD38_HUMAN	P28907	CD38	0.64	12.77	6.0e-06
CEAM5	ab2720	CEAM5_HUMAN	P06731	CEACAM5	0.64	11.34	3.5e-05
TNAP3	ab1297	TNAP3_HUMAN	P21580	TNFAIP3	0.64	11.13	4.3e-03
SRS11	ab0827	SRS11_HUMAN	Q05519	SRSF11	0.63	10.15	2.7e-02
1433Z	ab2089	1433Z_HUMAN	P63104	YWHAZ	0.62	9.48	7.4e-03
CADH2	ab2760	CADH2_HUMAN	P19022	CDH2	0.59	9.82	4.4e-02
SIGL9	ab2005	SIGL9_HUMAN	Q9Y336	SIGLEC9	0.56	11.67	1.9e-03
LYAM1	ab1466	LYAM1_HUMAN	P14151	SELL	0.56	10.27	3.3e-02
UB2E1	ab1301	UB2E1_HUMAN	P51965	UBE2E1	0.56	10.96	4.3e-02
TGFB2	ab1753	TGFB2_HUMAN	P61812	TGFB2	0.55	10.68	1.1e-03
FLNA	ab0897	FLNA_HUMAN	P21333	FLNA	0.53	8.50	1.1e-02
CD69	ab1639	CD69_HUMAN	Q07108	CD69	0.51	11.62	9.4e-03
MMP7	ab1845	MMP7_HUMAN	P09237	MMP7	0.51	12.30	1.6e-02
SMAD3	ab0098	SMAD3_HUMAN	P84022	SMAD3	-0.51	8.14	4.2e-03
MEP1B	ab2793	MEP1B_HUMAN	Q16820	MEP1B	-0.51	11.24	4.8e-02
LAMP1	ab1203	LAMP1_HUMAN	P11279	LAMP1	-0.55	10.74	2.9e-02
CEAM5	ab0527	CEAM5_HUMAN	P06731	CEACAM5	-0.56	12.22	2.5e-04
PGH1	ab1520	PGH1_HUMAN	P23219	PTGS1	-0.57	9.69	2.4e-03
NCAM1	ab1459	NCAM1_HUMAN	P13591	NCAM1	-0.57	11.38	3.9e-03
TIMP1	ab1710	TIMP1_HUMAN	P01033	TIMP1	-0.57	10.64	1.5e-02
IFNA1	ab1519	IFNA1_HUMAN	P01562	IFNA1; IFNA13	-0.58	9.51	2.0e-04
STAT1	ab1151	STAT1_HUMAN	P42224	STAT1	-0.63	12.32	9.4e-03
LAMP1	ab1625	LAMP1_HUMAN	P11279	LAMP1	-0.65	10.54	2.8e-02
CEAM1,3,5,6,8	ab1632		P13688	CEACAM1	-0.65	11.21	5.0e-02
NOS2	ab1272	NOS2_HUMAN	P35228	NOS2	-0.66	10.97	6.5e-04
PD1L2	ab1020	PD1L2_HUMAN	Q9BQ51	PDCD1LG2	-0.66	13.86	9.6e-03
CLD1	ab1158	CLD1_HUMAN	O95832	CLDN1	-0.67	9.44	2.5e-02
C1QT3	ab2817	C1QT3_HUMAN	Q9BXJ4	C1QTNF3	-0.69	12.93	2.0e-02
IL12B	ab1731	IL12B_HUMAN	P29460	IL12B	-0.71	11.45	4.7e-03
TNR18	ab1138	TNR18_HUMAN	Q9Y5U5	TNFRSF18	-0.71	12.26	3.8e-02
MIA	ab2702	MIA_HUMAN	Q16674	MIA	-0.72	11.59	1.1e-02
MK03	ab1263	MK03_HUMAN	P27361	MAPK3	-0.72	12.97	4.1e-02
CADH1	ab1340	CADH1_HUMAN	P12830	CDH1	-0.73	11.74	3.2e-04
LYAM2	ab1999	LYAM2_HUMAN	P16581	SELE	-0.73	10.95	5.4e-03
LEUK	ab1435	LEUK_HUMAN	P16150	SPN	-0.75	11.43	2.3e-04
ICOS	ab2742	ICOS_HUMAN	Q9Y6W8	ICOS	-0.75	13.89	1.2e-02
CXCR5	ab1059	CXCR5_HUMAN	P32302	CXCR5	-0.77	12.67	2.0e-03
IL12B	ab1666	IL12B_HUMAN	P29460	IL12B	-0.80	11.24	5.5e-03
ICAM3	ab1450	ICAM3_HUMAN	P32942	ICAM3	-0.80	11.16	6.4e-03
EGF	ab1160	EGF_HUMAN	P01133	EGF	-0.81	13.42	5.7e-05
BAX	ab0449	BAX_HUMAN	Q07812	BAX	-0.81	12.24	6.5e-04
LYAM2	ab1082	LYAM2_HUMAN	P16581	SELE	-0.82	11.12	8.8e-05
CNN2	ab1238	CNN2_HUMAN	Q99439	CNN2	-0.82	11.61	7.2e-03
INS	ab2773	INS_HUMAN	P01308	INS	-0.85	11.08	1.2e-02
CD47	ab1448	CD47_HUMAN	Q08722	CD47	-0.86	11.26	2.9e-03
FCERB	ab0195	FCERB_HUMAN	Q01362	MS4A2	-0.87	11.67	3.8e-02
2A5D	ab1225	2A5D_HUMAN	Q14738	PPP2R5D	-0.88	9.79	2.9e-02
LUM	ab2814	LUM_HUMAN	P51884	LUM	-0.89	12.58	8.3e-05
BMF	ab1040	BMF_HUMAN	Q96LC9	BMF	-0.90	11.62	2.2e-03
ONCM	ab1885	ONCM_HUMAN	P13725	OSM	-0.90	11.02	3.5e-02
FURIN	ab1740	FURIN_HUMAN	P09958	FURIN	-0.91	9.17	2.1e-02
RASK	ab1140	RASK_HUMAN	P01116	KRAS	-0.92	9.92	2.9e-02

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Table 16 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
A1AT	ab2327	A1AT_HUMAN	P01009	SERPINA1	-0.93	9.37	3.7e-02
CEAM5,8	ab1634		P06731	CEACAM5	-0.94	13.41	2.2e-03
IL17	ab2717	IL17_HUMAN	Q16552	IL17A	-0.95	12.67	6.0e-06
MTOR	ab1153	MTOR_HUMAN	P42345	MTOR	-0.95	10.63	2.7e-02
SLAF8	ab2129	SLAF8_HUMAN	Q9P0V8	SLAMF8	-0.95	10.30	3.1e-02
B2MG	ab1014	B2MG_HUMAN	P61769	B2M	-0.96	10.52	9.4e-03
GPC3	ab2708	GPC3_HUMAN	P51654	GPC3	-0.98	10.70	2.9e-03
IL2	ab1115	IL2_HUMAN	P60568	IL2	-0.98	10.67	4.4e-03
FAF1	ab1248	FAF1_HUMAN	Q9UNN5	FAF1	-1.00	11.24	3.1e-03
IL1A	ab2263	IL1A_HUMAN	P01583	IL1A	-1.02	13.51	1.1e-04
NCAM1	ab2478	NCAM1_HUMAN	P13591	NCAM1	-1.05	10.92	4.0e-08
GSTP1	ab1091	GSTP1_HUMAN	P09211	GSTP1	-1.06	11.57	2.0e-02
CATH	ab2698	CATH_HUMAN	P09668	CTSH	-1.07	12.01	2.9e-02
PRDX2	ab2795	PRDX2_HUMAN	P32119	PRDX2	-1.08	12.43	1.1e-08
NEK2	ab1069	NEK2_HUMAN	P51955	NEK2	-1.08	9.96	7.2e-03
PD1L1	ab1823	PD1L1_HUMAN	Q9NZQ7	CD274	-1.11	10.48	3.4e-02
CDN1A	ab1043	CDN1A_HUMAN	P38936	CDKN1A	-1.13	12.51	3.9e-04
PTEN	ab0454	PTEN_HUMAN	P60484	PTEN	-1.14	10.45	3.5e-03
ACTB	ab1343	ACTB_HUMAN	P60709	ACTB	-1.14	12.17	1.0e-02
CXL16	ab1167	CXL16_HUMAN	Q9H2A7	CXCL16	-1.14	11.18	3.1e-02
STAT3	ab1042	STAT3_HUMAN	P40763	STAT3	-1.15	12.14	1.1e-04
CCL27	ab2154	CCL27_HUMAN	Q9Y4X3	CCL27	-1.15	11.95	2.2e-03
HMGB1	ab1215	HMGB1_HUMAN	P09429	HMGB1	-1.16	11.54	1.6e-02
BMP7	ab1772	BMP7_HUMAN	P18075	BMP7	-1.16	9.81	4.0e-02
GDNF	ab1777	GDNF_HUMAN	P39905	GDNF	-1.17	11.91	3.7e-02
BDNF	ab2677	BDNF_HUMAN	P23560	BDNF	-1.19	12.09	1.1e-03
MYBA	ab0979	MYBA_HUMAN	P10243	MYBL1	-1.19	11.25	5.8e-03
ITA6	ab1566	ITA6_HUMAN	P23229	ITGA6	-1.22	10.97	2.8e-03
RLA0	ab0585	RLA0_HUMAN	P05388	RPLP0	-1.24	10.33	1.2e-03
NT-ProANP	ab2799		P01160	NPPA	-1.25	10.18	8.3e-03
TR10D	ab1794	TR10D_HUMAN	Q9UBN6	TNFRSF10D	-1.26	10.45	2.9e-02
S100P	ab1062	S100P_HUMAN	P25815	S100P	-1.27	12.26	4.7e-05
CD14	ab1627	CD14_HUMAN	P08571	CD14	-1.29	12.49	1.1e-06
IL2	ab1901	IL2_HUMAN	P60568	IL2	-1.30	11.08	6.0e-06
PD1L1	ab0983	PD1L1_HUMAN	Q9NZQ7	CD274	-1.31	10.05	2.0e-03
TOP2A	ab1066	TOP2A_HUMAN	P11388	TOP2A	-1.31	10.83	2.7e-03
IL1A	ab1689	IL1A_HUMAN	P01583	IL1A	-1.32	10.64	2.8e-02
ANDR	ab1336	ANDR_HUMAN	P10275	AR	-1.33	13.53	1.2e-02
CD36	ab2783	CD36_HUMAN	P16671	CD36	-1.33	10.72	2.7e-02
TGM2	ab1344	TGM2_HUMAN	P21980	TGM2	-1.34	11.30	3.2e-04
MP2K4	ab1265	MP2K4_HUMAN	P45985	MAP2K4	-1.34	11.66	2.5e-03
SPRC	ab2197	SPRC_HUMAN	P09486	SPARC	-1.38	12.18	1.1e-03
AKT3	ab1106	AKT3_HUMAN	Q9Y243	AKT3	-1.44	12.40	1.6e-04
ICAM5	ab2723	ICAM5_HUMAN	Q9UMF0	ICAM5	-1.44	12.55	8.6e-03
BCAM	ab2290	BCAM_HUMAN	P50895	BCAM	-1.51	11.51	2.5e-05
CADH1	ab1182	CADH1_HUMAN	P12830	CDH1	-1.53	11.00	9.8e-06
CORIN	ab1954	CORIN_HUMAN	Q9Y5Q5	CORIN	-1.53	11.14	4.8e-03
RS19	ab1287	RS19_HUMAN	P39019	RPS19	-1.60	8.44	1.8e-02
DKK4	ab1942	DKK4_HUMAN	Q9UBT3	DKK4	-1.64	10.86	1.0e-04
IL34_MOUSE	ab1224	IL34_MOUSE	Q8R1R4	Il34	-1.65	10.21	1.3e-04
IL18	ab1734	IL18_HUMAN	Q14116	IL18	-1.68	9.70	1.2e-02
Fc fusion with TNR21	ab0517				-1.69	12.19	4.0e-08
TR13B	ab2250	TR13B_HUMAN	O14836	TNFRSF13B	-1.73	11.07	8.6e-03
ZKSC1	ab1188	ZKSC1_HUMAN	P17029	ZKSCAN1	-1.75	9.01	3.4e-02
FABP5	ab1246	FABP5_HUMAN	Q01469	FABP5	-1.78	10.84	9.8e-05
PTEN	ab1024	PTEN_HUMAN	P60484	PTEN	-1.83	10.70	4.7e-03
PD1L1	ab0973	PD1L1_HUMAN	Q9NZQ7	CD274	-1.84	10.21	3.6e-04
I13R1	ab1970	I13R1_HUMAN	P78552	IL13RA1	-1.84	10.53	4.2e-03
I22R2	ab1326	I22R2_HUMAN	Q969J5	IL22RA2	-1.85	10.58	9.6e-08
REL1	ab2238	REL1_HUMAN	P04808	RLN1	-1.88	8.40	1.8e-02
UROM	ab2694	UROM_HUMAN	P07911	UMOD	-1.89	10.70	6.0e-06

Continued on next page

Table 16 – continued from previous page

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
RL7	ab1284	RL7_HUMAN	P18124	RPL7	-1.89	11.80	3.0e-05
RAG2	ab1047	RAG2_HUMAN	P55895	RAG2	-1.94	10.89	6.4e-09
IGF1R	ab0481	IGF1R_HUMAN	P08069	IGF1R	-2.02	9.29	1.5e-02
EGLN	ab1746	EGLN_HUMAN	P17813	ENG	-2.09	10.25	7.4e-03
ESR1	ab1339	ESR1_HUMAN	P03372	ESR1	-2.17	12.84	1.3e-04
VIME	ab1164	VIME_HUMAN	P08670	VIM	-2.86	11.16	2.4e-13

4.2.7 PAT Day10: Treated vs Untreated

Between PAT-treated Day10 and PAT-untreated Day10, one antibody recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 31) and listed in Table 17. Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 32.

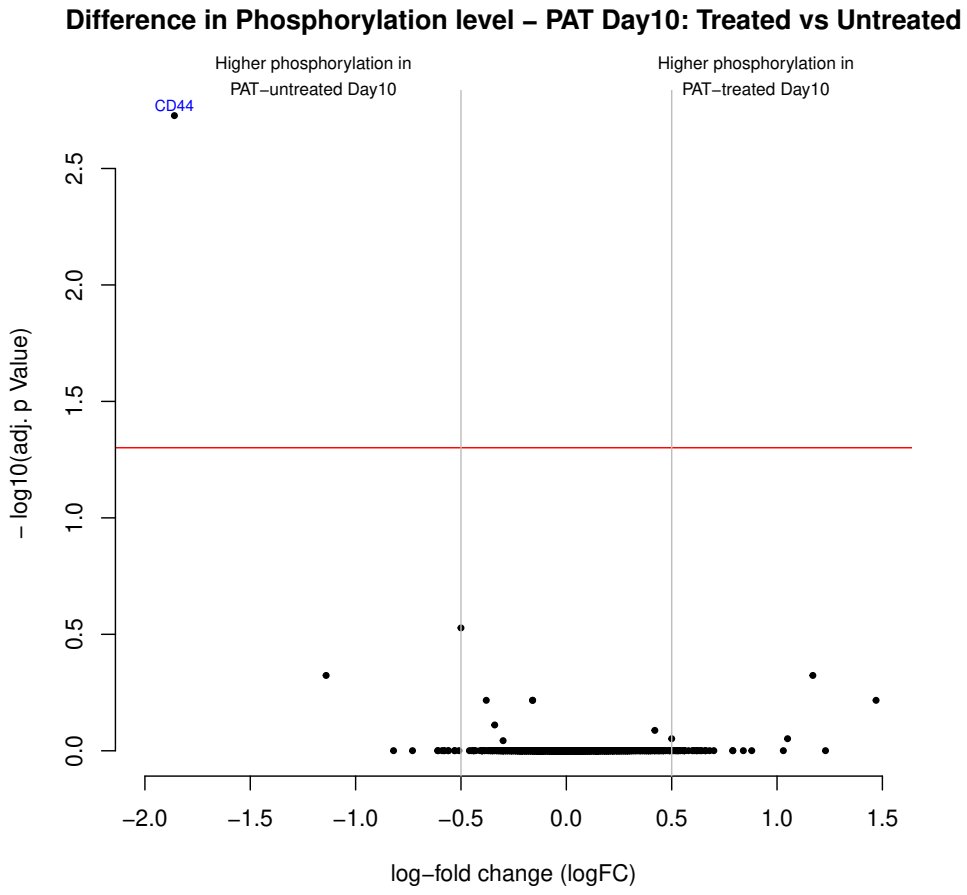

Figure 31: Several proteins exhibited distinct phosphorylation variations in PAT-treated Day10 and PAT-untreated Day10. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-treated Day10, proteins with a negative value in PAT-untreated Day10.

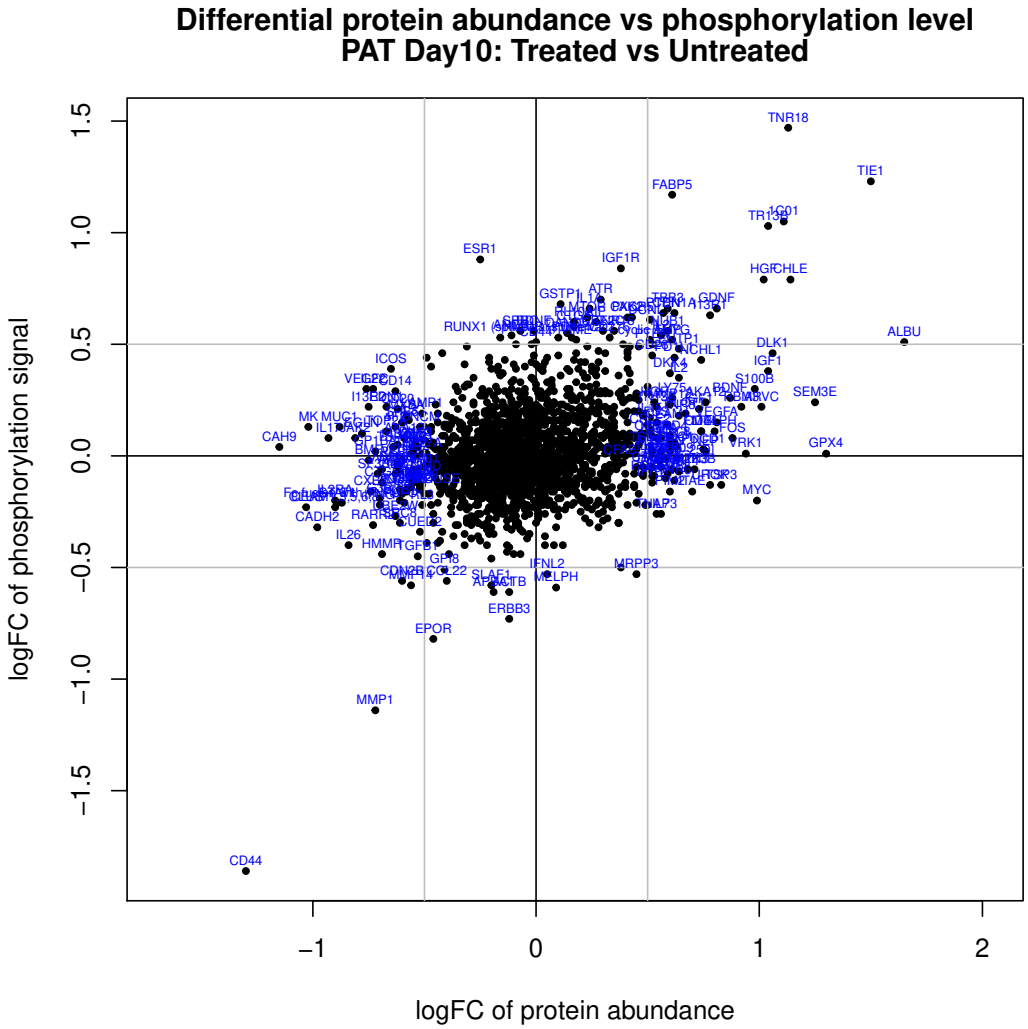

Figure 32: Overview of differences in protein abundance as well as phosphorylation levels between PAT-treated Day10 and PAT-untreated Day10. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-treated Day10, while proteins with a negative logFC protein were higher abundant in PAT-untreated Day10. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-treated Day10. For proteins with a negative logFC phos higher phosphorylation signals were obtained in PAT-untreated Day10.

Table 17: Proteins with differential phosphorylation in PAT-treated Day10 and PAT-untreated Day10. Proteins with a positive logFC value were more phosphorylated in PAT-treated Day10, proteins with a negative value in PAT-untreated Day10. In addition, p values adjusted for multiple testing are listed. The Uniprot-Identifier links to the Uniprot-Entry.

Protein	AntibodyID	Uniprot-Entry-Name	Uniprot-Entry	HGNC	logFC	AveExp	adj.P.Val
CD44	ab1437	CD44_HUMAN	P16070	CD44	-1.86	11.70	1.9e-03

4.2.8 PAT Day20: Treated vs Untreated

Between PAT-treated Day20 and PAT-untreated Day20, no antibody recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 33). Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 34.

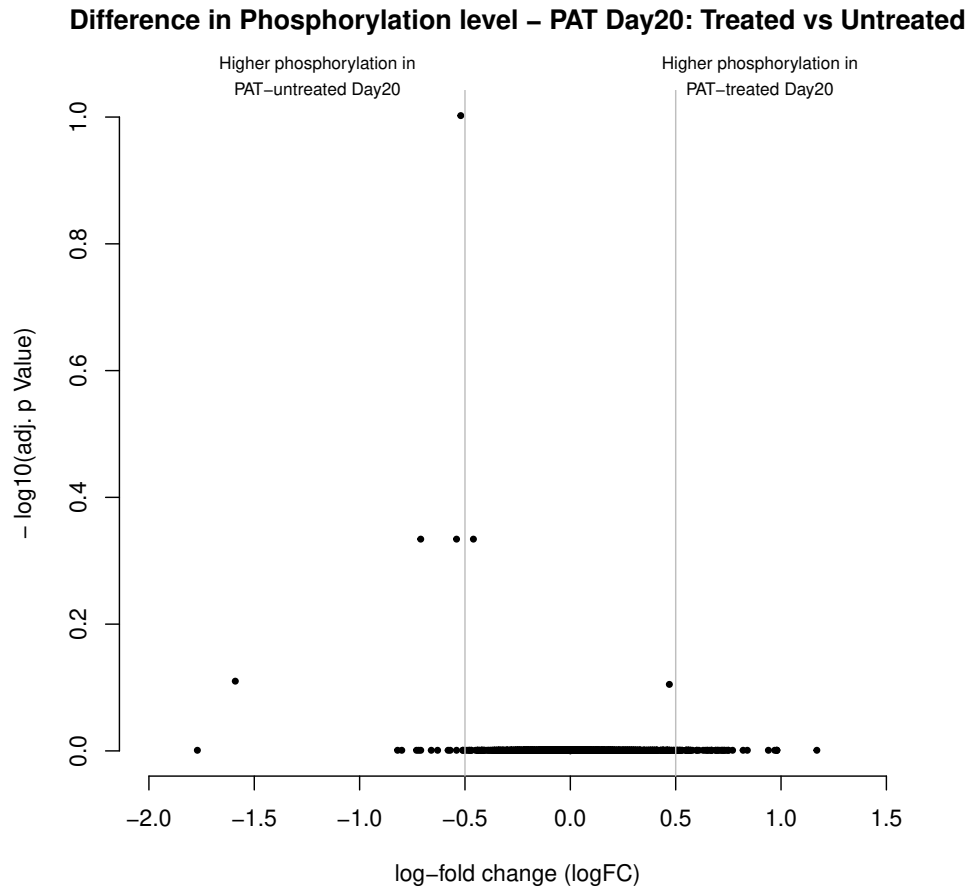

Figure 33: Several proteins exhibited distinct phosphorylation variations in PAT-treated Day20 and PAT-untreated Day20. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-treated Day20, proteins with a negative value in PAT-untreated Day20.

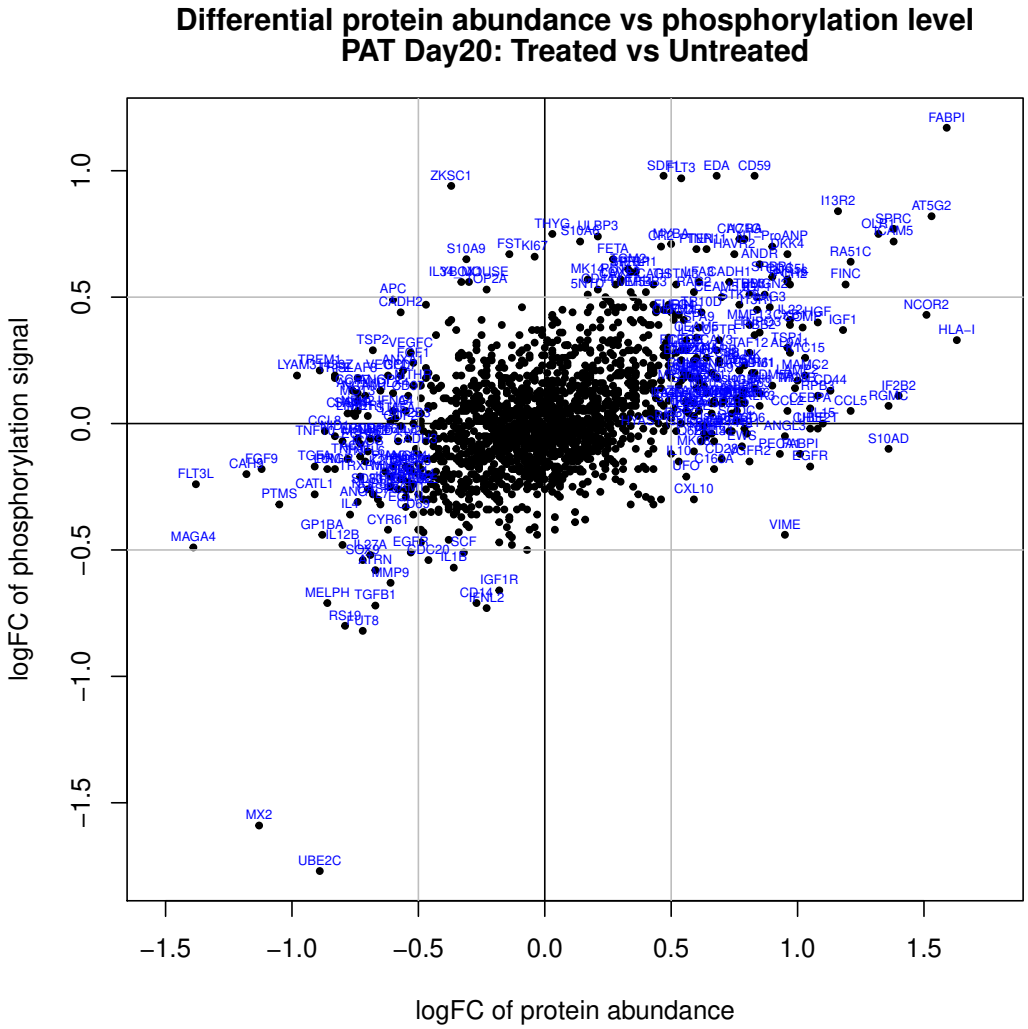

Figure 34: Overview of differences in protein abundance as well as phosphorylation levels between PAT-treated Day20 and PAT-untreated Day20. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-treated Day20, while proteins with a negative logFC protein were higher abundant in PAT-untreated Day20. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-treated Day20. For proteins with a negative logFC phos higher phosphorylation signals were obtained in PAT-untreated Day20.

4.2.9 PAT Day30: Treated vs Untreated

Between PAT-treated Day30 and PAT-untreated Day30, no antibody recorded a differential protein phosphorylation. The results of the statistical analysis are summarised in the volcano plot (Figure 35). Furthermore, an overview of proteins with differential abundance as well as phosphorylation levels is presented in Figure 36.

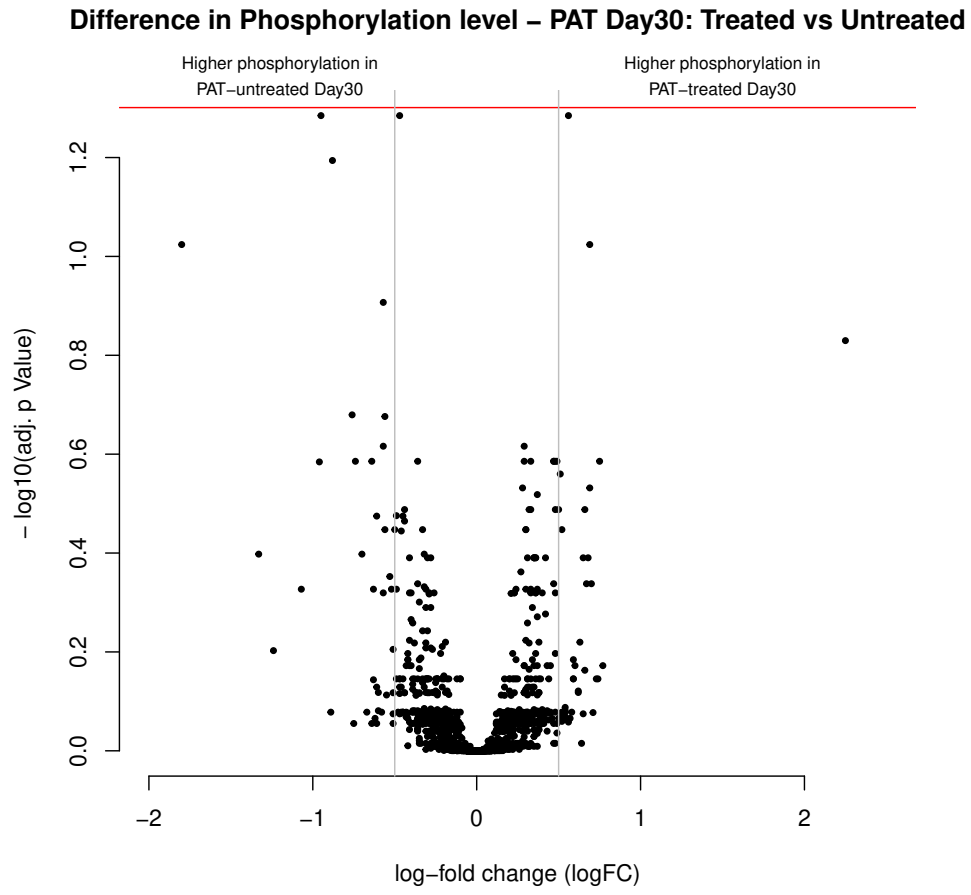

Figure 35: Several proteins exhibited distinct phosphorylation variations in PAT-treated Day30 and PAT-untreated Day30. The volcano plot visualises the p values (adjusted for multiple testing) and corresponding log-fold changes (logFC). A significance level of adj. p Value = 0.05 is indicated as a horizontal red line. The logFC cutoffs are indicated as vertical lines. Proteins with a positive logFC were more phosphorylated in PAT-treated Day30, proteins with a negative value in PAT-untreated Day30.

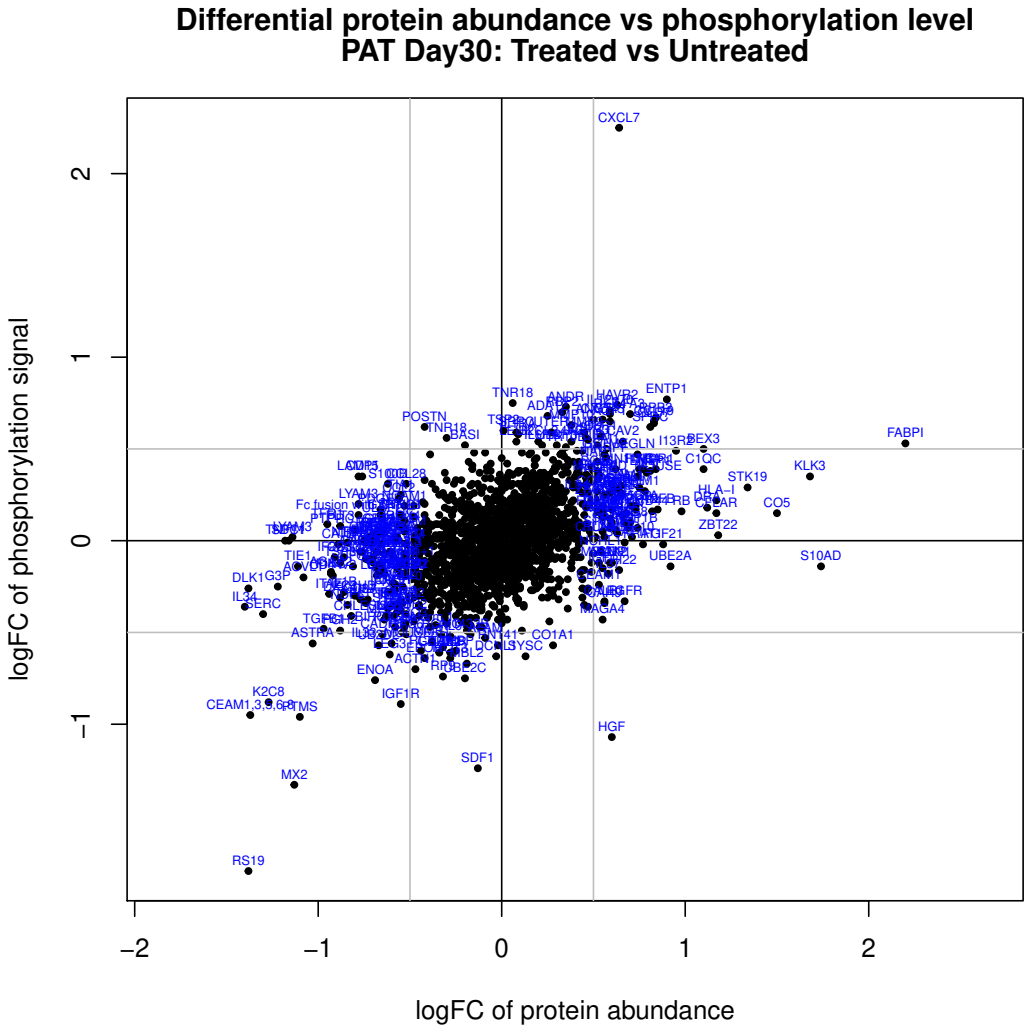

Figure 36: Overview of differences in protein abundance as well as phosphorylation levels between PAT-treated Day30 and PAT-untreated Day30. Proteins with a positive logFC protein (x-axis) were higher abundant in PAT-treated Day30, while proteins with a negative logFC protein were higher abundant in PAT-untreated Day30. For proteins with a postive logFC phos (y-axis) higher phosphorylation signals were obtained in PAT-treated Day30. For proteins with a negative logFC phos higher phosphorylation signals were obtained in PAT-untreated Day30.

4.3 Individual protein and phosphorylation levels

For some differential proteins relative protein and phosphorylation levels are presented in Figure 37. To improve the visibility of the selected comparison, only samples belonging to the two samples groups chosen are coloured. All the other samples are in grey. These graphs are only a selection and for example purposes. Graphs for all differentially phosphorylated proteins with all samples coloured according to their respective groups have been provided with the report in a separate file.

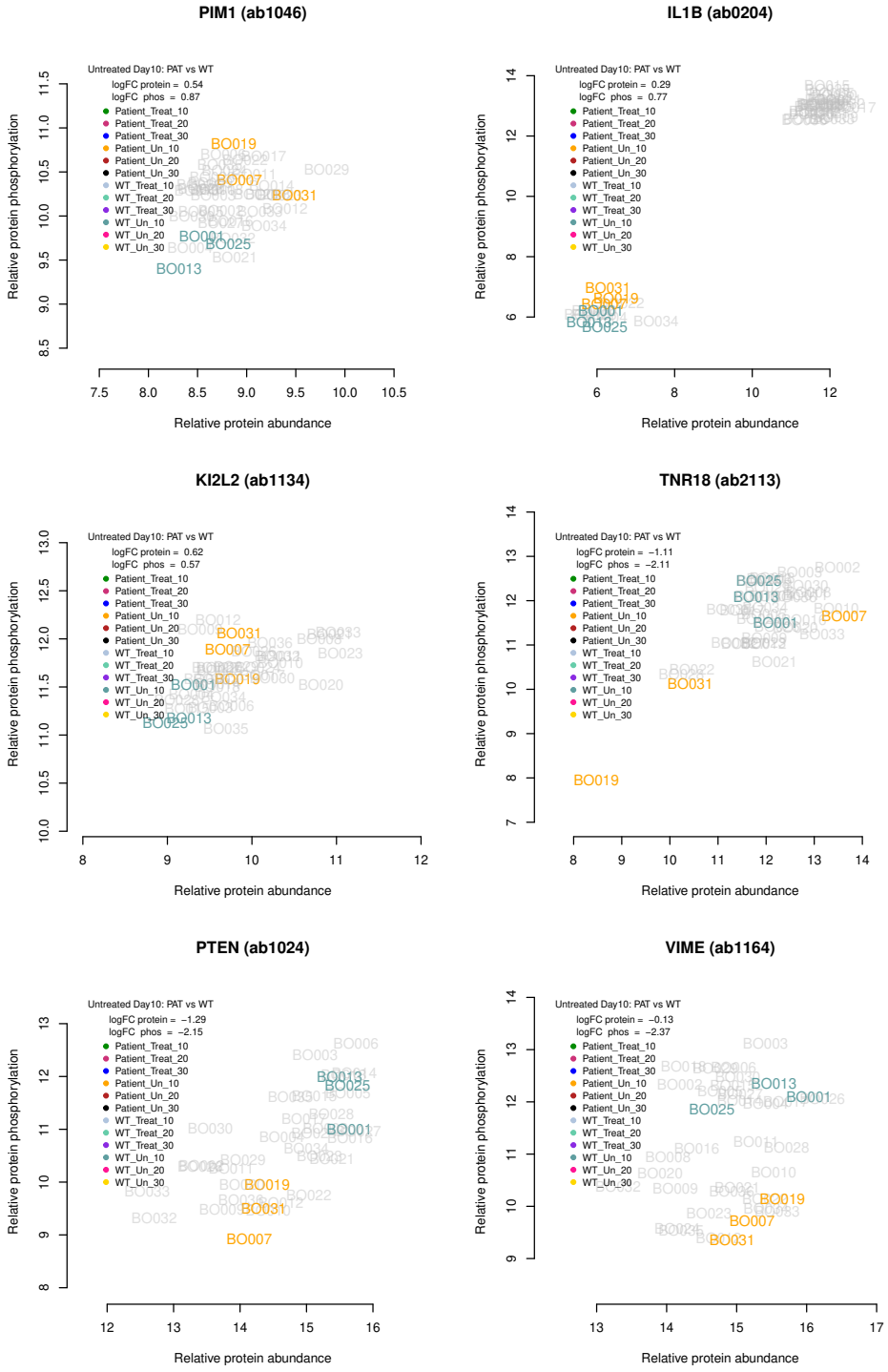

Figure 37: Individual array values for a set of differential proteins. Each sample is measured by four replicate spots per array.

5 Differential protein classification

5.1 Differentially abundant proteins in Untreated Day10: PAT vs WT

The following tables display information about:

- selected KEGG pathways (Table 18)
- selected Reactome pathways (Table 19)

related to differential proteins within the comparison of Untreated Day10: PAT vs WT samples identified in this study.

Table 18: Selected KEGG pathways related to proteins with differential abundance in Untreated Day10: PAT vs WT.The first dot shows the change on protein level, the second on phosphorylation level. Green indicates a higher protein abundance in PAT-untreated Day10, red indicates a higher protein abundance in WT-untreated Day10. Blue indicates a higher phosphorylation abundance in PAT-untreated Day10, orange indicates a higher phosphorylation abundance in WT-untreated Day10. Black indicates no regulation. Yellow indicates higher abundance in PAT-untreated Day10 and WT-untreated Day10 for more than one antibody.

Pathway ID Pathway Description Potein Count	Proteins
hsa04060 Cytokine-cytokine receptor interaction 36	AMH ●● CCL16 ●● CCL17 ●● CCL2 ●● CCL22 ●● CCL28 ●● CRLF2 ●● CSF2 ●● CSF2RB ●● CXCR5 ●● IL10 ●● IL12A ●● IL12B ●● IL15 ●● IL17A ●● IL17C ●● IL18 ●● IL1A ●● IL1B ●● IL2 ●● IL20 ●● IL22RA2 ●● IL2RB ●● IL6 ●● IL6R ●● IL9 ●● LEP ●● LIFR ●● OSM ●● TNFRSF10B ●● TNFRSF14 ●● TNFRSF18 ●● TNFRSF1A ●● TNFRSF8 ●● TNFSF13B ●● VEGFA ●●
hsa05200 Pathways in cancer 28	BAX ●● BCL2 ●● CDH1 ●● CDK4 ●● CDKN2B ●● CSF2RB ●● EP300 ●● ESR1 ●● FGF1 ●● FGF23 ●● IGF1R ●● IL12A ●● IL12B ●● IL15 ●● IL2 ●● IL2RB ●● IL6 ●● IL6R ●● JAK2 ●● JAK3 ●● JUN ●● MLH1 ●● MMP1 ●● PIM1 ●● PIM2 ●● PTEN ●● STAT1 ●● VEGFA ●●
hsa04630 Jak-STAT signaling pathway 23	BCL2 ●● CRLF2 ●● CSF2 ●● CSF2RB ●● EP300 ●● IL10 ●● IL12A ●● IL12B ●● IL15 ●● IL2 ●● IL20 ●● IL22RA2 ●● IL2RB ●● IL6 ●● IL6R ●● IL9 ●● JAK2 ●● JAK3 ●● LEP ●● LIFR ●● OSM ●● PIM1 ●● STAT1 ●●
hsa04151 PI3K-Akt signaling pathway 21	BCL2 ●● BDNF ●● CDK4 ●● FGF1 ●● FGF23 ●● IGF1R ●● IL2 ●● IL2RB ●● IL6 ●● IL6R ●● ITGA5 ●● JAK2 ●● JAK3 ●● NTF4 ●● OSM ●● PTEN ●● THBS1 ●● THBS2 ●● THBS3 ●● VEGFA ●● YWHAZ ●●
hsa04640 Hematopoietic cell lineage 14	CD14 ●● CD33 ●● CD55 ●● CSF2 ●● GYPA ●● HLA-DRA ●● IL1A ●● IL1B ●● IL6 ●● IL6R ●● ITGA5 ●● MME ●● MS4A1 ●● TFRC ●●
hsa04933 AGE-RAGE signaling pathway in diabetic complications 13	BAX ●● BCL2 ●● CCL2 ●● CDK4 ●● ICAM1 ●● IL1A ●● IL1B ●● IL6 ●● JAK2 ●● JUN ●● PIM1 ●● STAT1 ●● VEGFA ●●
hsa04514 Cell adhesion molecules (CAMs) 13	CD274 ●● CD276 ●● CD86 ●● CDH1 ●● CLDN10 ●● HLA-C ●● HLA-DRA ●● ICAM1 ●● ICOS ●● PDCD1 ●● SDC1 ●● SELP ●● VTCN1 ●●
hsa04010 MAPK signaling pathway 13	BDNF ●● CD14 ●● FGF1 ●● FGF23 ●● HSPB1 ●● IGF1R ●● IL1A ●● IL1B ●● JUN ●● NTF4 ●● RPS6KA2 ●● TNFRSF1A ●● VEGFA ●●
hsa04659 Th17 cell differentiation 11	HLA-DRA ●● IL17A ●● IL1B ●● IL2 ●● IL2RB ●● IL6 ●● IL6R ●● JAK2 ●● JAK3 ●● JUN ●● STAT1 ●●
hsa04217 Necroptosis 11	BAX ●● BCL2 ●● IL1A ●● IL1B ●● JAK2 ●● JAK3 ●● PGAM5 ●● PPIA ●● STAT1 ●● TNFRSF10B ●● TNFRSF1A ●●
hsa04668 TNF signaling pathway 10	CASP10 ●● CCL2 ●● CSF2 ●● ICAM1 ●● IL15 ●● IL1B ●● IL6 ●● JUN ●● PGAM5 ●● TNFRSF1A ●●

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Table 18 – continued from previous page

Pathway ID Pathway Description Potein Count	Proteins
hsa04145 Phagosome 10	CD14 ●● CTSL ●● HLA-C ●● HLA-DRA ●● ITGA5 ●● MPO ●● TFRC ●● THBS1 ●● THBS2 ●● THBS3 ●●
hsa01521 EGFR tyrosine kinase inhibitor resistance 9	BAX ●● BCL2 ●● GAS6 ●● IGF1R ●● IL6 ●● IL6R ●● JAK2 ●● PTEN ●● VEGFA ●●
hsa04658 Th1 and Th2 cell differentiation 9	HLA-DRA ●● IL12A ●● IL12B ●● IL2 ●● IL2RB ●● JAK2 ●● JAK3 ●● JUN ●● STAT1 ●●
hsa04657 IL-17 signaling pathway 9	CCL17 ●● CCL2 ●● CSF2 ●● IL17A ●● IL17C ●● IL1B ●● IL6 ●● JUN ●● MMP1 ●●
hsa04066 HIF-1 signaling pathway 9	BCL2 ●● EP300 ●● IGF1R ●● IL6 ●● IL6R ●● PGK1 ●● TF ●● TFRC ●● VEGFA ●●
hsa04210 Apoptosis 9	BAX ●● BCL2 ●● CASP10 ●● CSF2RB ●● CTSL ●● EIF2S1 ●● JUN ●● TNFRSF10B ●● TNFRSF1A ●●
hsa04062 Chemokine signaling pathway 9	CCL16 ●● CCL17 ●● CCL2 ●● CCL22 ●● CCL28 ●● CXCR5 ●● JAK2 ●● JAK3 ●● STAT1 ●●
hsa04510 Focal adhesion 9	BCL2 ●● IGF1R ●● ITGA5 ●● JUN ●● PTEN ●● THBS1 ●● THBS2 ●● THBS3 ●● VEGFA ●●
hsa04620 Toll-like receptor signaling pathway 8	CD14 ●● CD86 ●● IL12A ●● IL12B ●● IL1B ●● IL6 ●● JUN ●● STAT1 ●●
hsa04218 Cellular senescence 8	CCNB1 ●● CDK4 ●● CDKN2B ●● GATA4 ●● HLA-C ●● IL1A ●● IL6 ●● PTEN ●●
hsa01522 Endocrine resistance 7	BAX ●● BCL2 ●● CDK4 ●● ESR1 ●● IGF1R ●● JUN ●● NCOR1 ●●
hsa04660 T cell receptor signaling pathway 7	CDK4 ●● CSF2 ●● ICOS ●● IL10 ●● IL2 ●● JUN ●● PDCD1 ●●

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Table 18 – continued from previous page

Pathway ID Pathway Description Potein Count	Proteins
hsa04722 Neurotrophin signaling pathway 7	BAX ●● BCL2 ●● BDNF ●● FRS2 ●● JUN ●● NTF4 ●● RPS6KA2 ●●
hsa04068 FoxO signaling pathway 7	CCNB1 ●● CDKN2B ●● EP300 ●● IGF1R ●● IL10 ●● IL6 ●● PTEN ●●
hsa04621 NOD-like receptor signaling pathway 7	BCL2 ●● CCL2 ●● IL18 ●● IL1B ●● IL6 ●● JUN ●● STAT1 ●●
hsa04015 Rap1 signaling pathway 7	CDH1 ●● FGF1 ●● FGF23 ●● IGF1R ●● MLLT4 ●● THBS1 ●● VEGFA ●●
hsa04014 Ras signaling pathway 7	BDNF ●● FGF1 ●● FGF23 ●● IGF1R ●● MLLT4 ●● NTF4 ●● VEGFA ●●
hsa04115 p53 signaling pathway 6	BAX ●● CCNB1 ●● CDK4 ●● PTEN ●● THBS1 ●● TNFRSF10B ●●
hsa04512 ECM-receptor interaction 6	CD47 ●● ITGA5 ●● SDC1 ●● THBS1 ●● THBS2 ●● THBS3 ●●
hsa04064 NF-kappa B signaling pathway 6	BCL2 ●● CD14 ●● ICAM1 ●● IL1B ●● TNFRSF1A ●● TNFSF13B ●●
hsa04110 Cell cycle 6	CCNB1 ●● CDK4 ●● CDKN2B ●● EP300 ●● PRKDC ●● YWHAZ ●●
hsa04530 Tight junction 6	ARHGEF2 ●● CDK4 ●● CLDN10 ●● GATA4 ●● JUN ●● MLLT4 ●●
hsa04024 cAMP signaling pathway 6	AMH ●● BDNF ●● EP300 ●● JUN ●● MLLT4 ●● SOX9 ●●
hsa04810 Regulation of actin cytoskeleton 6	CD14 ●● FGF1 ●● FGF23 ●● GSN ●● ITGA5 ●● ITGAE ●●

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Pathway ID Pathway Description Potein Count	Proteins
hsa04919 Thyroid hormone signaling pathway 5	EP300 ●● ESR1 ●● GATA4 ●● NCOR1 ●● STAT1 ●●
hsa04550 Signaling pathways regulating pluripotency of stem cells 5	IGF1R ●● JAK2 ●● JAK3 ●● LIFR ●● PCGF2 ●●
hsa04390 Hippo signaling pathway 5	AMH ●● CDH1 ●● CTGF ●● FGF1 ●● YWHAZ ●●
hsa04216 Ferroptosis 4	GPX4 ●● MAP1LC3B ●● TF ●● TFRC ●●
hsa04612 Antigen processing and presentation 4	B2M ●● CTSL ●● HLA-C ●● HLA-DRA ●●
hsa04920 Adipocytokine signaling pathway 4	AGRP ●● JAK2 ●● LEP ●● TNFRSF1A ●●
hsa04520 Adherens junction 4	CDH1 ●● EP300 ●● IGF1R ●● MLLT4 ●●
hsa04610 Complement and coagulation cascades 4	CD46 ●● CD55 ●● PLAUR ●● TFPI ●●
hsa04350 TGF-beta signaling pathway 4	AMH ●● CDKN2B ●● EP300 ●● THBS1 ●●
hsa01523 Antifolate resistance 3	IL1B ●● IL6 ●● MTHFR ●●
hsa04961 Endocrine and other factor-regulated calcium reabsorption 3	CALB1 ●● ESR1 ●● VDR ●●

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Table 19: Selected Reactome pathways related to proteins with differential abundance in Untreated Day10: PAT vs WT.The first dot shows the change on protein level, the second on phosphorylation level. Green indicates a higher protein abundance in PAT-untreated Day10, red indicates a higher protein abundance in WT-untreated Day10. Blue indicates a higher phosphorylation abundance in PAT-untreated Day10, orange indicates a higher phosphorylation abundance in WT-untreated Day10. Black indicates no regulation. Yellow indicates higher abundance in PAT-untreated Day10 and WT-untreated Day10 for more than one antibody.

Pathway ID Pathway Description Potein Count	Proteins
HSA-449147 Signaling by Interleukins 43	BCL2 ●● CCL2 ●● CCL22 ●● CD86 ●● CRLF2 ●● CSF2 ●● CSF2RB ●● ICAM1 ●● IL10 ●● IL12A ●● IL12B ●● IL15 ●● IL16 ●● IL17A ●● IL17C ●● IL18 ●● IL1A ●● IL1B ●● IL2 ●● IL20 ●● IL22RA2 ●● IL2RB ●● IL6 ●● IL6R ●● IL9 ●● JAK2 ●● JAK3 ●● JUN ●● LIFR ●● MIF ●● MMP1 ●● MUC1 ●● OSM ●● PIM1 ●● PPIA ●● PRTN3 ●● RPS6KA2 ●● SDC1 ●● STAT1 ●● TNFRSF1A ●● VEGFA ●● VIM ●● YWHAZ ●●
HSA-392499 Metabolism of proteins 38	AURKB ●● B2M ●● CALB1 ●● CCL2 ●● CD55 ●● CEACAM5 ●● CSF2RB ●● EIF2S1 ●● EP300 ●● ESR1 ●● FGF23 ●● GAS6 ●● GATA4 ●● GSN ●● IGFBP1 ●● IL6 ●● LEP ●● MME ●● MMP1 ●● MUC1 ●● NUP88 ●● OTUB1 ●● PCGF2 ●● PCSK9 ●● PDIA6 ●● PLAUR ●● PRKDC ●● PTEN ●● REN ●● SEC16A ●● SORL1 ●● TF ●● THBS1 ●● THBS2 ●● TMED2 ●● TOP1 ●● UBE2T ●● VDR ●●
HSA-74160 Gene expression (Transcription) 33	AURKB ●● BAX ●● BDNF ●● CASP10 ●● CCNB1 ●● CDK4 ●● CDKN2B ●● CSF2 ●● CTGF ●● CTSL ●● EP300 ●● ESR1 ●● EZH2 ●● GATA4 ●● IL2 ●● ITGA5 ●● JUN ●● LIFR ●● MLH1 ●● NCOR1 ●● NUP88 ●● PCGF2 ●● PRDX2 ●● PTEN ●● SOX9 ●● STAT1 ●● THBS1 ●● TNFRSF10B ●● TNFRSF18 ●● VDR ●● VEGFA ●● YWHAZ ●● ZNF658 ●●
HSA-73857 RNA Polymerase II Transcription 32	AURKB ●● BAX ●● BDNF ●● CASP10 ●● CCNB1 ●● CDK4 ●● CDKN2B ●● CSF2 ●● CTGF ●● CTSL ●● EP300 ●● ESR1 ●● EZH2 ●● GATA4 ●● IL2 ●● ITGA5 ●● JUN ●● LIFR ●● MLH1 ●● NCOR1 ●● PCGF2 ●● PRDX2 ●● PTEN ●● SOX9 ●● STAT1 ●● THBS1 ●● TNFRSF10B ●● TNFRSF18 ●● VDR ●● VEGFA ●● YWHAZ ●● ZNF658 ●●
HSA-597592 Post-translational protein modification 26	AURKB ●● CD55 ●● CEACAM5 ●● EP300 ●● ESR1 ●● FGF23 ●● GAS6 ●● IGFBP1 ●● IL6 ●● MUC1 ●● NUP88 ●● OTUB1 ●● PCGF2 ●● PCSK9 ●● PDIA6 ●● PLAUR ●● PRKDC ●● PTEN ●● SEC16A ●● TF ●● THBS1 ●● THBS2 ●● TMED2 ●● TOP1 ●● UBE2T ●● VDR ●●
HSA-109582 Hemostasis 24	BSG ●● CD47 ●● CEACAM5 ●● CEACAM8 ●● GAS6 ●● GATA4 ●● GYPA ●● IRF2 ●● ITGA5 ●● JAK2 ●● LGALS3BP ●● MIF ●● MMP1 ●● PLAUR ●● PPIA ●● PRTN3 ●● SDC1 ●● SELP ●● TF ●● TFPI ●● THBS1 ●● TNFRSF10B ●● VEGFA ●● YWHAZ ●●
HSA-6785807 Interleukin-4 and Interleukin-13 signaling 22	BCL2 ●● CCL2 ●● CCL22 ●● ICAM1 ●● IL10 ●● IL12A ●● IL12B ●● IL17A ●● IL18 ●● IL1A ●● IL1B ●● IL6 ●● IL6R ●● JAK2 ●● JAK3 ●● MMP1 ●● MUC1 ●● OSM ●● PIM1 ●● STAT1 ●● VEGFA ●● VIM ●●
HSA-9006934 Signaling by Receptor Tyrosine Kinases 20	BAX ●● BDNF ●● ESR1 ●● FGF1 ●● FGF23 ●● FRS2 ●● HSPB1 ●● IGF1R ●● JAK2 ●● NCOR1 ●● NRP1 ●● NTF4 ●● PTPRS ●● RPS6KA2 ●● STAT1 ●● THBS1 ●● THBS2 ●● THBS3 ●● TIA1 ●● VEGFA ●●
HSA-6798695 Neutrophil degranulation 18	B2M ●● CD14 ●● CD33 ●● CD47 ●● CD55 ●● CEACAM8 ●● FABP5 ●● GRN ●● GSN ●● GUSB ●● HLA-C ●● IGF2R ●● MIF ●● MME ●● MPO ●● PLAUR ●● PPIA ●● PRTN3 ●●
HSA-1280218 Adaptive Immune System 16	B2M ●● CD14 ●● CD274 ●● CD33 ●● CD81 ●● CD86 ●● CDH1 ●● CTSL ●● HLA-C ●● HLA-DRA ●● ICAM1 ●● PDCD1 ●● PPIA ●● PTEN ●● TNFRSF14 ●● YWHAZ ●●
HSA-5683057 MAPK family signaling cascades 15	CSF2 ●● CSF2RB ●● FGF1 ●● FGF23 ●● FRS2 ●● HSPB1 ●● IL2 ●● IL2RB ●● IL6 ●● IL6R ●● JAK2 ●● JAK3 ●● JUN ●● PHB ●● XPO1 ●●

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Pathway ID Pathway Description Potein Count	Proteins
HSA-1474244 Extracellular matrix organization 15	ADAM9 ●● BSG ●● CD47 ●● CDH1 ●● CEACAM8 ●● COL18A1 ●● CTSL ●● ICAM1 ●● ITGA5 ●● ITGAE ●● MMP1 ●● MMP7 ●● PTPRS ●● SDC1 ●● THBS1 ●●
HSA-6783783 Interleukin-10 signaling 13	CCL2 ●● CCL22 ●● CD86 ●● CSF2 ●● ICAM1 ●● IL10 ●● IL12A ●● IL12B ●● IL18 ●● IL1A ●● IL1B ●● IL6 ●● TNFRSF1A ●●
HSA-202733 Cell surface interactions at the vascular wall 13	BSG ●● CD47 ●● CEACAM5 ●● CEACAM8 ●● GAS6 ●● GYPA ●● ITGA5 ●● MIF ●● MMP1 ●● PPIA ●● SDC1 ●● SELP ●● TNFRSF10B ●●
HSA-5684996 MAPK1/MAPK3 signaling 12	CSF2 ●● CSF2RB ●● FGF1 ●● FGF23 ●● FRS2 ●● IL2 ●● IL2RB ●● IL6 ●● IL6R ●● JAK2 ●● JAK3 ●● PHB ●●
HSA-5663202 Diseases of signal transduction 12	CD86 ●● DKK1 ●● EP300 ●● ESR1 ●● FGF1 ●● FGF23 ●● FRS2 ●● JAK2 ●● NCOR1 ●● PHB ●● PTEN ●● STAT1 ●●
HSA-8953897 Cellular responses to external stimuli 12	CDK4 ●● CDKN2B ●● EP300 ●● EZH2 ●● IL1A ●● IL6 ●● JUN ●● MAP1LC3B ●● NUP88 ●● PRDX2 ●● RPS6KA2 ●● VEGFA ●●
HSA-3700989 Transcriptional Regulation by TP53 11	AURKB ●● BAX ●● CASP10 ●● CCNB1 ●● EP300 ●● JUN ●● MLH1 ●● PRDX2 ●● PTEN ●● TNFRSF10B ●● YWHAZ ●●
HSA-2262752 Cellular responses to stress 11	CDK4 ●● CDKN2B ●● EP300 ●● EZH2 ●● IL1A ●● IL6 ●● JUN ●● NUP88 ●● PRDX2 ●● RPS6KA2 ●● VEGFA ●●
HSA-913531 Interferon Signaling 10	B2M ●● HLA-C ●● HLA-DRA ●● ICAM1 ●● IFI6 ●● IFIT2 ●● IRF2 ●● JAK2 ●● NUP88 ●● STAT1 ●●
HSA-5673001 RAF/MAP kinase cascade 10	CSF2 ●● CSF2RB ●● FGF1 ●● FGF23 ●● FRS2 ●● IL2 ●● IL2RB ●● JAK2 ●● JAK3 ●● PHB ●●
HSA-451927 Interleukin-2 family signaling 9	CSF2 ●● CSF2RB ●● IL15 ●● IL2 ●● IL2RB ●● IL9 ●● JAK2 ●● JAK3 ●● STAT1 ●●
HSA-216083 Integrin cell surface interactions 8	BSG ●● CD47 ●● CDH1 ●● COL18A1 ●● ICAM1 ●● ITGA5 ●● ITGAE ●● THBS1 ●●

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Pathway ID Pathway Description Potein Count	Proteins
HSA-381426 Regulation of Insulin-like Growth Factor (IGF) transport and uptake by Insulin-like Growth Factor Binding Proteins (IGFBPs) 8	FGF23 GAS6 IGFBP1 IL6 MMP1 PCSK9 PDIA6 TF
HSA-109581 Apoptosis 8	BAX BCL2 CD14 CDH1 GSN TNFRSF10B VIM YWHAZ
HSA-5357801 Programmed Cell Death 8	BAX BCL2 CD14 CDH1 GSN TNFRSF10B VIM YWHAZ
HSA-157118 Signaling by NOTCH 8	DLK1 EP300 JUN MDK NCOR1 STAT1 TMED2 YWHAZ
HSA-8878171 Transcriptional regulation by RUNX1 8	CSF2 CTSL EP300 ESR1 IL2 LIFR THBS1 TNFRSF18
HSA-1257604 PIP3 activates AKT signaling 8	CD86 ESR1 EZH2 FGF1 FGF23 FRS2 JUN PTEN
HSA-76002 Platelet activation, signaling and aggregation 8	GAS6 LGALS3BP PPIA SELP TF THBS1 VEGFA YWHAZ
HSA-9006925 Intracellular signaling by second messengers 8	CD86 ESR1 EZH2 FGF1 FGF23 FRS2 JUN PTEN
HSA-512988 Interleukin-3, Interleukin-5 and GM-CSF signaling 7	CSF2 CSF2RB IL2 IL2RB JAK2 JAK3 YWHAZ
HSA-447115 Interleukin-12 family signaling 7	IL10 IL12A IL12B JAK2 MIF PPIA STAT1
HSA-8957275 Post-translational protein phosphorylation 7	FGF23 GAS6 IGFBP1 IL6 PCSK9 PDIA6 TF

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Pathway ID Pathway Description Potein Count	Proteins
HSA-8878166 Transcriptional regulation by RUNX2 7	BAX ●● CCNB1 ●● CDK4 ●● ESR1 ●● ITGA5 ●● SOX9 ●● STAT1 ●●
HSA-114608 Platelet degranulation 7	GAS6 ●● LGALS3BP ●● PPIA ●● SELP ●● TF ●● THBS1 ●● VEGFA ●●
HSA-76005 Response to elevated platelet cytosolic Ca2+ 7	GAS6 ●● LGALS3BP ●● PPIA ●● SELP ●● TF ●● THBS1 ●● VEGFA ●●
HSA-1474228 Degradation of the extracellular matrix 7	ADAM9 ●● BSG ●● CDH1 ●● COL18A1 ●● CTSL ●● MMP1 ●● MMP7 ●●
HSA-3108232 SUMO E3 ligases SUMOylate target proteins 7	AURKB ●● EP300 ●● ESR1 ●● NUP88 ●● PCGF2 ●● TOP1 ●● VDR ●●
HSA-2559583 Cellular Senescence 7	CDK4 ●● CDKN2B ●● EZH2 ●● IL1A ●● IL6 ●● JUN ●● RPS6KA2 ●●
HSA-2990846 SUMOylation 7	AURKB ●● EP300 ●● ESR1 ●● NUP88 ●● PCGF2 ●● TOP1 ●● VDR ●●
HSA-6783589 Interleukin-6 family signaling 6	IL6 ●● IL6R ●● JAK2 ●● LIFR ●● OSM ●● STAT1 ●●
HSA-912526 Interleukin receptor SHC signaling 6	CSF2 ●● CSF2RB ●● IL2 ●● IL2RB ●● JAK2 ●● JAK3 ●●
HSA-9020591 Interleukin-12 signaling 6	IL10 ●● IL12A ●● IL12B ●● JAK2 ●● MIF ●● PPIA ●●
HSA-2559582 Senescence-Associated Secretory Phenotype (SASP) 6	CDK4 ●● CDKN2B ●● IL1A ●● IL6 ●● JUN ●● RPS6KA2 ●●
HSA-2219528 PI3K/AKT Signaling in Cancer 6	CD86 ●● ESR1 ●● FGF1 ●● FGF23 ●● FRS2 ●● PTEN ●●

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Pathway ID Pathway Description Potein Count	Proteins
HSA-877300 Interferon gamma signaling 6	B2M ●● HLA-C ●● HLA-DRA ●● ICAM1 ●● IRF2 ●● JAK2 ●●
HSA-199418 Negative regulation of the PI3K/AKT network 6	CD86 ●● ESR1 ●● FGF1 ●● FGF23 ●● FRS2 ●● PTEN ●●
HSA-166520 Signaling by NTRKs 6	BAX ●● BDNF ●● FRS2 ●● NTF4 ●● PTPRS ●● RPS6KA2 ●●
HSA-198933 Immunoregulatory interactions between a Lymphoid and a non-Lymphoid cell 6	B2M ●● CD33 ●● CD81 ●● CDH1 ●● HLA-C ●● ICAM1 ●●
HSA-8854691 Interleukin-20 family signaling 5	IL20 ●● IL22RA2 ●● JAK2 ●● JAK3 ●● STAT1 ●●
HSA-5669034 TNFs bind their physiological receptors 5	TNFRSF14 ●● TNFRSF18 ●● TNFRSF1A ●● TNFRSF8 ●● TNFSF13B ●●
HSA-2219530 Constitutive Signaling by Aberrant PI3K in Cancer 5	CD86 ●● ESR1 ●● FGF1 ●● FGF23 ●● FRS2 ●●
HSA-388841 Costimulation by the CD28 family 5	CD274 ●● CD86 ●● HLA-DRA ●● PDCD1 ●● TNFRSF14 ●●
HSA-1442490 Collagen degradation 5	ADAM9 ●● COL18A1 ●● CTSL ●● MMP1 ●● MMP7 ●●
HSA-6811558 PI5P, PP2A and IER3 Regulate PI3K/AKT Signaling 5	CD86 ●● ESR1 ●● FGF1 ●● FGF23 ●● FRS2 ●●

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Pathway ID Pathway Description Potein Count	Proteins
HSA-5617472 Activation of anterior HOX genes in hindbrain development during early embryogenesis 5	EP300 ●● EZH2 ●● JUN ●● NCOR1 ●● PCGF2 ●●
HSA-5619507 Activation of HOX genes during differentiation 5	EP300 ●● EZH2 ●● JUN ●● NCOR1 ●● PCGF2 ●●
HSA-5668541 TNFR2 non-canonical NF-kB pathway 5	TNFRSF14 ●● TNFRSF18 ●● TNFRSF1A ●● TNFRSF8 ●● TNFSF13B ●●
HSA-1059683 Interleukin-6 signaling 4	IL6 ●● IL6R ●● JAK2 ●● STAT1 ●●
HSA-5655302 Signaling by FGFR1 in disease 4	FGF1 ●● FGF23 ●● FRS2 ●● STAT1 ●●
HSA-2428924 IGF1R signaling cascade 4	FGF1 ●● FGF23 ●● FRS2 ●● IGF1R ●●
HSA-2428928 IRS-related events triggered by IGF1R 4	FGF1 ●● FGF23 ●● FRS2 ●● IGF1R ●●
HSA-2404192 Signaling by Type 1 Insulin-like Growth Factor 1 Receptor (IGF1R) 4	FGF1 ●● FGF23 ●● FRS2 ●● IGF1R ●●
HSA-186797 Signaling by PDGF 4	STAT1 ●● THBS1 ●● THBS2 ●● THBS3 ●●
HSA-1226099 Signaling by FGFR in disease 4	FGF1 ●● FGF23 ●● FRS2 ●● STAT1 ●●
HSA-8986944 Transcriptional Regulation by MECP2 4	AURKB ●● BDNF ●● NCOR1 ●● PTEN ●●

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Pathway ID Pathway Description Potein Count	Proteins
HSA-5654738 Signaling by FGFR2 4	FGF1 ●● FGF23 ●● FRS2 ●● TIA1 ●●
HSA-909733 Interferon alpha/beta signaling 4	HLA-C ●● IFI6 ●● IFIT2 ●● IRF2 ●●
HSA-448424 Interleukin-17 signaling 4	IL17A ●● IL17C ●● JUN ●● RPS6KA2 ●●
HSA-190236 Signaling by FGFR 4	FGF1 ●● FGF23 ●● FRS2 ●● TIA1 ●●
HSA-977225 Amyloid fiber formation 4	B2M ●● CALB1 ●● GSN ●● SORL1 ●●
HSA-448706 Interleukin-1 processing 3	IL18 ●● IL1A ●● IL1B ●●

5.2 Differential abundant proteins in Treated Day10: PAT vs WT

The following table displays information about:

- selected Reactome pathways (Table 20)

related to differential proteins within the comparison of Treated Day10: PAT vs WT samples identified in this study.

Table 20: Selected Reactome pathways related to proteins with differential abundance in Treated Day10: PAT vs WT.The first dot shows the change on protein level, the second on phosphorylation level. Green indicates a higher protein abundance in PAT-treated Day10, red indicates a higher protein abundance in WT-treated Day10. Blue indicates a higher phosphorylation abundance in PAT-treated Day10, orange indicates a higher phosphorylation abundance in WT-treated Day10. Black indicates no regulation. Yellow indicates higher abundance in PAT-treated Day10 and WT-treated Day10 for more than one antibody.

Pathway ID Pathway Description Potein Count	Proteins
HSA-1280215 Cytokine Signaling in Immune system 9	CD44 ●● HLA-G ●● IL1B ●● IRF2 ●● JUN ●● MIF ●● MMP1 ●● PPIA ●● VEGFA ●●
HSA-168249 Innate Immune System 9	C5 ●● CD44 ●● GUSB ●● IGF2R ●● IL1B ●● JUN ●● MIF ●● PPIA ●● PRKDC ●●
HSA-1474244 Extracellular matrix organization 8	ADAM9 ●● BSG ●● CD44 ●● ITGA5 ●● MMP1 ●● MMP7 ●● PTPRS ●● THBS1 ●●
HSA-9006934 Signaling by Receptor Tyrosine Kinases 7	FRS2 ●● HSPB1 ●● IGF1R ●● NCOR1 ●● PTPRS ●● THBS1 ●● VEGFA ●●
HSA-202733 Cell surface interactions at the vascular wall 6	BSG ●● CD44 ●● ITGA5 ●● MIF ●● MMP1 ●● PPIA ●●
HSA-449147 Signaling by Interleukins 6	IL1B ●● JUN ●● MIF ●● MMP1 ●● PPIA ●● VEGFA ●●
HSA-1474228 Degradation of the extracellular matrix 5	ADAM9 ●● BSG ●● CD44 ●● MMP1 ●● MMP7 ●●
HSA-6798695 Neutrophil degranulation 5	CD44 ●● GUSB ●● IGF2R ●● MIF ●● PPIA ●●
HSA-216083 Integrin cell surface interactions 4	BSG ●● CD44 ●● ITGA5 ●● THBS1 ●●
HSA-210991 Basigin interactions 3	BSG ●● MMP1 ●● PPIA ●●
HSA-1442490 Collagen degradation 3	ADAM9 ●● MMP1 ●● MMP7 ●●

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Pathway ID Pathway Description Potein Count	Proteins
HSA-877300 Interferon gamma signaling 3	CD44 ●● HLA-G ●● IRF2 ●●
HSA-6785807 Interleukin-4 and Interleukin-13 signaling 3	IL1B ●● MMP1 ●● VEGFA ●●
HSA-8878166 Transcriptional regulation by RUNX2 3	CCNB1 ●● ITGA5 ●● SOX9 ●●
HSA-114608 Platelet degranulation 3	PPIA ●● THBS1 ●● VEGFA ●●
HSA-76005 Response to elevated platelet cytosolic Ca2+ 3	PPIA ●● THBS1 ●● VEGFA ●●
HSA-2160916 Hyaluronan uptake and degradation 2	CD44 ●● GUSB ●●
HSA-2142845 Hyaluronan metabolism 2	CD44 ●● GUSB ●●
HSA-8862803 Deregulated CDK5 triggers multiple neurodegenerative pathways in Alzheimer's disease models 2	JUN ●● PRDX2 ●●
HSA-8863678 Neurodegenerative Diseases 2	JUN ●● PRDX2 ●●
HSA-69273 Cyclin A/B1/B2 associated events during G2/M transition 2	CCNA2 ●● CCNB1 ●●
HSA-1592389 Activation of Matrix Metalloproteinases 2	MMP1 ●● MMP7 ●●

6 Protein interactions

6.1 Protein interactions in Untreated Day10: PAT vs WT

Selected protein-protein interaction analysis using the STRING database (http://string-db.org) revealed several direct as well as indirect interactions of the differential proteins within Untreated Day10: PAT vs WT (Figure 38).

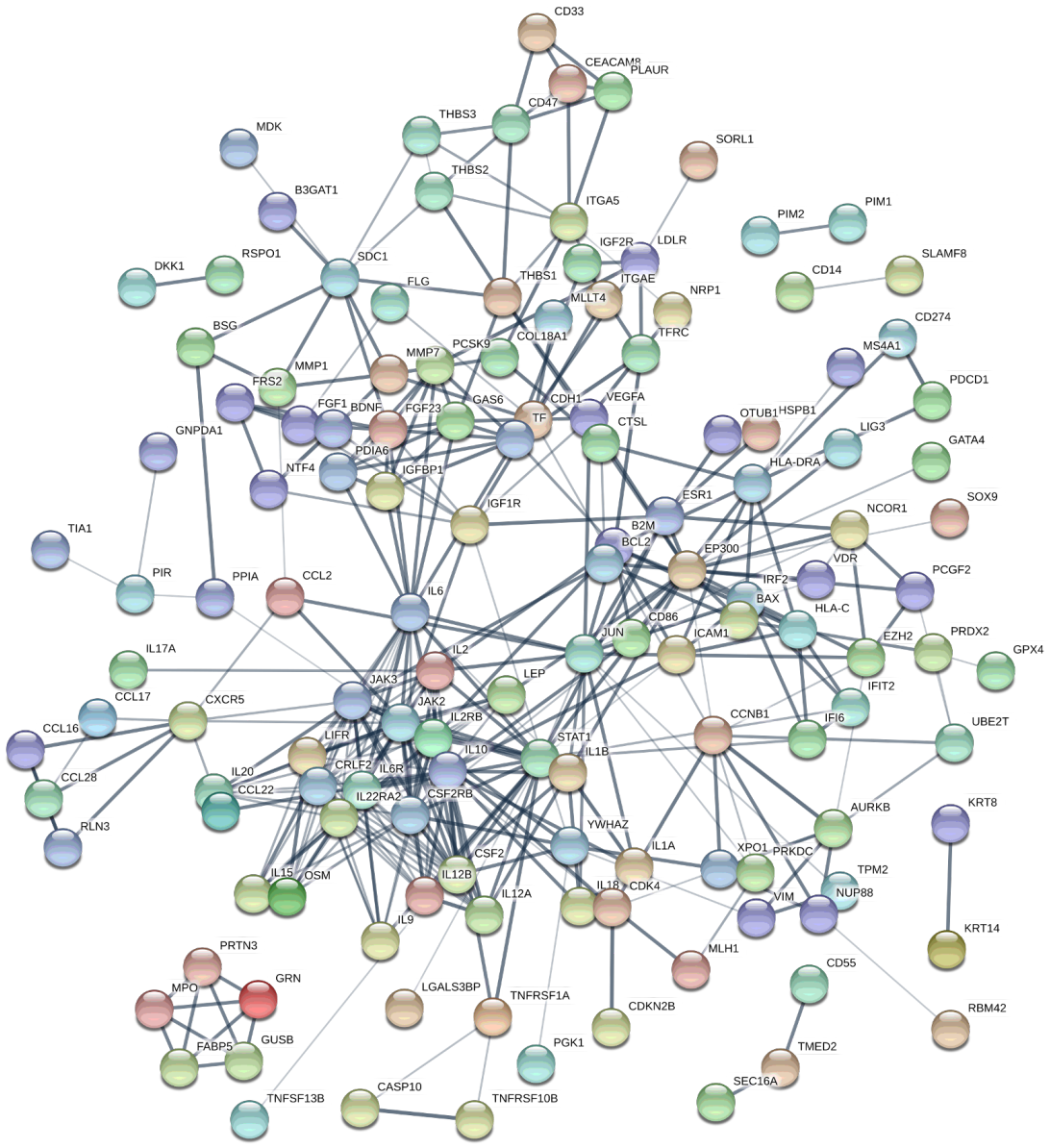

Figure 38: Selected protein interaction analysis of the differential proteins using STRING.

6.2 Protein interactions in Treated Day10: PAT vs WT

Selected protein-protein interaction analysis using the STRING database (http://string-db.org) revealed several direct as well as indirect interactions of the differential proteins within Treated Day10: PAT vs WT (Figure 39).

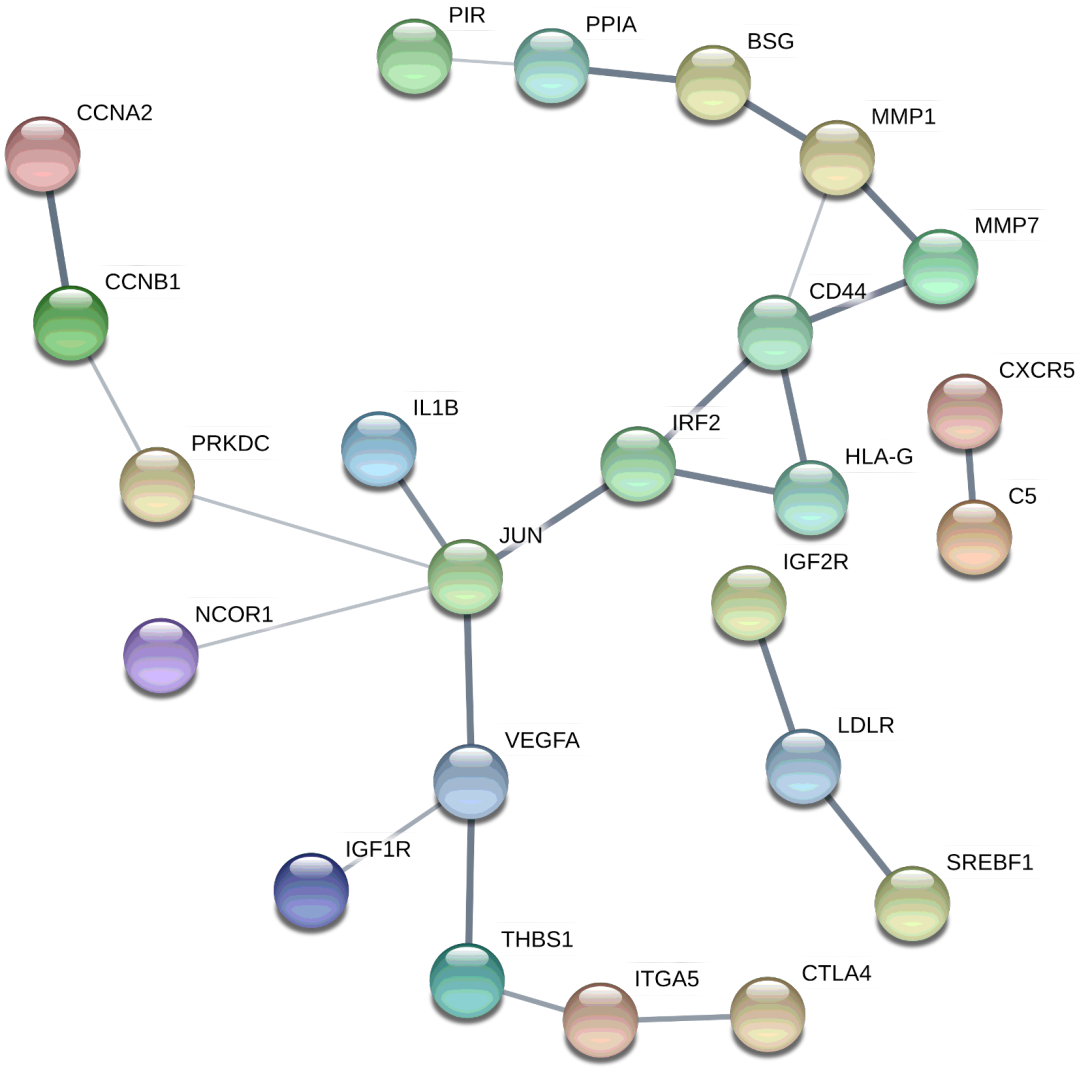

Figure 39: Selected protein interaction analysis of the differential proteins using STRING.