

Supplementary Information

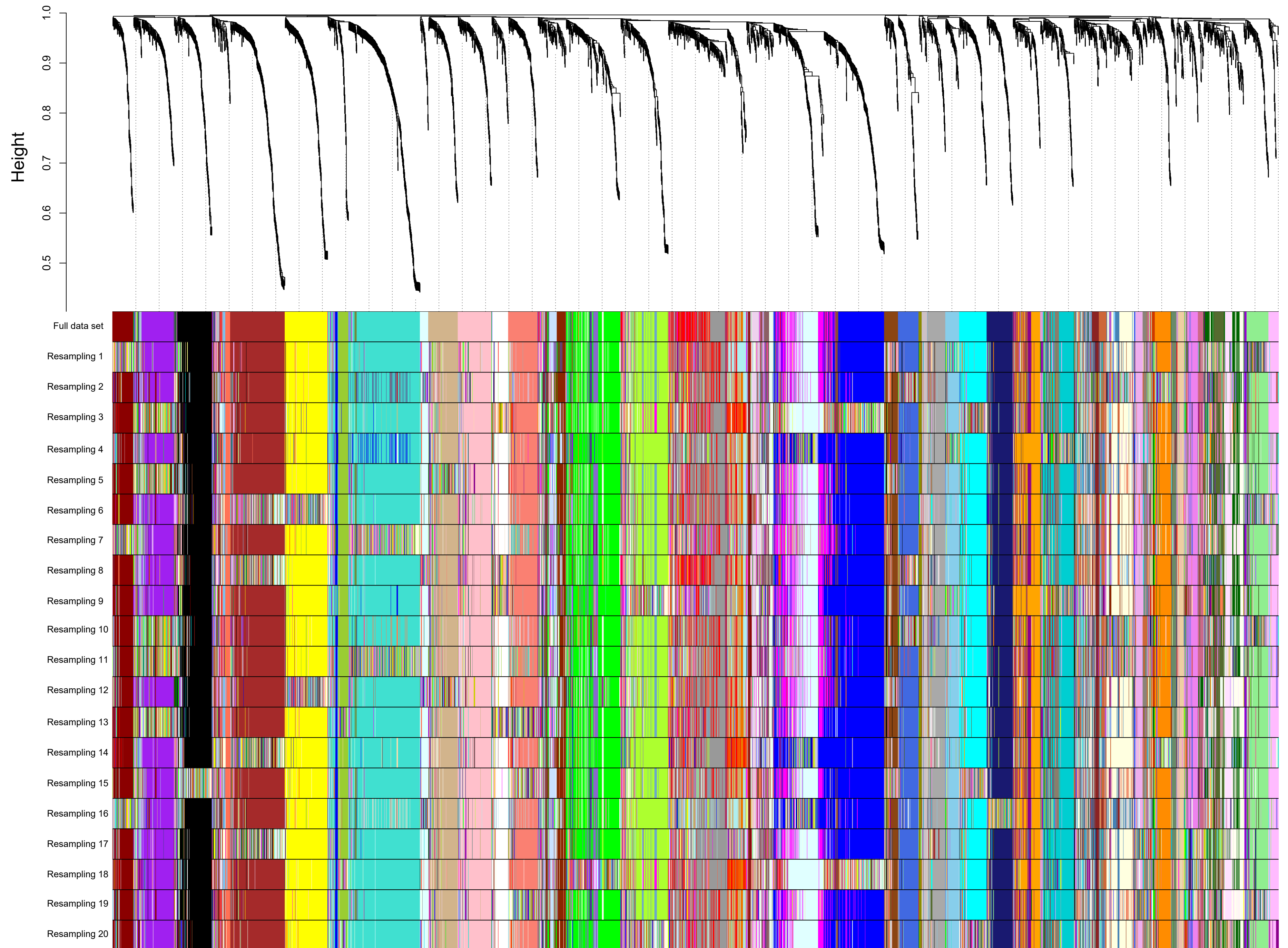
Disease-related Cellular Protein Networks Differentially Affected under Different *EGFR* Mutations in Lung Adenocarcinoma

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Supplementary Figure S1. WGCNA module stability analysis.

The upper panel demonstrates the hierarchical clustering based dendrogram of all proteins using the all samples in the dataset. Branches of the dendrogram associated with modules that are indicated with colored solid blocks in the color row for the full data set. Module assignment results of the 20 resampled dataset where 90% of the patient samples were randomly sampled were shown below the module of the full data set.

Gene dendrogram and module labels from resampled data sets

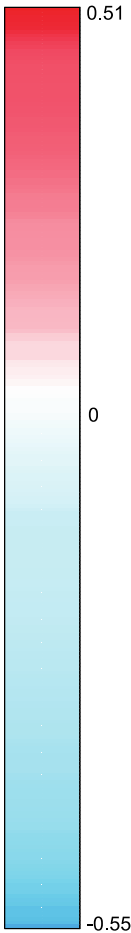


Supplementary Figure S2.

Relationship between module eigen proteins and the L858R and Ex19del mutations in the EGFR gene.

Each row in the embedded table represents weighted gene co-expression network analysis results for each module. The first and second columns in the table represent module ID and colour name of the module. The third, fourth and fifth (sixth, seventh and eighth) columns indicate the correlation coefficients (*p*-values of the correlation coefficients) between the corresponding modules and the clinical traits. The ninth column represents the number of proteins in each module. The table is colour-coded by correlation coefficient according to the colour legend on the right side of the figure. The intensity and direction of the correlations are indicated on the right side of the heatmap (red, positive correlation; blue, negative correlation). Significant *p*-values are highlighted in red.

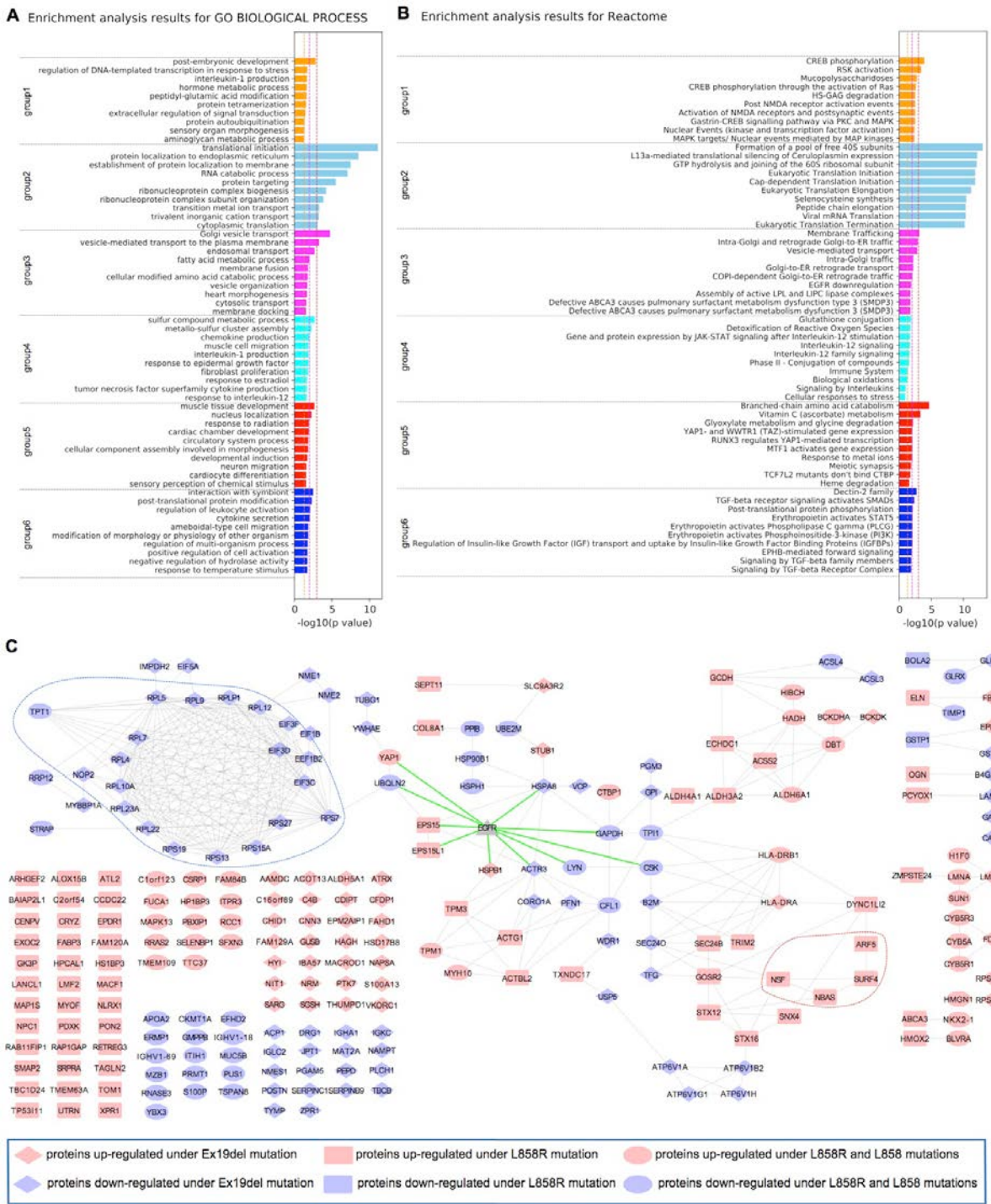
Module ID	Module Name	module trait relationships						# of genes in the module
		trait M1 (correlation)	trait M2 (correlation)	trait NM (correlation)	trait M1 (p-value)	trait M2 (p-value)	trait NM (p-value)	
WM1	antiquewhite4	-0.10	0.09	0.01	0.5586	0.6133	0.9454	14
WM2	bisque4	0.07	0.28	-0.30	0.6948	0.0936	0.0711	23
WM3	black	-0.10	-0.10	0.17	0.5698	0.5754	0.3261	99
WM4	blue	-0.12	-0.12	0.21	0.4707	0.4825	0.2140	159
WM5	blue2	0.14	-0.40	0.23	0.4307	0.0147	0.1733	7
WM6	brown	-0.07	-0.11	0.16	0.6789	0.5305	0.3654	158
WM7	brown2	-0.02	-0.23	0.22	0.8875	0.1760	0.1955	7
WM8	brown4	0.11	0.31	-0.26	0.5230	0.0669	0.0293	23
WM9	coral1	-0.23	-0.32	0.46	0.1687	0.0567	0.0029	15
WM10	coral2	0.09	-0.03	-0.06	0.5832	0.8575	0.7499	12
WM11	cyan	-0.10	-0.09	0.17	0.5652	0.5891	0.3318	80
WM12	darkgreen	0.03	0.44	-0.41	0.8628	0.0074	0.0139	58
WM13	darkgrey	-0.15	-0.19	0.30	0.3676	0.2639	0.0759	51
WM14	darkmagenta	0.15	0.34	-0.42	0.3911	0.0425	0.0103	31
WM15	darkolivegreen	0.19	0.46	-0.55	0.2786	0.0050	0.0004	33
WM16	darkolivegreen4	-0.19	-0.01	0.17	0.2565	0.5693	0.3104	7
WM17	darkorange	-0.10	0.29	-0.17	0.5687	0.0811	0.3212	46
WM18	darkorange2	-0.04	0.26	-0.19	0.8340	0.1262	0.2582	23
WM19	darkred	-0.05	-0.11	0.14	0.7539	0.5280	0.4121	60
WM20	darkseagreen4	-0.05	-0.12	0.14	0.7916	0.4992	0.4145	15
WM21	darkslateblue	-0.26	-0.28	0.47	0.1258	0.1011	0.0042	21
WM22	darkturquoise	0.25	-0.10	-0.13	0.1407	0.5763	0.4377	56
WM23	darkviolet	0.36	-0.19	-0.15	0.0307	0.2674	0.3891	6
WM24	firebrick4	0.13	-0.20	0.07	0.4598	0.2588	0.7047	7
WM25	floralwhite	-0.21	-0.06	0.23	0.2169	0.7401	0.1729	24
WM26	green	-0.11	-0.12	0.20	0.5183	0.4889	0.2433	119
WM27	greymyellow	-0.10	-0.10	0.17	0.5707	0.5728	0.3250	93
WM28	grey60	0.26	0.03	-0.25	0.1201	0.8792	0.1395	68
WM29	honeydew1	0.10	-0.44	0.29	0.5671	0.0076	0.0820	16
WM30	indianred4	-0.06	-0.12	0.16	0.7277	0.4709	0.3528	27
WM31	ivory	-0.01	0.29	-0.24	0.9480	0.0903	0.1615	24
WM32	lavenderblush3	-0.02	0.26	-0.21	0.9067	0.1233	0.2212	16
WM33	lightcoral	-0.07	-0.27	0.29	0.6852	0.1154	0.0842	7
WM34	lightcyan	-0.11	-0.11	0.19	0.5287	0.5322	0.2744	69
WM35	lightcyan1	0.29	-0.09	-0.17	0.0844	0.5859	0.3181	24
WM36	lightgreen	0.26	-0.01	-0.22	0.1189	0.9624	0.1930	66
WM37	lightpink4	0.12	-0.37	0.22	0.4904	0.0247	0.1953	17
WM38	lightsteelblue	0.02	0.05	-0.06	0.9205	0.7782	0.7410	7
WM39	lightsteelblue1	-0.20	-0.27	0.41	0.2904	0.1059	0.0136	25
WM40	lightyellow	-0.16	0.25	-0.08	0.3657	0.1490	0.6508	66
WM41	magenta	-0.14	-0.14	0.24	0.4081	0.4158	0.1511	96
WM42	maroon	0.28	-0.11	-0.14	0.1024	0.5046	0.4151	17
WM43	mediumorchid	-0.05	-0.18	0.20	0.7932	0.2916	0.2527	12
WM44	mediumpurple2	-0.04	0.51	-0.40	0.7986	0.0014	0.0143	7
WM45	mediumpurple3	-0.14	-0.24	0.33	0.4150	0.1585	0.0499	25
WM46	midnightblue	-0.10	0.30	-0.17	0.5670	0.0796	0.3190	76
WM47	navajowhite2	-0.11	0.29	-0.15	0.5226	0.0882	0.3690	17
WM48	orange	-0.10	0.30	-0.17	0.5662	0.0790	0.3180	48
WM49	orangered3	0.02	0.31	-0.28	0.9074	0.0691	0.0947	8
WM50	orangered4	0.14	-0.13	-0.01	0.4096	0.4414	0.9627	26
WM51	paleturquoise	-0.18	0.05	0.12	0.2808	0.7751	0.4959	37
WM52	paleturquoise3	0.05	0.11	-0.14	0.7733	0.5299	0.4263	18
WM53	pink	0.28	-0.11	-0.15	0.0948	0.5387	0.3726	97
WM54	plum	0.10	0.14	-0.20	0.5763	0.4148	0.2308	8
WM55	plum1	0.29	-0.10	-0.17	0.0834	0.5747	0.3229	28
WM56	plum2	-0.12	-0.12	0.22	0.4678	0.4686	0.2053	21
WM57	plum3	0.00	0.00	0.00	0.9879	0.9991	0.9887	5
WM58	purple	-0.12	-0.07	0.16	0.4978	0.6998	0.3552	95
WM59	red	-0.14	0.17	-0.02	0.4232	0.3338	0.8879	105
WM60	royalblue	0.29	-0.09	-0.17	0.0846	0.5882	0.3171	60
WM61	saddlebrown	0.05	0.24	-0.25	0.7782	0.1570	0.1403	40
WM62	salmon	-0.10	-0.10	0.17	0.5698	0.5754	0.3261	86
WM63	salmon2	0.10	0.27	-0.32	0.5782	0.1067	0.0573	5
WM64	salmon4	-0.32	-0.20	0.45	0.0574	0.2436	0.0059	19
WM65	sienna3	-0.01	0.02	-0.01	0.9455	0.9046	0.9645	31
WM66	skyblue	-0.13	0.01	0.10	0.4674	0.9516	0.5648	41
WM67	skyblue1	-0.15	0.20	-0.04	0.3925	0.2489	0.8008	8
WM68	skyblue2	-0.25	-0.06	0.27	0.1479	0.7206	0.1160	11
WM69	skyblue3	-0.15	-0.15	0.25	0.3896	0.3940	0.1336	29
WM70	steelblue	0.10	0.13	-0.20	0.5534	0.4655	0.2490	38
WM71	tan	0.28	-0.10	-0.16	0.0924	0.5466	0.3618	86
WM72	thistle	-0.19	-0.17	0.31	0.2571	0.3343	0.0645	5
WM73	thistle1	-0.10	0.30	-0.17	0.5672	0.0798	0.3193	19
WM74	thistle2	-0.07	-0.16	0.20	0.7047	0.3414	0.2470	21
WM75	thistle3	-0.09	-0.35	0.38	0.6167	0.0355	0.0226	5
WM76	turquoise	-0.12	-0.12	0.20	0.5022	0.4919	0.2361	203
WM77	violet	-0.04	0.27	-0.20	0.8242	0.1073	0.2347	34
WM78	white	0.28	-0.11	-0.15	0.1040	0.5349	0.3957	46
WM79	yellow	-0.10	-0.10	0.17	0.5709	0.5721	0.3247	124
WM80	yellow4	0.05	-0.03	-0.02	0.7643	0.8636	0.9118	9
WM81	yellowgreen	-0.10	-0.09	0.17	0.5642	0.5920	0.3330	30



Supplementary Figure S3.

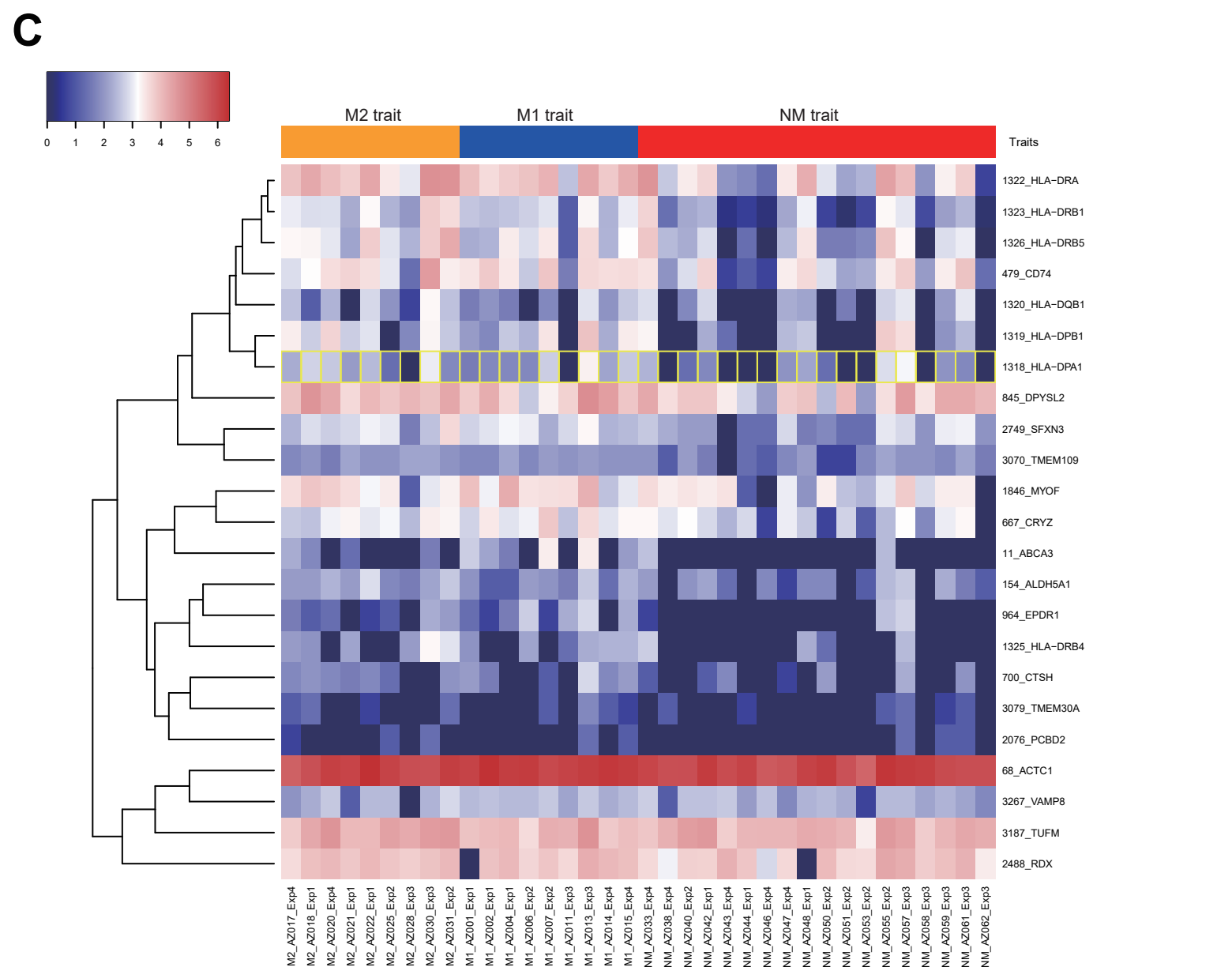
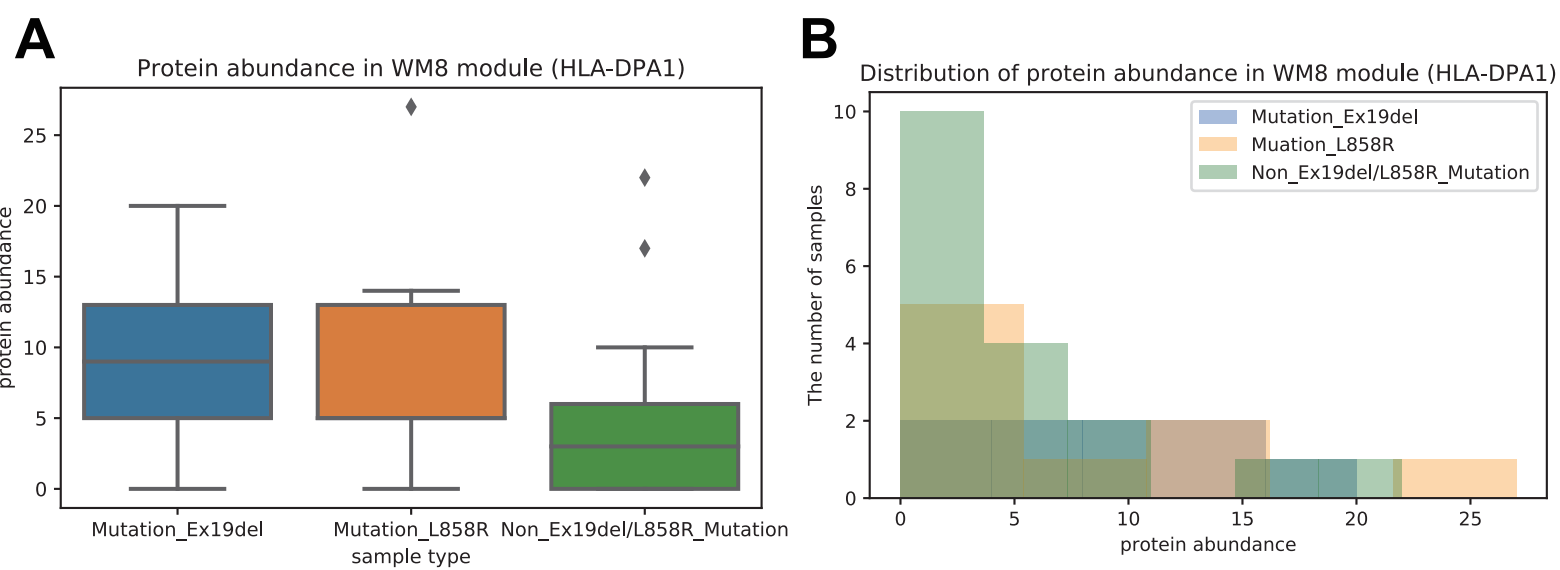
Pathway enrichment analysis and protein interaction networks for protein groups by analysis of variance (ANOVA).

A. Pathway enrichment analysis using the GO Biological Process database for protein groups identified by ANOVA. B. Pathway enrichment analysis using the Reactome pathway database for protein groups identified by ANOVA. The vertical axis shows the pathway names, and the bars on the horizontal axis represent the $-\log_{10}(p\text{-value})$ of the corresponding pathways. Orange, sky blue, magenta, cyan, red and blue bars indicate the results for groups 1, 2, 3, 4, 5 and 6, respectively. Dashed lines in orange, magenta and red indicate p -values <0.05 , <0.01 and <0.001 , respectively. C. Protein network for proteins identified by ANOVA.



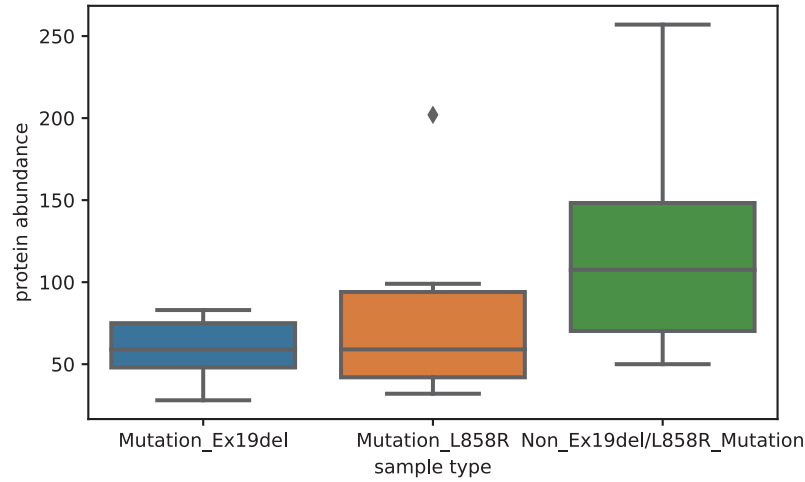
Supplementary Material. Properties of the focused 13 WGCNA module in Figure 3-5.

In each page, A. Boxplots of eigen protein profiles in the focused modules. The boxplot show the eigen protein expression abundance (the protein name is indicated in the plot title), and outlier data points indicate the outlier samples within each group. B. Histograms of expression abundance of the eigen protein for each sample group. Horizontal axis indicates abundance of the eigen protein and vertical axis indicates the absolute number of samples in each bin. C. Heatmap for the values of $\log_2(\text{abundance}+1)$ for all membership proteins in the module normalize across the samples. We used R heatmap3 function with default settings to visualize the data.

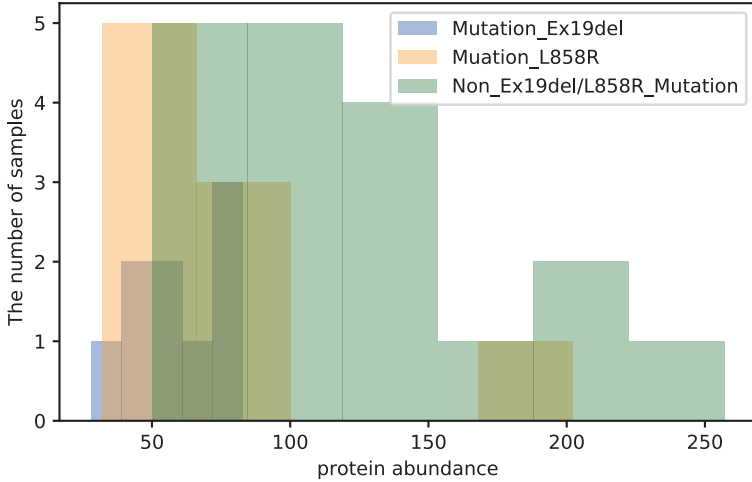
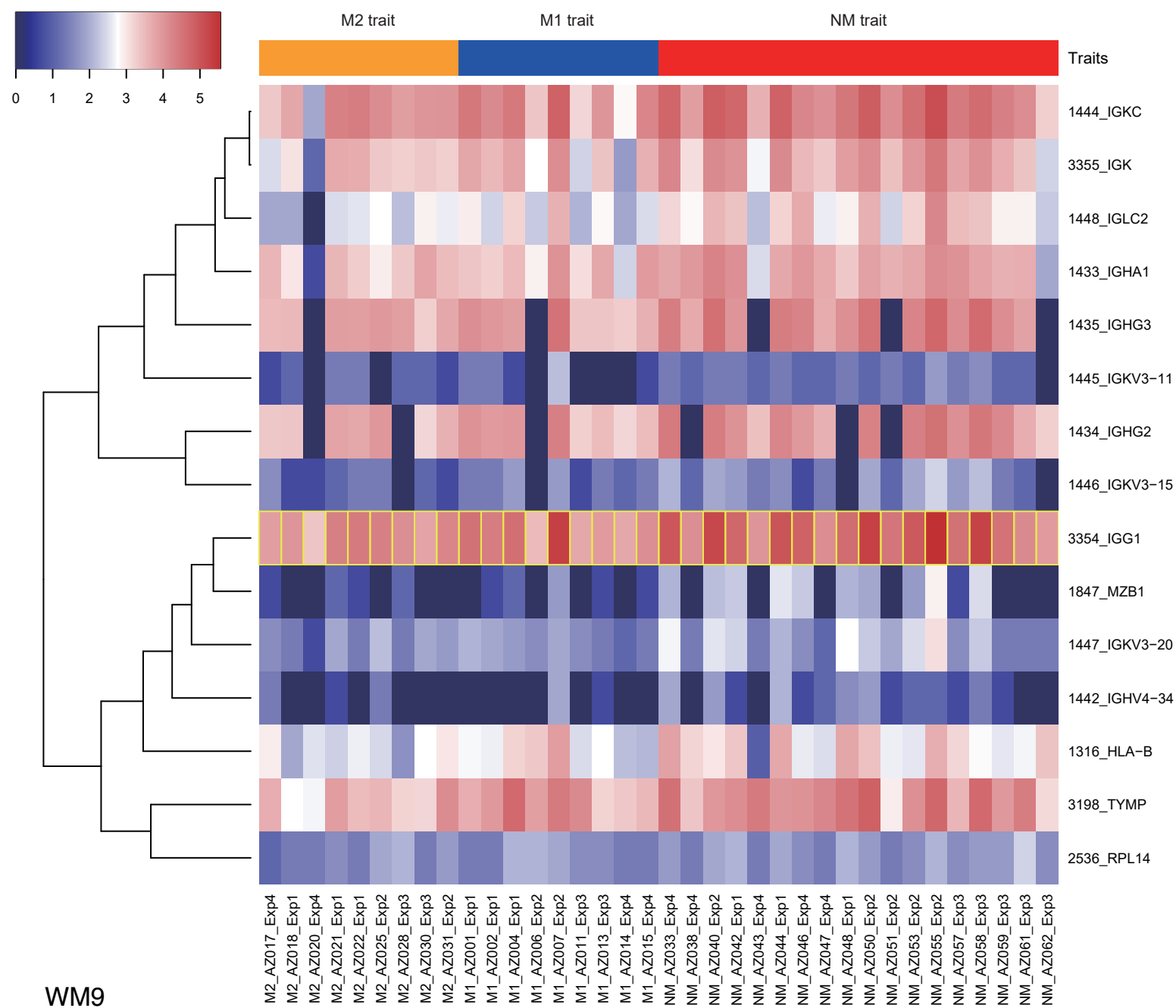


A

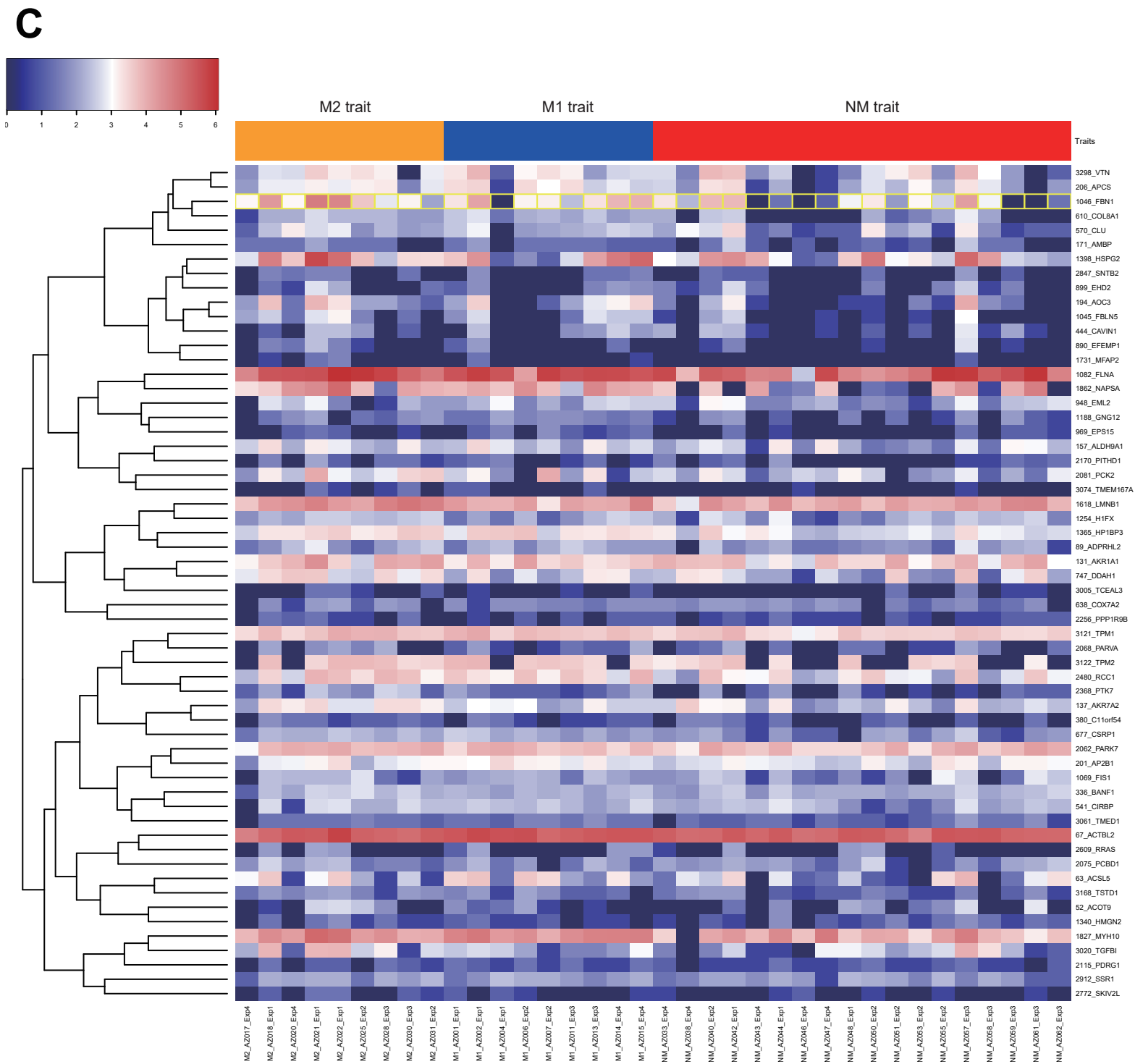
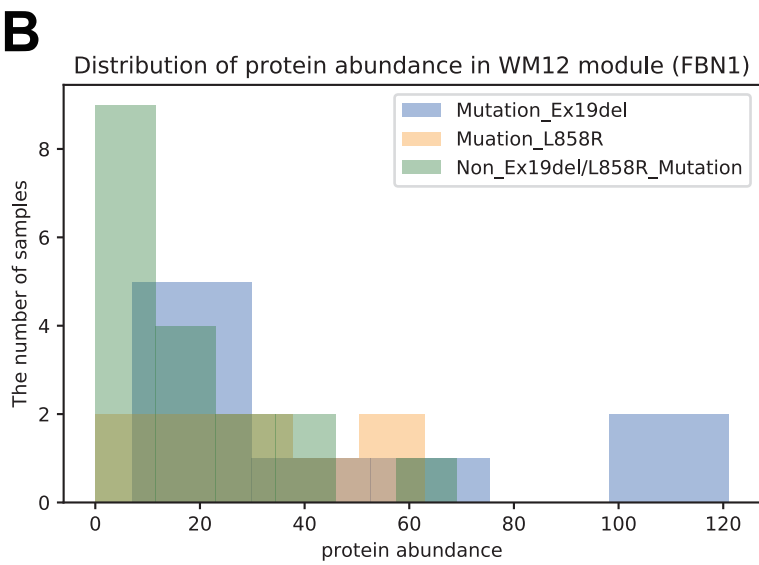
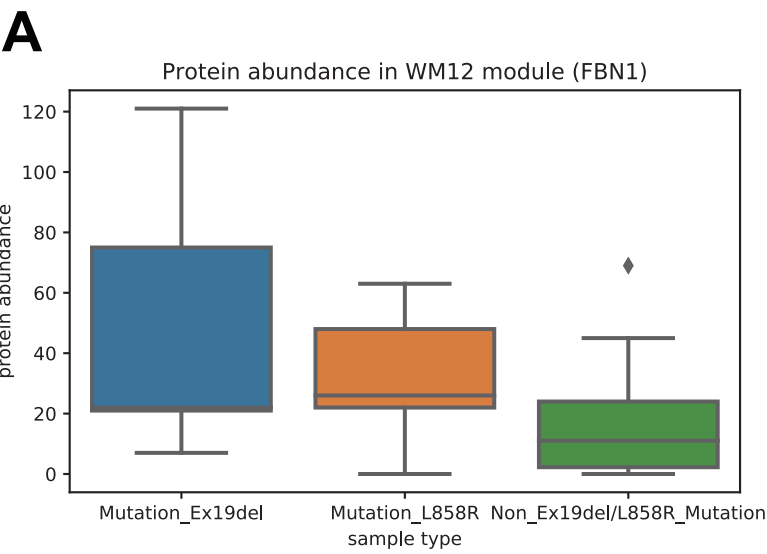
Protein abundance in WM9 module (IGG1)

**B**

Distribution of protein abundance in WM9 module (IGG1)

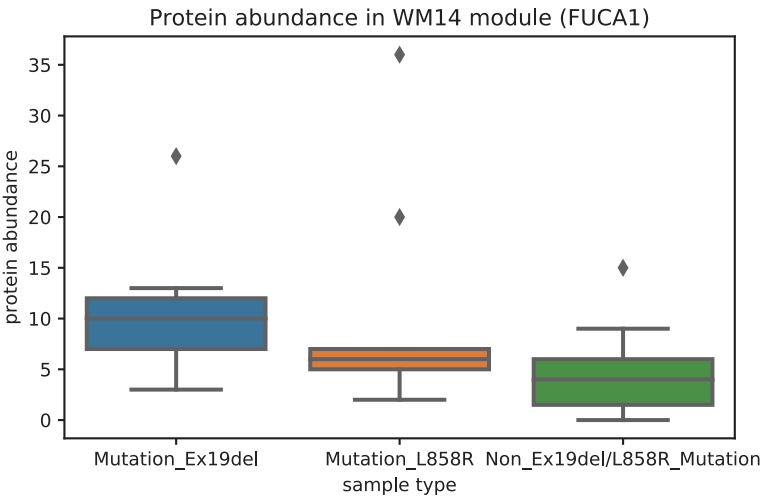
**C**

WM9

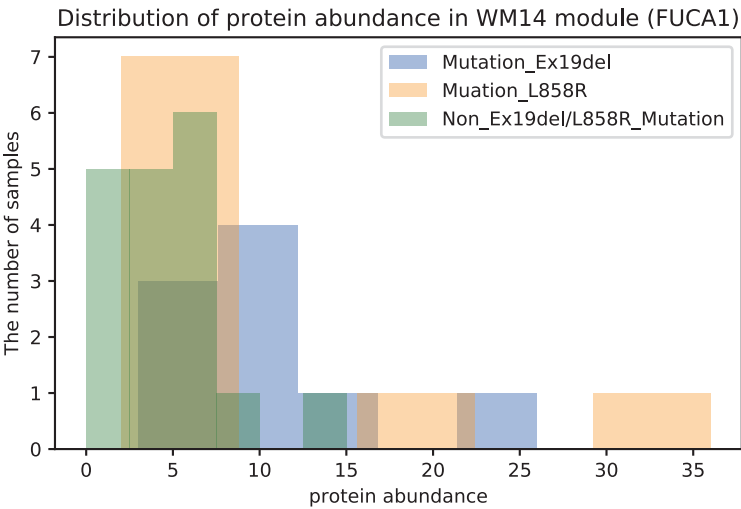


WM12

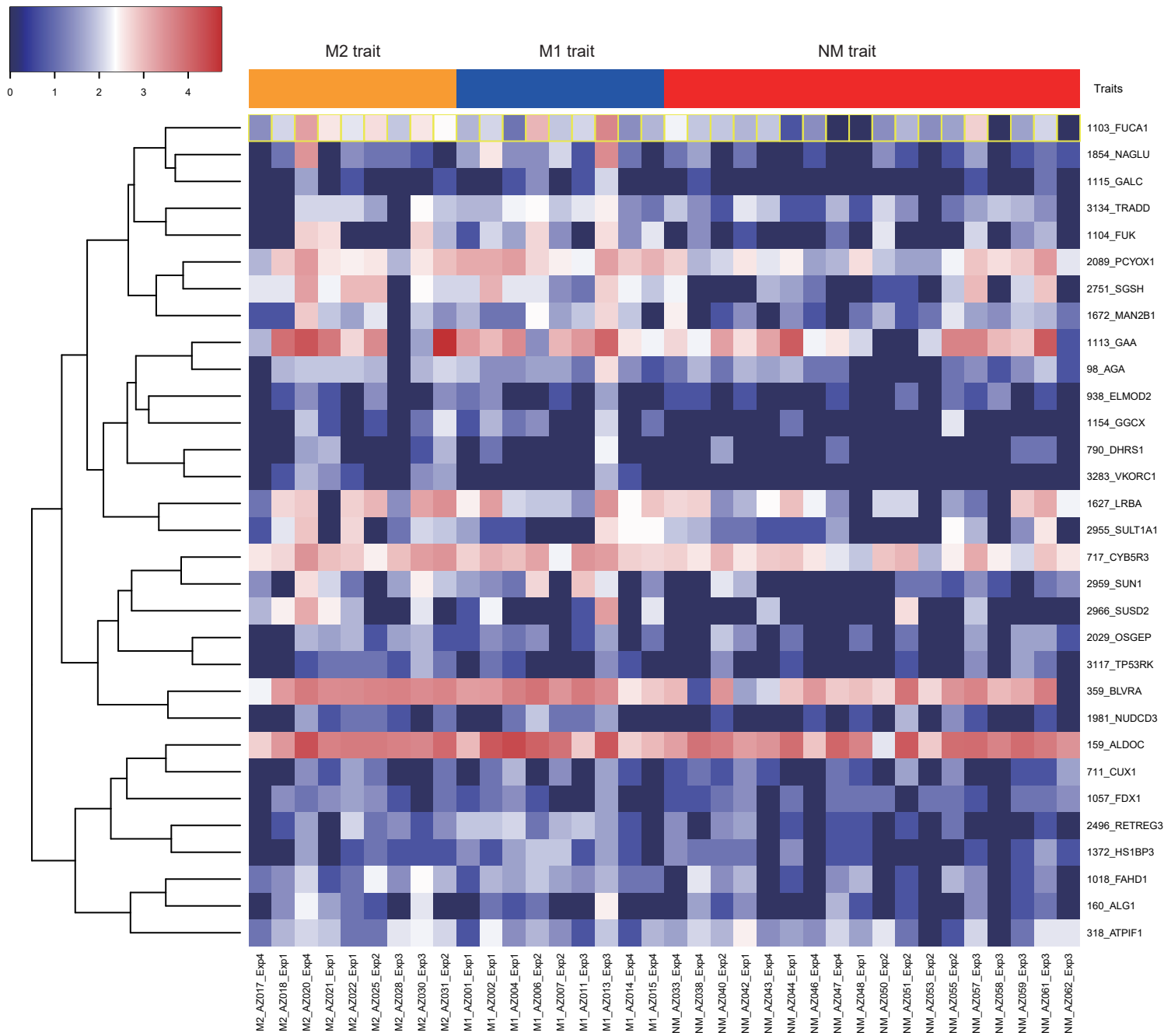
A



B

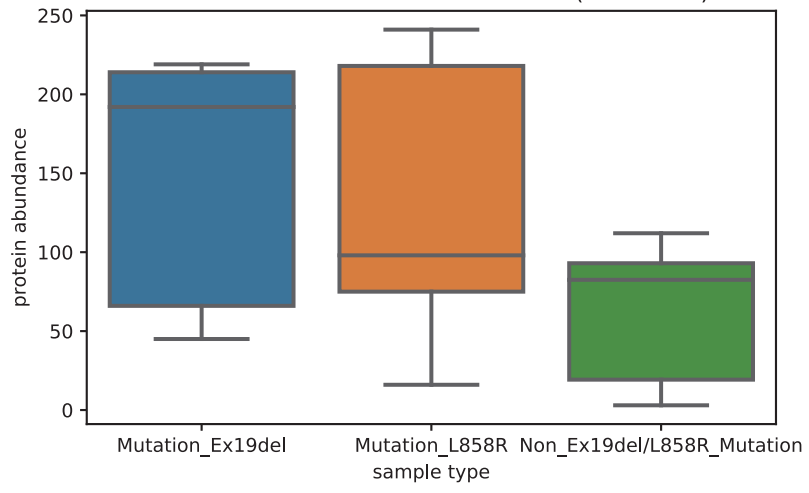


C

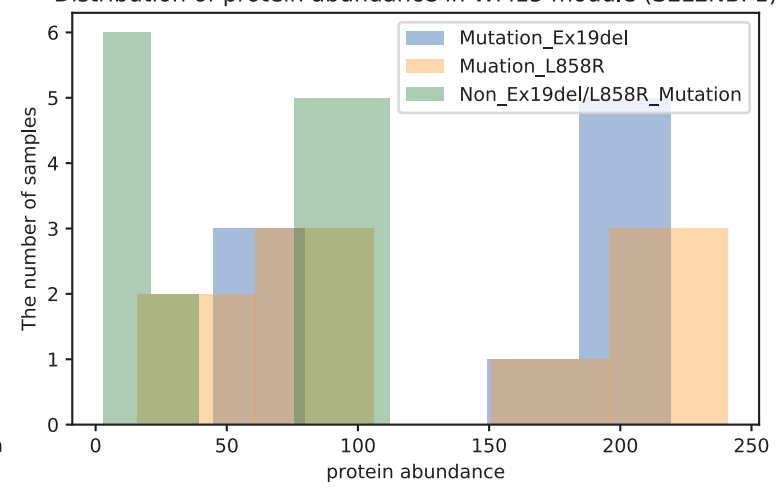
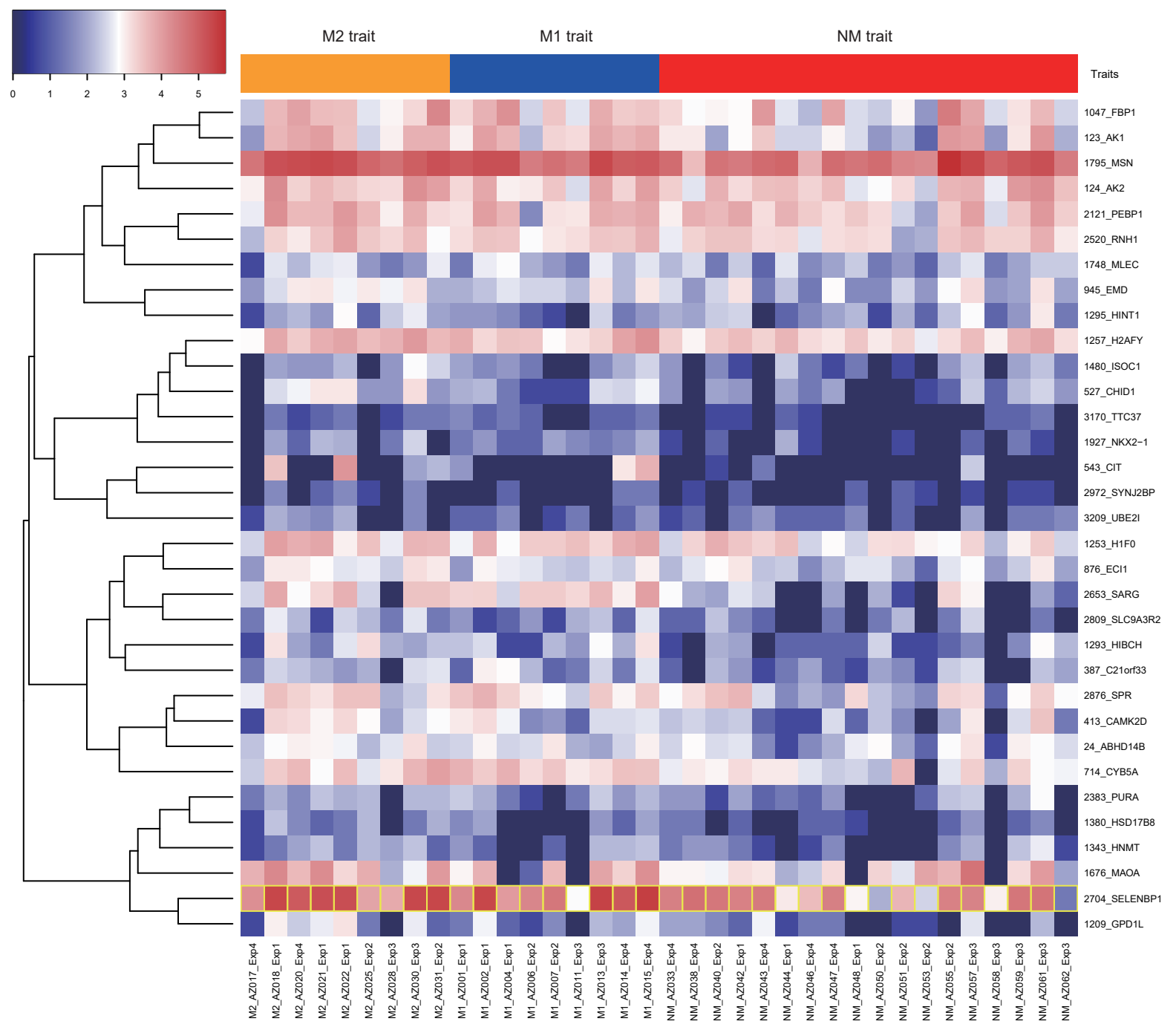


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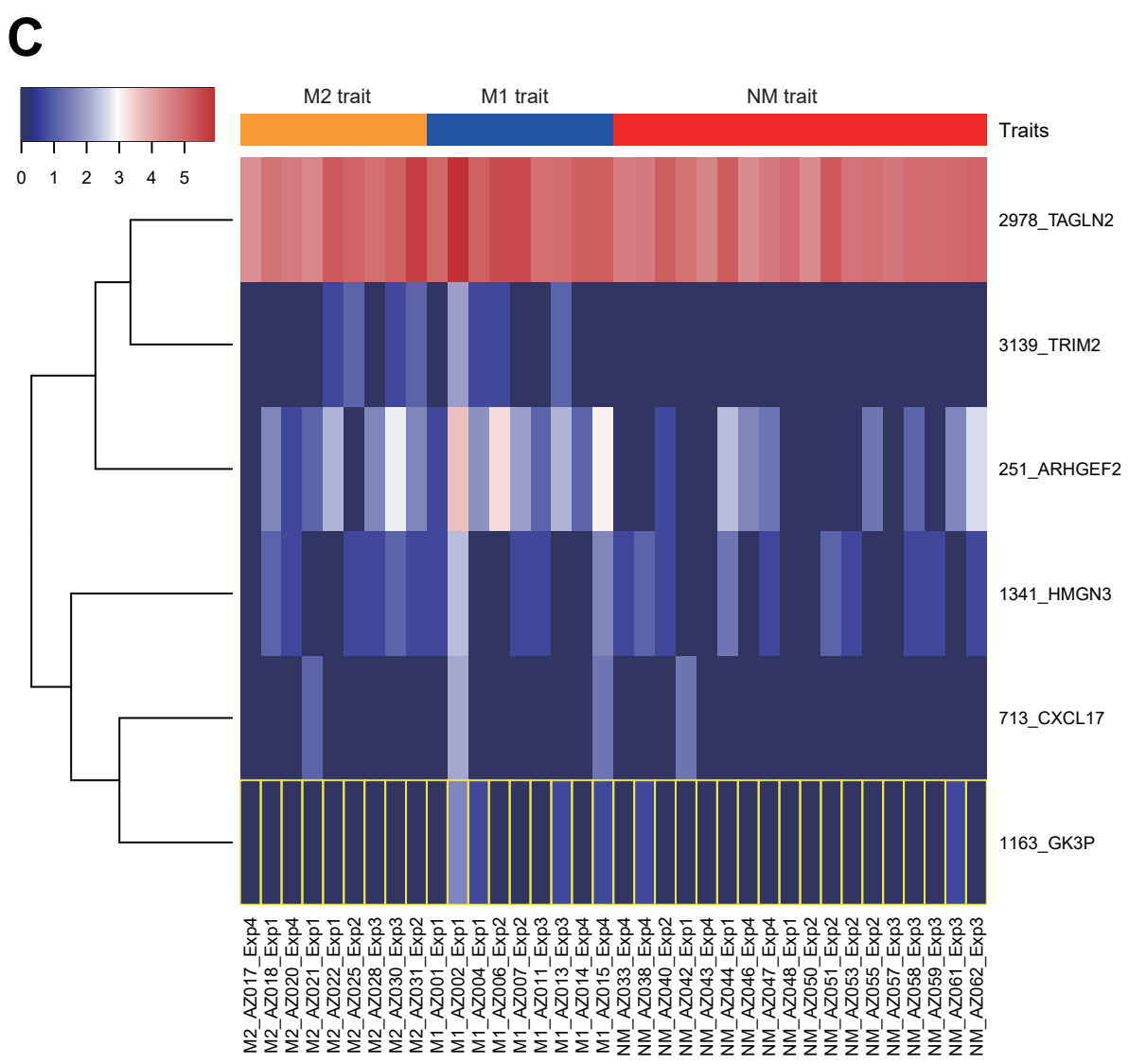
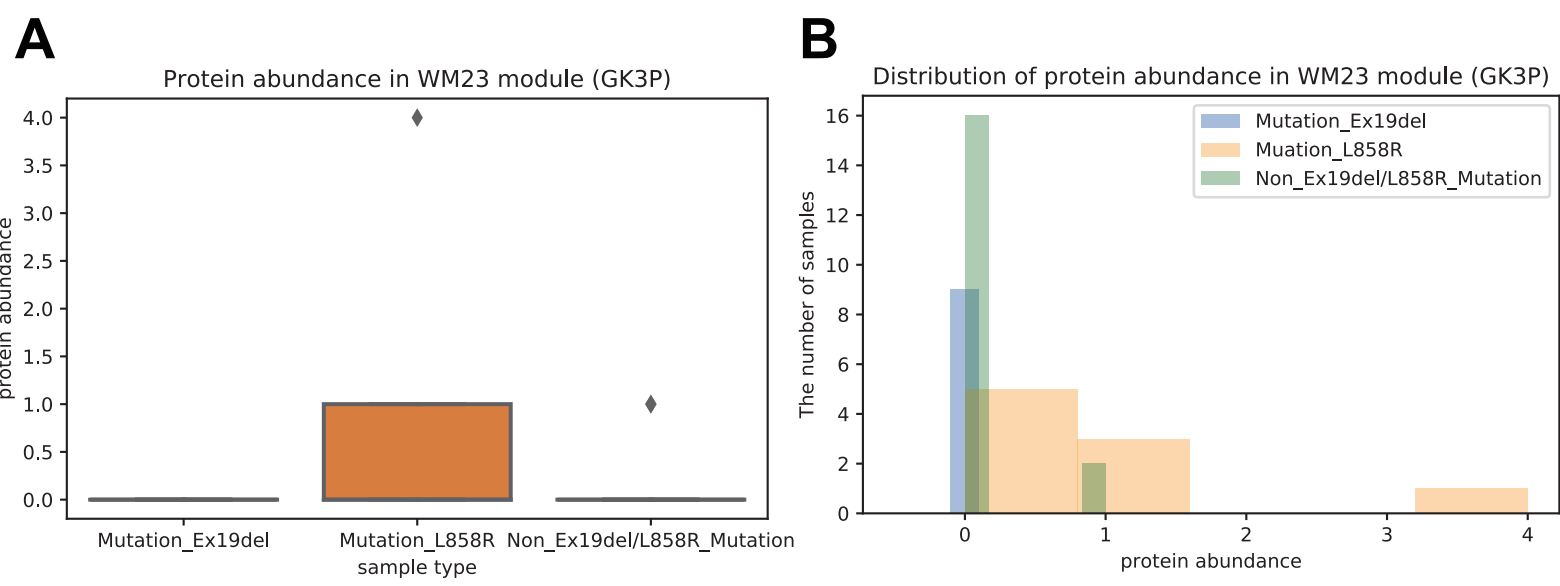
Protein abundance in WM15 module (SELENBP1)

**B**

Distribution of protein abundance in WM15 module (SELENBP1)

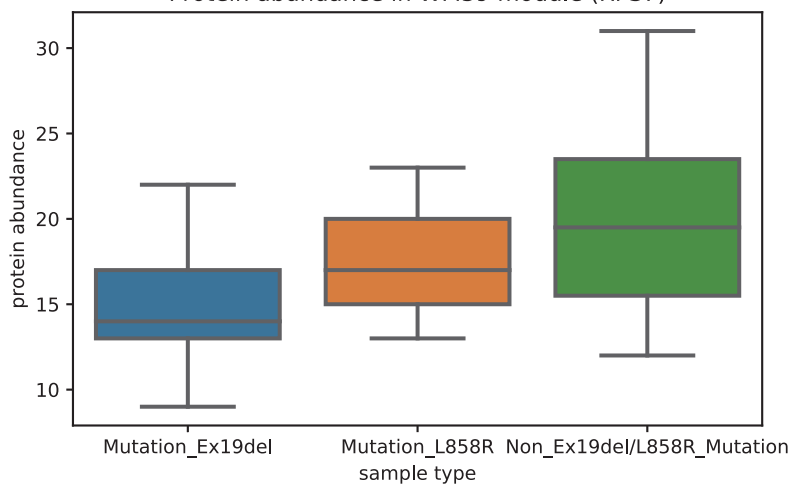
**C**

WM15

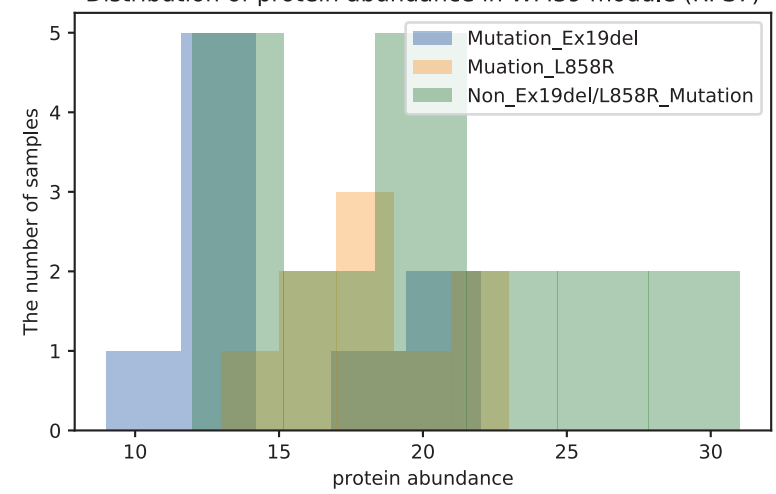
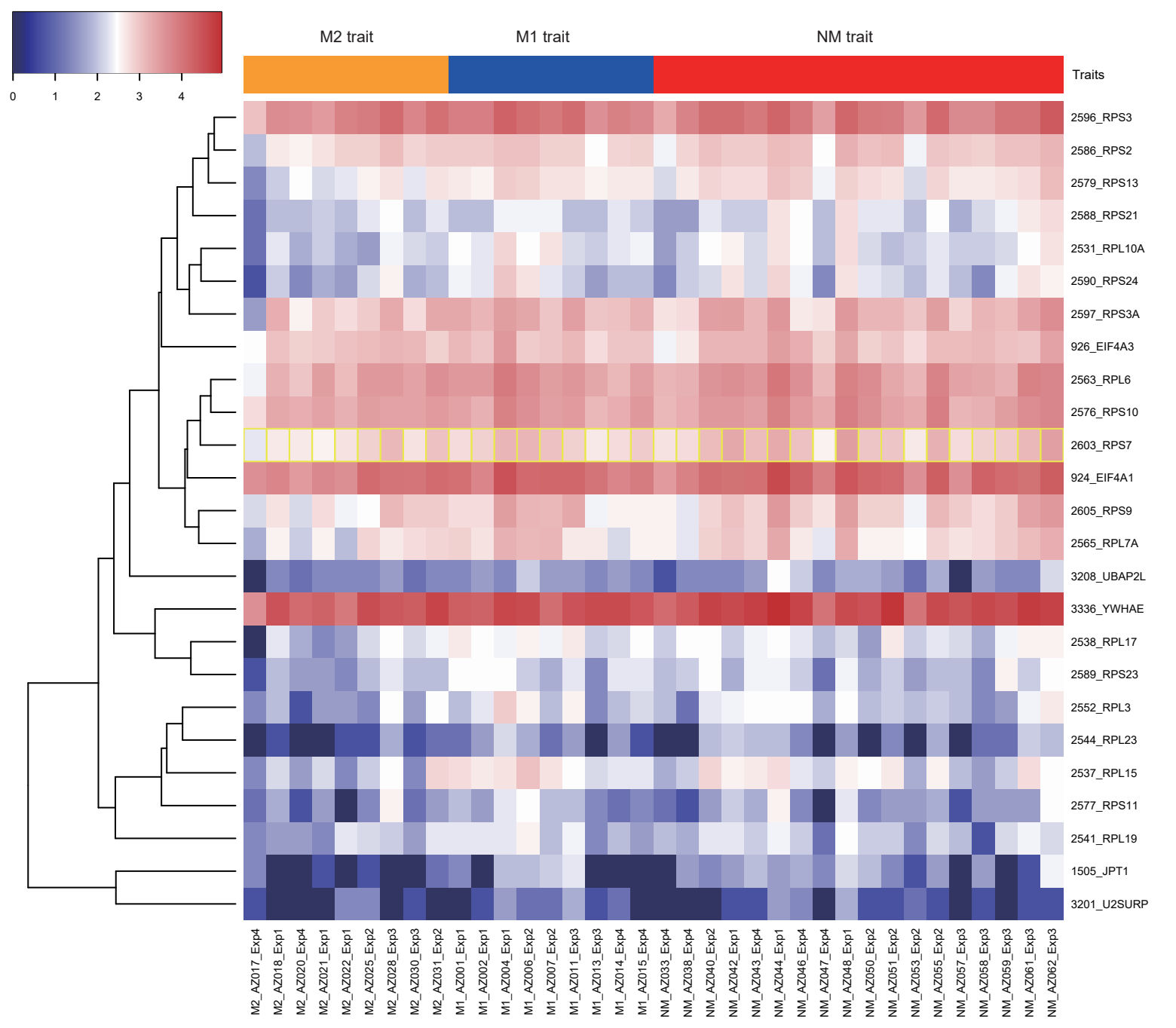


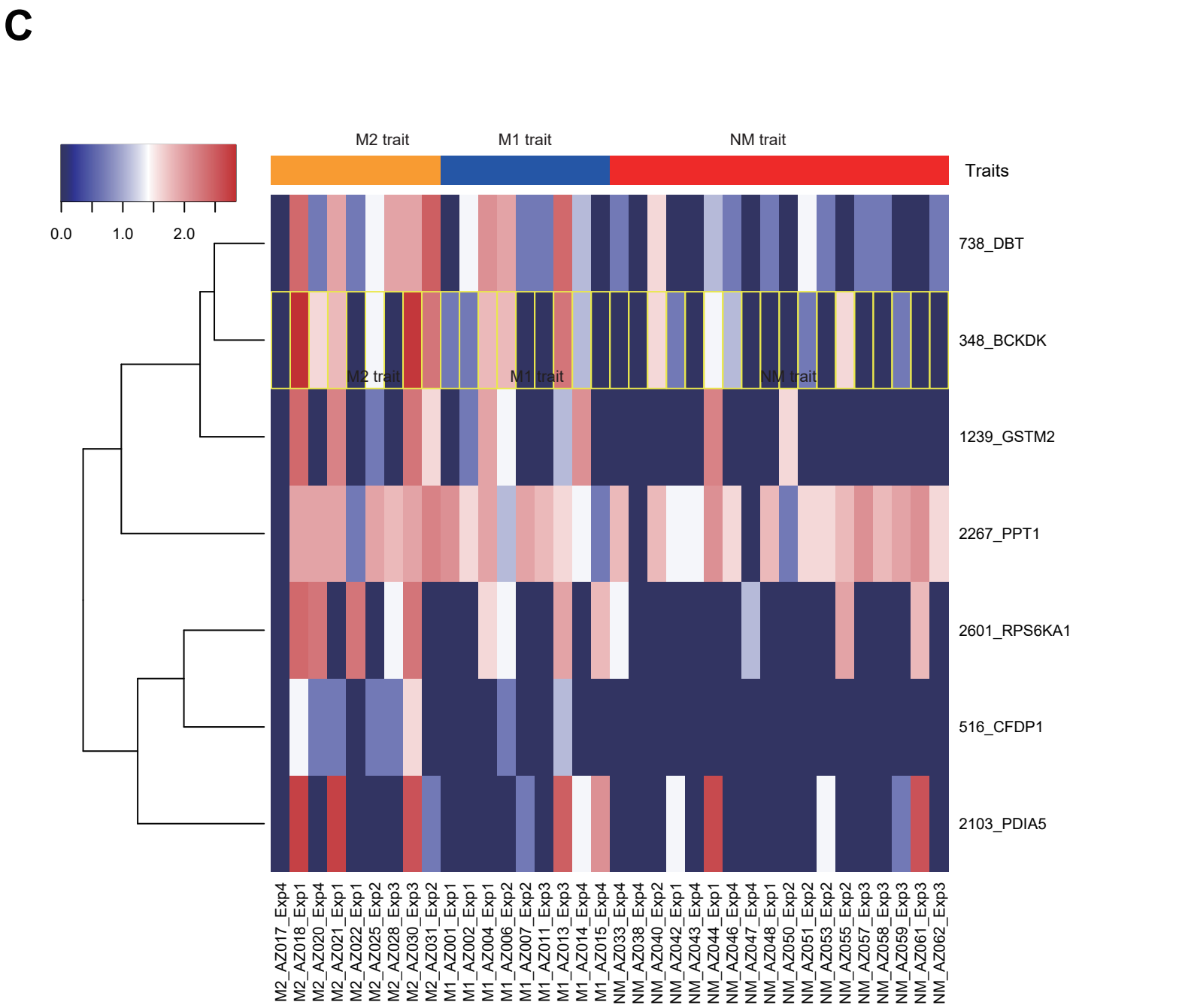
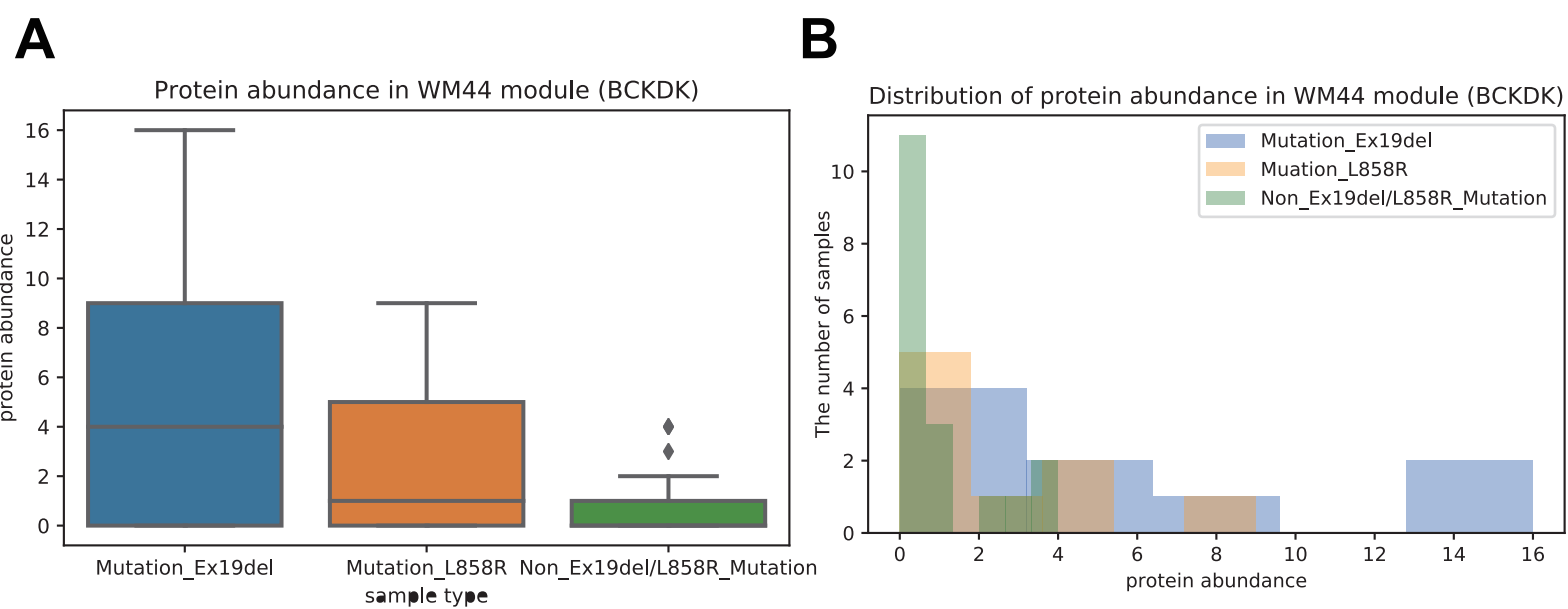
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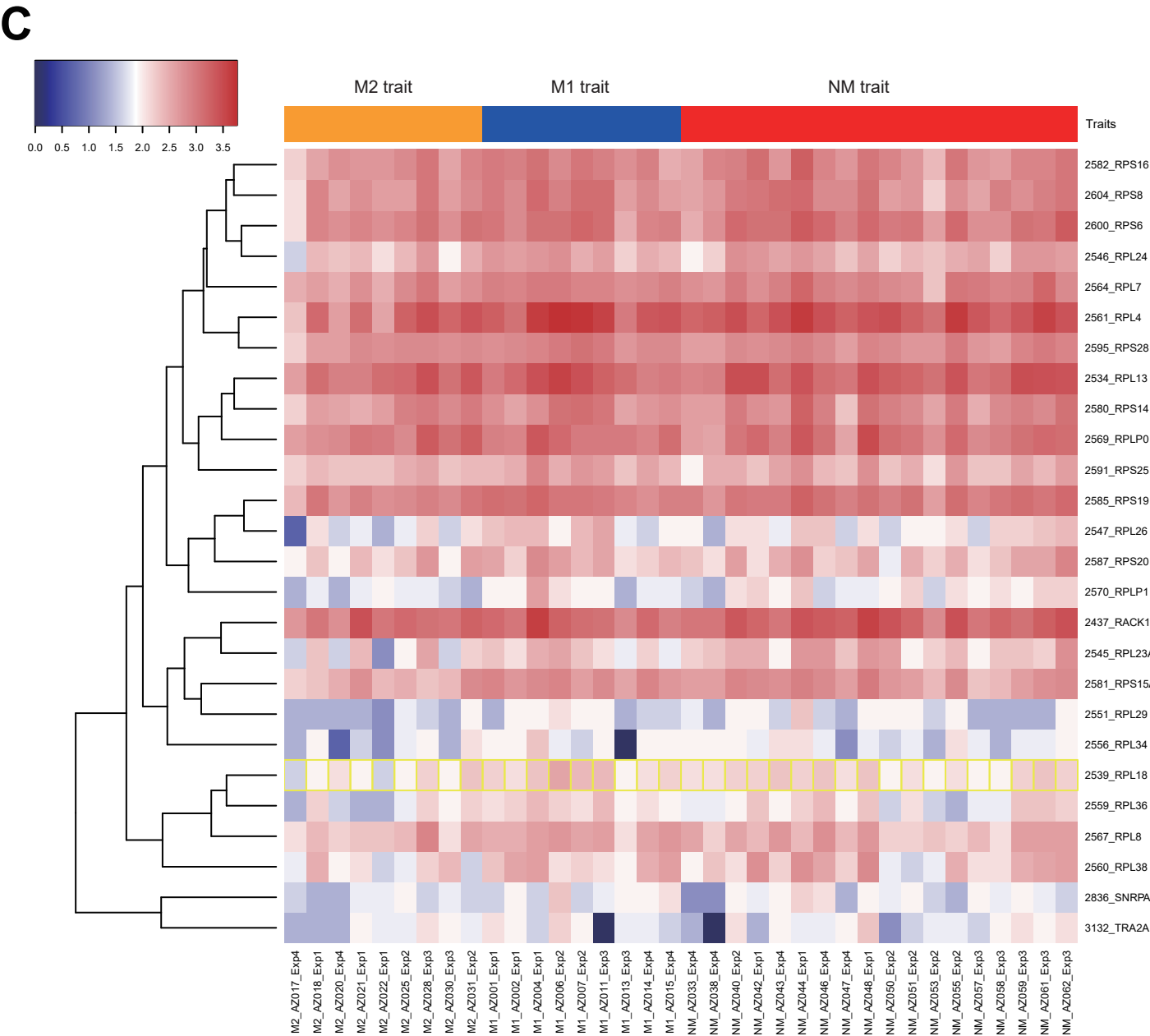
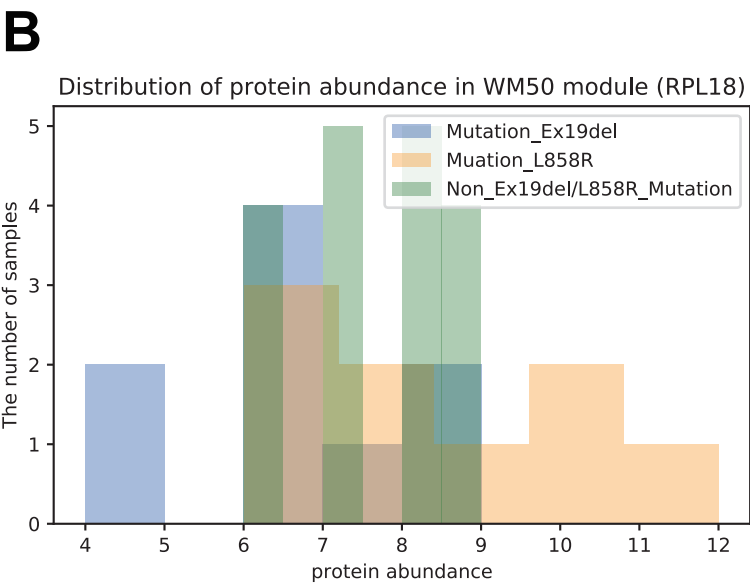
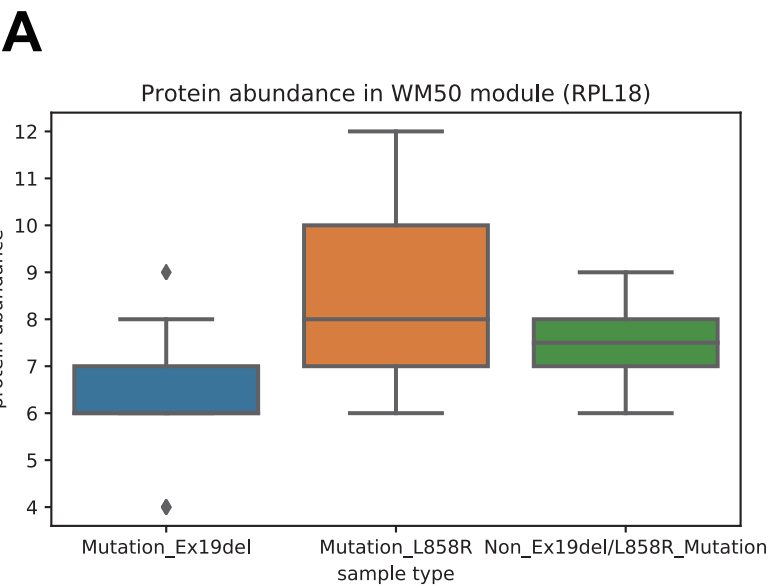
Protein abundance in WM39 module (RPS7)

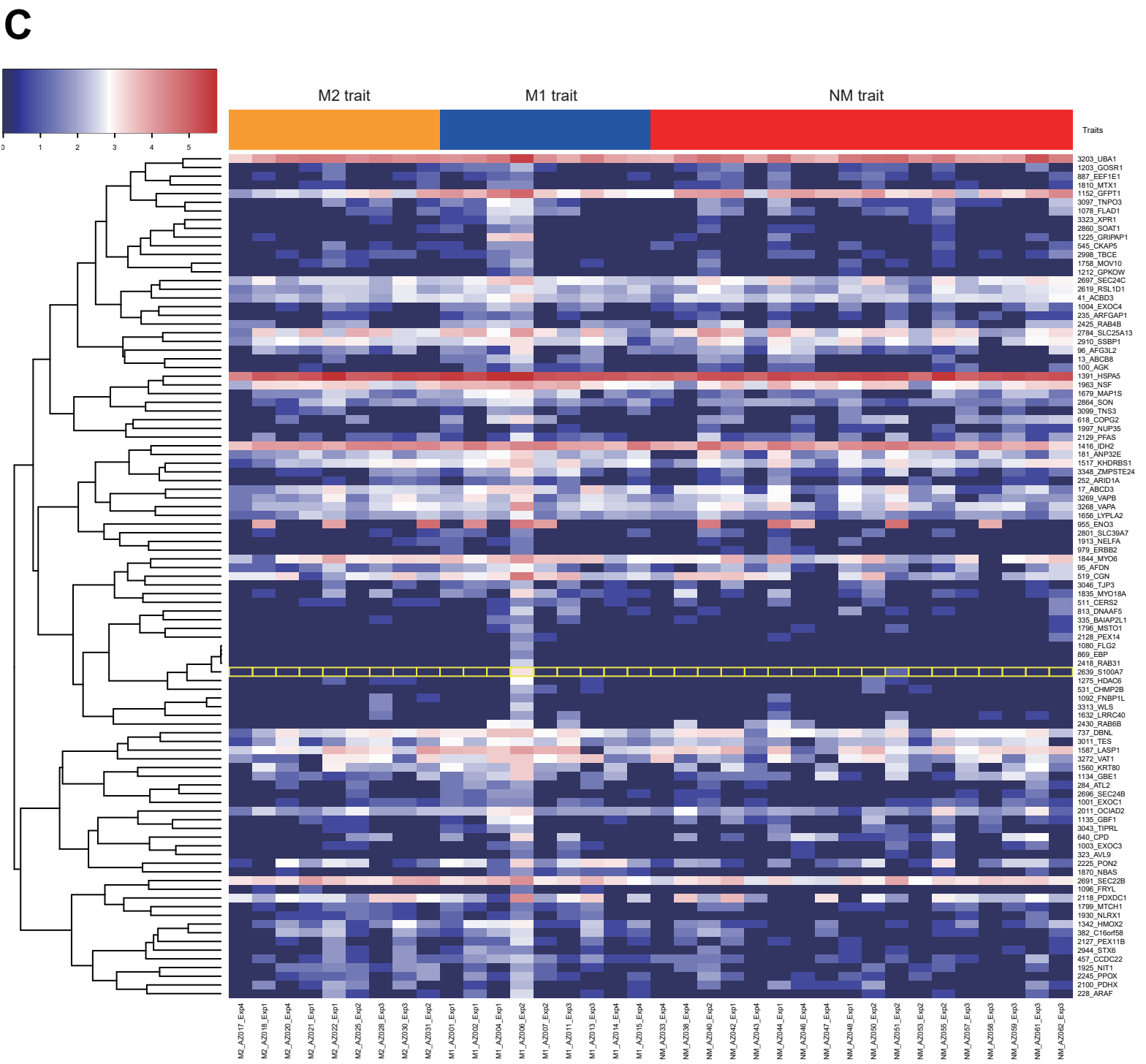
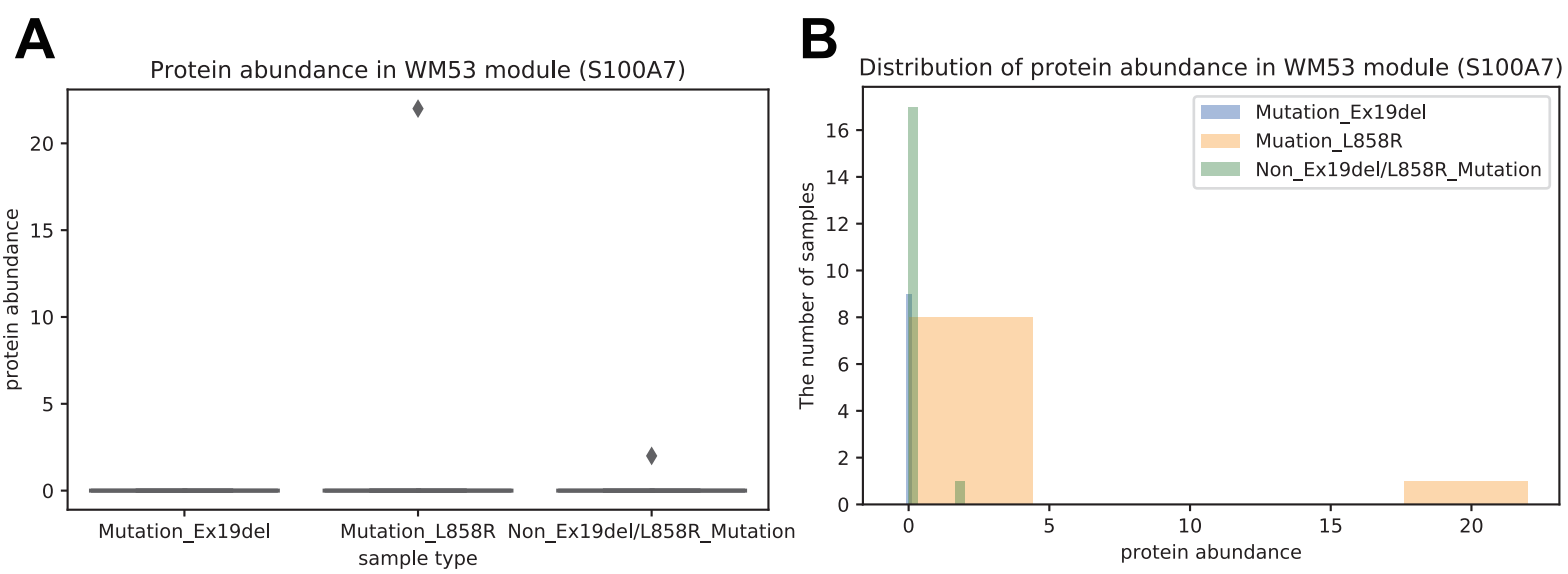
**B**

Distribution of protein abundance in WM39 module (RPS7)

**C**



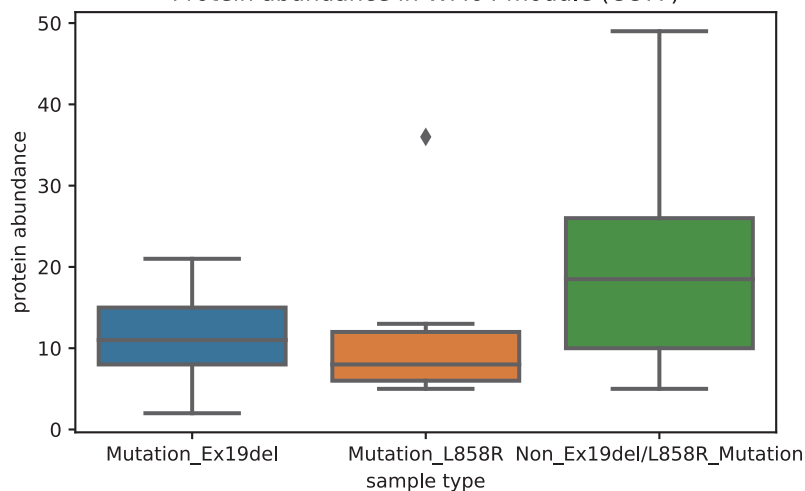




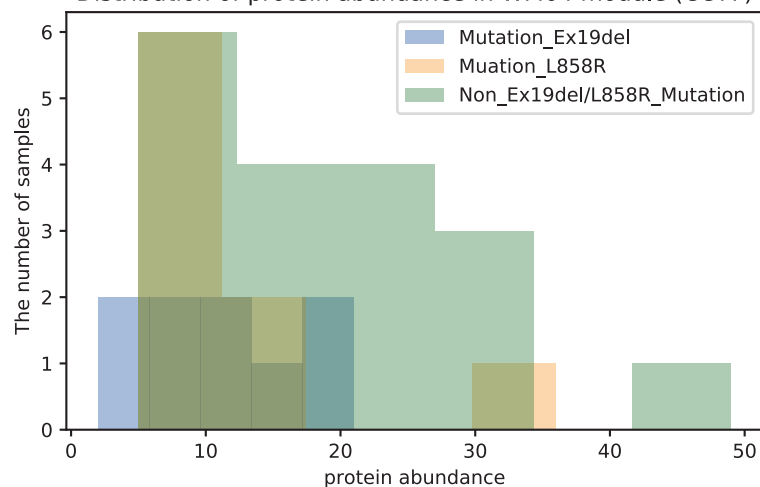
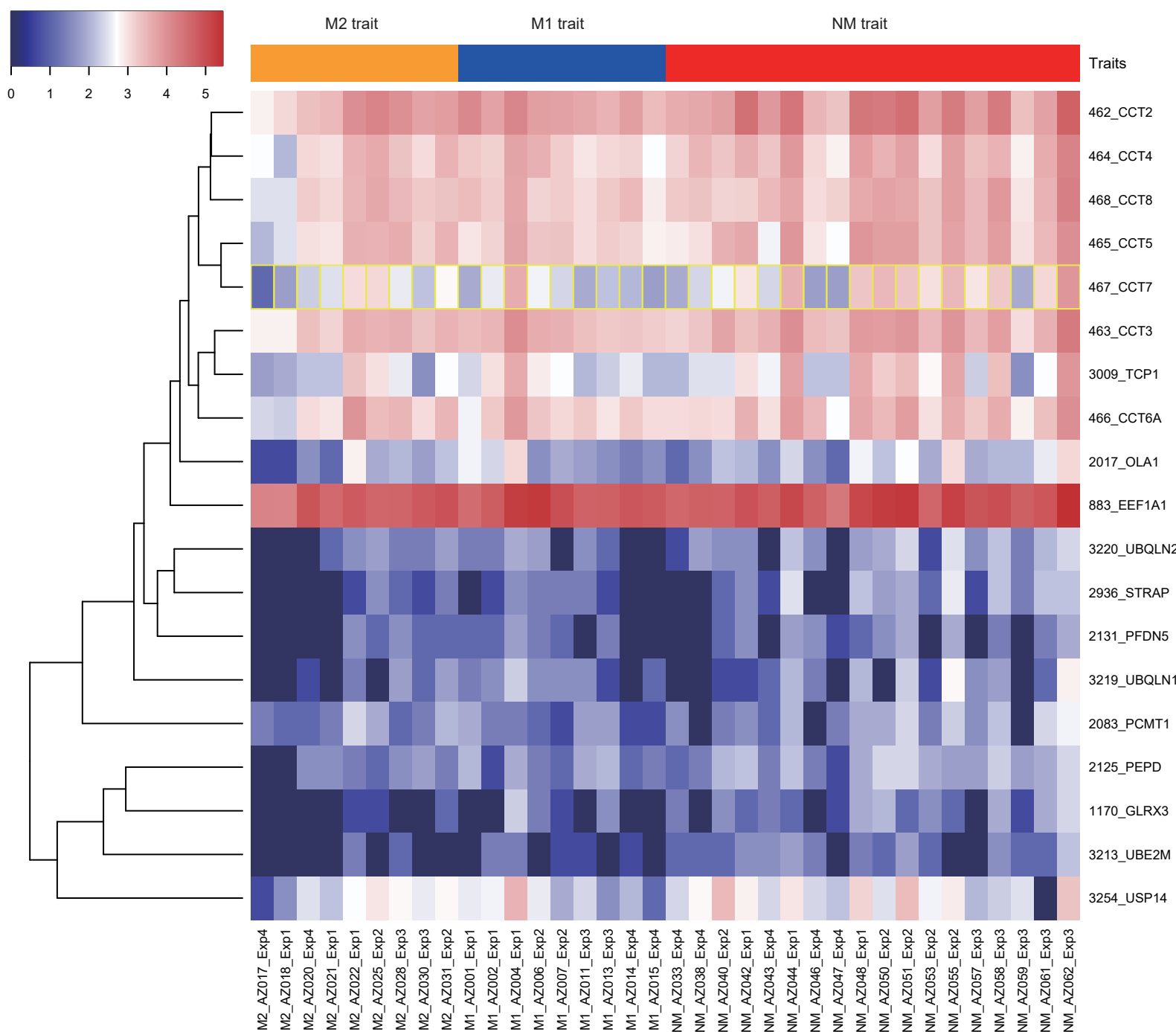
WM53

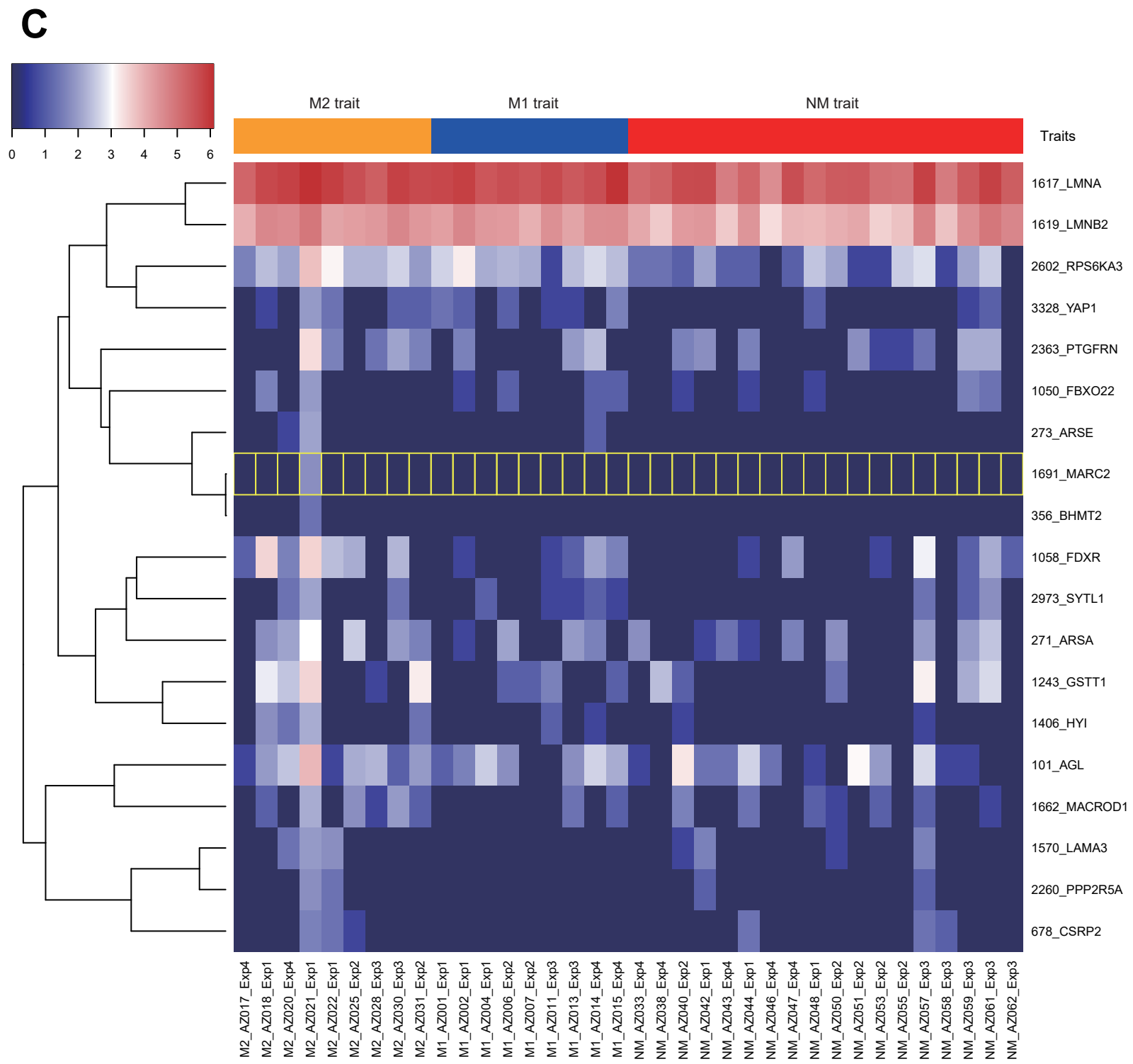
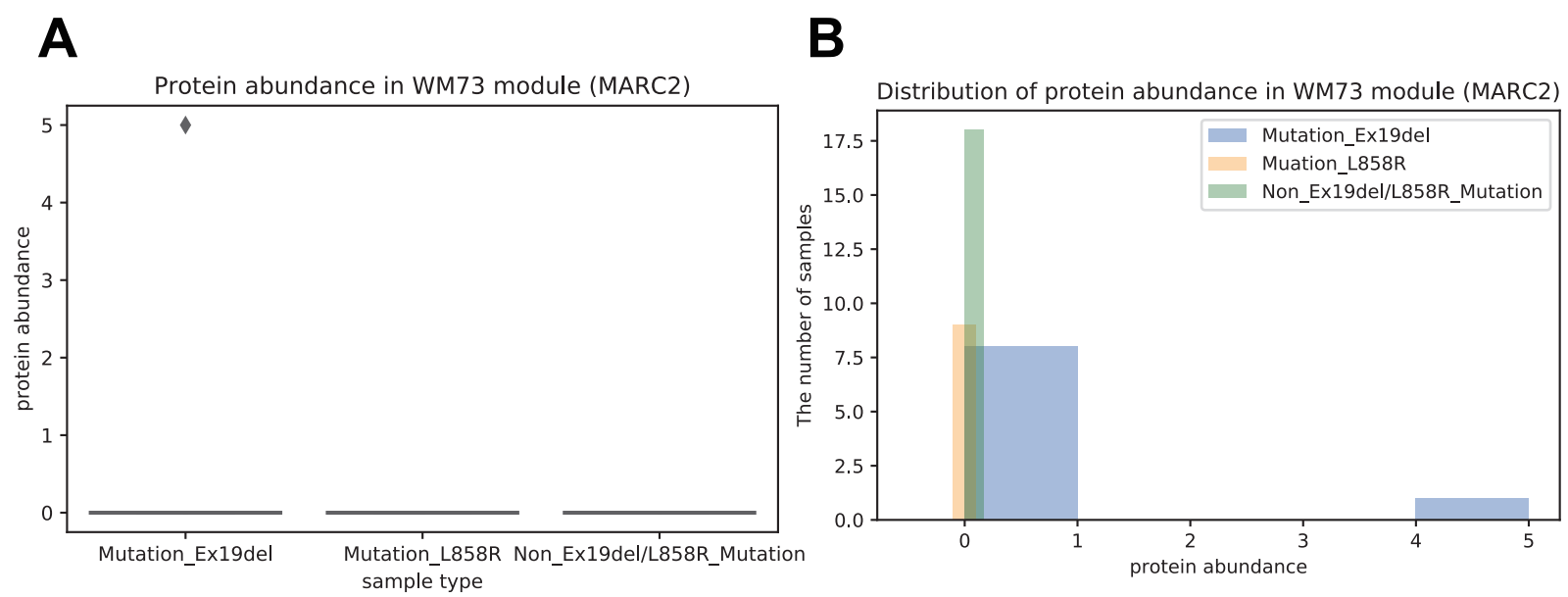
A

Protein abundance in WM64 module (CCT7)

**B**

Distribution of protein abundance in WM64 module (CCT7)

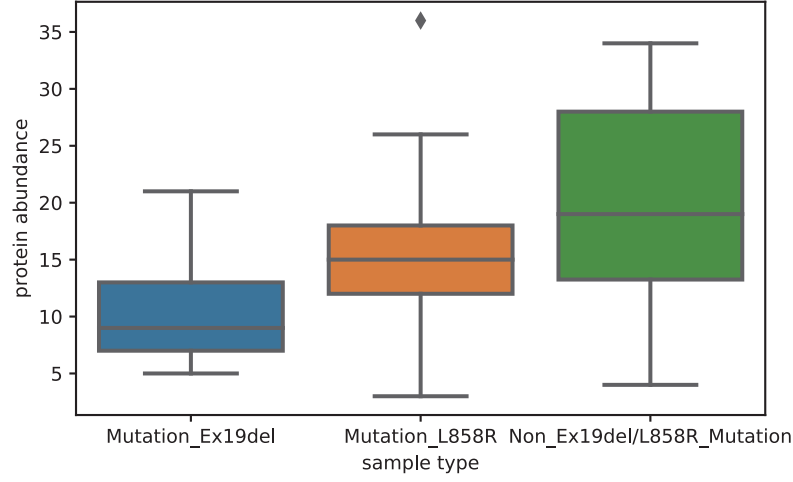
**C**



WM73

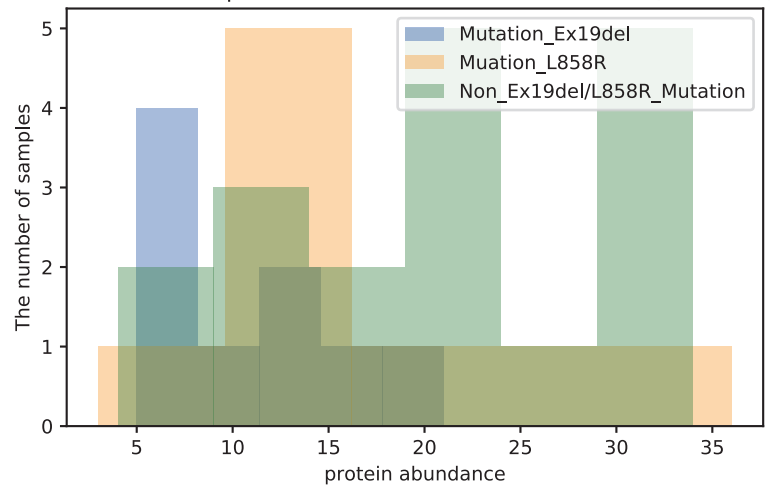
A

Protein abundance in WM75 module (ATP6V1A)



B

Distribution of protein abundance in WM75 module (ATP6V1A)



C

