

Supplementary Tables

Supplementary Table 1. IgG and TAb response in all groups according to gender and age.

All patients (N=912)		Median Ab		Interquartile range (IQR)		95% Confidence Interval (CI)	
		IgG (Ind)	TAbs (QUAL)	IgG (Ind)	TAbs (QUAL)	IgG (Ind)	TAbs (QUAL)
Gender (N=912)	Male (N=719, 78.84%)	29323	91063	14033-58393	47791-127784	38595.5-43734.7	84283.77-91460.89
	Female (N=193, 21.16%)	25427	68191	5760-54918	19766-114480	31078.19-41344.05	64720.99-79340.32
Age (N=906)	≥60 (N=79, 8.72%)	27059	85102	13282-59668	34708-111430	33949.26-51970.87	67696.24-88850.58
	<60 (N=827, 91.28%)	28450	88051	12412-57277	41413-85090	37505.37-42271.84	81660.98-88519.38
Vaccinated (N=771, 84.54%)							
Gender (N=771)	Male (N=637, 82.62%)	32842	100009	16518-59894	56951-132506	41243.73-46733.45	90375.75-97585.07
	Female (N=134, 17.38%)	30317	93969	16847-59480	47404-123048	37364.56-50039.53	78758.35-95520.01
Age (N=766)	≥60 (N=46, 6.00%)	45237	104355	22713-97667	80498-138892	44454.41-70613.42	86101.37-112150.19
	<60 (N=720, 93.99%)	31926	97149	16565-59013	55155-131153	40586.15-45685.08	88993.09-95879.14
Unvaccinated (N=73, 8%)							
Gender (N=73)	Male (N=45, 61.64%)	4431	11283	1879-9841	4120-31380	5366.535-17014.443	14165.38-36176.62
	Female (N=28, 38.36%)	3521	11514	2092-4539	8208-17552	1690.376-9530.267	7378.428-26580.786
Age (N=73)	≥60 (N=9, 12.33%)	8915	16662	3140-15947	10361-27987	-3489.198 – 43876.087	3189.865-56801.246
	<60 (N=64, 87.67%)	3682	10716	1881-7063	5202-19961	4188.050-10778.200	12800.77-29016.86

Naturally infected (N=68, 7.46%)							
Gender (N=68)	Male (N=37, 54.41%)	25126	61572	9654-42952	25589-91931	20176.70- 37845.03	44374.01- 73571.12
	Female (N=31, 45.59%)	23705	66409	4810-42192	20241-82024	19716.69- 43224.15	41554.08- 71338.69
Age (N=67)	≥60 (N=24, 35.82%)	19689	66534	8778-29329	28376-83199	15748.28- 31380.39	42435.06- 70386.02
	<60 (N=43, 64.18%)	23889	50281	6020-52543	18015-88096	23489.66- 44013.18	43249.33- 71979.09

Supplementary Table 2. IgG and TAb response in all groups according to individual comorbidities.

All patients (N= 912)		Median Ab		Interquartile range (IQR)		95% Confidence Interval (CI)	
		IgG (Ind)	TAb (QUAL)	IgG (Ind)	TAb (QUAL)	IgG (Ind)	TAb (QUAL)
Comorbidities	Diabetes (N=152, 16.67%)	36740	99946	17040-74699	56385-133014	42180.83-54177.06	86109.33-102056.07
	Hypertension (N=168, 18.42%)	37276	98054	15513-77890	36981-127943	43649.81-56069.63	79211.72-94948.60
	Heart Disease (N=40, 4.39%)	32130	91931	16365-60167	45889-113206	34337.20-58916.50	66691.43-98350.38
	Kidney Disease (N=73, 8%)	28364	82035	9577-59005	23962-121172	33720.30-51202.17	67048.74-92103.12
	Cancer (N=2, 0.22%)	50252	87190	31091-69412	75029-99350	-436669.3-537172.3	-221844.5-396223.5
	Autoimmune Disease (N=73, 8%)	27813	93635	12427-58390	42725-115311	30848.57-46817.89	74058.37-97504.89
	Healthy (N=585, 64.14%)	26823	84424	10967-52615	40932-124837	34438.08-39855.99	79373.80-87406.25
Vaccinated (N=771)							
Comorbidities	Diabetes (N=124, 16.08%)	45106	110201	23093-88529	72698-138205	46867.51-60259.96	96049.29-112606.63
	Hypertension (N=140, 18.16%)	47555	108980	23452-90643	64899-134482	49297.74-62978.80	89660.55-105701.92

	Heart Disease (N=33, 4.28%)	35671	98054	18095-89533	49720-121172	35743.15-64816.97	72810.5-107554.9
	Kidney Disease (N=52, 6.74%)	50501	109567	24474-88485	75768-136824	43384.04-63892.27	89830.54-114506.77
	Cancer (N=2, 0.26%)	50252	87190	31091-69412	75029-99350	-436669.3-537172.3	-221844.5-396223.5
	Autoimmune Disease (N=61, 7.91%)	28393	97039	12969-58974	54137-115622	32296.75-49839.77	79280.69-103494.03
	Healthy (N=506, 65.63%)	28742	92385	15093-55651	53673-129255	37363.58-43182.91	86386.48-94535.23
Unvaccinated (N=73)							
Comorbidities	Diabetes (N=9, 12.33%)	3869	20962	3140-8915	12821-27077	3015.144-11134.856	4672.319-57451.458
	Hypertension (N=10, 13.69%)	4738	8610	3730-10280	3144-15881	2170.974-15535.826	1267.443-27140.157
	Heart Disease (N=3, 4.11%)	8748	10361	4888-20788	6726-18719	-27000.66-55403.99	-17041.58-44061.58
	Kidney Disease (N= 18, 24.66%)	4738	15580	3608-13620	5649-22522	2391.449-24983.440	8227.88-34487.68
	Autoimmune Disease (N=5, 6.85%)	2063	10132	1838-9224	5408-38854	-24185.04-62421.04	-48289.29-145720.09
	Healthy (N= 47, 64.38%)	3503	11283	1880-6969	6602-19644	3460.583-9521.077	12396.75-28789.50
Naturally infected (N=68)							
Comorbidities	Diabetes (N=19, 27.94%)	26236	50281	16260-40240	28476-83470	19244.85-45201.15	39483.49-73579.78
	Hypertension (N=18, 26.47%)	15830	33152	7032-30856	11661-67847	12076.58-34841.53	26783.33-62267.23
	Heart Disease (N=4, 5.88%)	32130	91931	26236-60167	61572-100559	10299.62-73641.98	21991.68-124727.52
	Kidney Disease (N=3, 4.41%)	26236	28645	16192-28982	17395-52845	-12081.15-54822.48	-52722.02-127277.35
	Autoimmune Disease (N=7, 10.29%)	23705	71876	6522-52543	29743-89817	2699.017-64178.698	23811.13-103004.01
	Healthy (N= 32, 47.05%)	25761	67546	4961-43285	16720-96188	20285.69-44413.06	45592.41-80270.78

Supplementary Table 3. Pairwise comparisons between different comorbid patient groups for IgG and TAb response for all four groups.

All patients						
Comparison groups	IgG (Ind)			Tab (QUAL)		
	Z-value	P-value	P-adj	Z-value	P-value	P-adj
Cancer - Diabetes	-0.0615	0.9509	1	-0.2383	0.8117	1
Cancer - Heart Disease	0.0127	0.9897	1	0.1070	0.9148	1
Cancer - Hypertension	-0.0586	0.9532	1	-0.0615	0.9509	1
Cancer - Kidney Disease	0.2122	0.8319	1	0.1359	0.8919	1
Cancer - Healthy	0.3555	0.7221	1	0.0275	0.9781	1
Cancer - Autoimmune Disease	0.2868	0.7742	1	0.0051	0.9960	1
Diabetes - Heart Disease	0.2987	0.7651	1	1.3906	0.1643	1
Diabetes - Hypertension	0.0188	0.9849	1	1.1241	0.2610	1
Diabetes - Kidney Disease	1.3757	0.1688	1	1.8752	0.0608	1
Diabetes - Healthy	3.2476	0.0011	0.0244	2.0767	0.0378	0.7943
Diabetes - Autoimmune Disease	1.7513	0.0798	1	1.2164	0.2238	1
Heart Disease - Hypertension	-0.2897	0.7720	1	-0.6894	0.4906	1
Heart Disease - Kidney Disease	0.7260	0.4678	1	0.1012	0.9194	1
Heart Disease - Healthy	1.4842	0.1377	1	-0.3552	0.7224	1
Heart Disease - Autoimmune Disease	0.9979	0.3183	1	-0.3757	0.7072	1
Hypertension - Kidney Disease	1.3825	0.1668	1	1.0072	0.3138	1
Hypertension - Healthy	3.3537	0.0007	0.0167	0.7224	0.4700	1
Hypertension - Autoimmune Disease	1.7640	0.0777	1	0.3381	0.7353	1
Kidney Disease - Healthy	0.8036	0.4216	1	-0.6280	0.5300	1
Kidney Disease - Autoimmune Disease	0.3231	0.7465	1	-0.5667	0.5709	1
Healthy - Autoimmune Disease	-0.3727	0.7093	1	-0.1277	0.8984	1
Vaccinated						
Cancer - Diabetes	-0.3240	0.7459	1	-0.6119	0.5406	1
Cancer - Heart Disease	-0.1278	0.8983	1	-0.1811	0.8563	1
Cancer - Hypertension	-0.3625	0.7170	1	-0.4431	0.6577	1
Cancer - Kidney Disease	-0.3426	0.7319	1	-0.5630	0.5734	1
Cancer - Healthy	0.1753	0.8608	1	-0.2362	0.8133	1
Cancer - Autoimmune Disease	0.1502	0.8806	1	-0.2027	0.8394	1
Diabetes - Heart Disease	0.7041	0.4814	1	1.5534	0.1203	1
Diabetes - Hypertension	-0.2201	0.8258	1	0.9780	0.3281	1
Diabetes - Kidney Disease	-0.0961	0.9234	1	0.1843	0.8538	1
Diabetes - Healthy	3.5446	0.0004	0.0083	2.6827	0.0073	0.1534

Diabetes - Autoimmune Disease	2.1669	0.0302	0.6351	1.8575	0.0632	1
Heart Disease - Hypertension	-0.8530	0.3937	1	-0.9492	0.3425	1
Heart Disease - Kidney Disease	-0.6910	0.4896	1	-1.2304	0.2186	1
Heart Disease - Healthy	1.2093	0.2265	1	-0.1974	0.8435	1
Heart Disease - Autoimmune Disease	0.9300	0.3524	1	-0.0638	0.9491	1
Hypertension - Kidney Disease	0.0694	0.9447	1	-0.5551	0.5788	1
Hypertension - Healthy	4.0037	0.0001	0.0013	1.5521	0.1206	1
Hypertension - Autoimmune Disease	2.3858	0.0170	0.3579	1.1074	0.2681	1
Kidney Disease - Healthy	2.5480	0.0108	0.2275	1.6368	0.1017	1
Kidney Disease - Autoimmune Disease	1.8796	0.0602	1	1.3777	0.1683	1
Healthy - Autoimmune Disease	-0.1203	0.9042	1	0.1599	0.8729	1
Unvaccinated						
Diabetes - Heart Disease	0.0218	0.9826	1	0.8396	0.4011	1
Diabetes - Hypertension	-0.2359	0.8135	1	1.6462	0.0997	1
Diabetes - Kidney Disease	-0.3084	0.7578	1	0.8792	0.3793	1
Diabetes - Healthy	1.1972	0.2312	1	1.2974	0.1945	1
Diabetes - Autoimmune Disease	0.7088	0.4784	1	0.5536	0.5798	1
Heart Disease - Hypertension	-0.1868	0.8518	1	0.2987	0.7652	1
Heart Disease - Kidney Disease	-0.2252	0.8218	1	-0.3220	0.7475	1
Heart Disease - Healthy	0.7070	0.4795	1	-0.1472	0.8830	1
Heart Disease - Autoimmune Disease	0.5214	0.6021	1	-0.3436	0.7311	1
Hypertension - Kidney Disease	-0.0443	0.9647	1	-1.0077	0.3136	1
Hypertension - Healthy	1.5621	0.1183	1	-0.8164	0.4143	1
Hypertension - Autoimmune Disease	0.9197	0.3577	1	-0.8172	0.4138	1
Kidney Disease - Healthy	2.0257	0.0428	0.6420	0.4082	0.6832	1
Kidney Disease - Autoimmune Disease	1.0311	0.3025	1	-0.0992	0.9210	1
Healthy - Autoimmune Disease	-0.0856	0.9318	1	-0.3471	0.7285	1
Naturally infected						
Diabetes - Heart Disease	-0.6644	0.5064	1	-0.3250	0.7452	1
Diabetes - Hypertension	1.1121	0.2661	1	1.0350	0.3007	1
Diabetes - Kidney Disease	0.4107	0.6813	1	0.7892	0.4300	1
Diabetes - Healthy	0.5064	0.6126	1	-0.1383	0.8900	1
Diabetes - Autoimmune Disease	0.2710	0.7864	1	-0.3457	0.7295	1
Heart Disease - Hypertension	1.3230	0.1858	1	0.9393	0.3476	1
Heart Disease - Kidney Disease	0.8126	0.4164	1	0.8760	0.3810	1
Heart Disease - Healthy	0.9658	0.3342	1	0.2616	0.7936	1
Heart Disease - Autoimmune Disease	0.7743	0.4388	1	0.0414	0.9670	1
Hypertension - Kidney Disease	-0.1774	0.8592	1	0.2403	0.8101	1

Hypertension - Healthy	-0.7438	0.4570	1	-1.2914	0.1965	1
Hypertension - Autoimmune Disease	-0.5523	0.5808	1	-1.1075	0.2681	1
Kidney Disease - Healthy	-0.1797	0.8574	1	-0.8783	0.3798	1
Kidney Disease - Autoimmune Disease	-0.1961	0.8445	1	-0.9320	0.3513	1
Healthy - Autoimmune Disease	-0.0644	0.9487	1	-0.2704	0.7869	1

Supplementary Table 4. IgG and TAb response in the vaccinated-group over definite time points (months).

Months	Population (N=711)	Median Ab		Interquartile range (IQR)		95% Confidence Interval (CI)	
		IgG (Ind)	TAbs (QUAL)	IgG (Ind)	TAbs (QUAL)	IgG (Ind)	TAbs (QUAL)
0	N=48, 6.75%	38469	104344	20786- 82860	48081- 150106	40563.85- 63364.69	81317.38- 112170.29
1	N=221, 31.08%	40811	113963	25162- 68579	67262- 141376	46029.49- 55005.25	98774.25- 110638.64
2	N=150, 21.09%	34243	97159	15994- 57751	54892- 126922	36583.05- 47680.29	83645.36- 98467.00
3	N=81, 11.39%	29967	89903	17787- 59005	60173- 114982	36131.78- 53279.38	77658.77- 95571.09
4	N=116, 16.31%	28825	95962	12568- 71773	50788- 131304	37341.76- 51887.55	79718.27- 97199.82
5	N=82, 11.53%	22845	77115	9654- 37453	45566- 113798	23275.43- 34955.23	74852.92- 96808.83
6	N=6, 0.84%	22862	76113	14386- 30840	44231- 119679	8105.92- 35335.413	22271.22- 139635.45
7	N=3, 0.42%	6901	25893	5426- 16980	25176- 55498	-18606.23 – 43879.56	-40814.04 – 131116.71
8	N=4, 0.56%	10656	45332	5573- 20553	34179- 63768	-7283.81 – 38223.31	3014.14 – 102215.85

Supplementary Table 5. Pairwise comparisons between definite time points (months) for IgG and TAb response in the vaccinated-group.

Comparison groups		IgG (Ind)		TAb (QUAL)	
Group1 (Month)	Group2 (Month)	P-value	P-adj	P-value	P-adj
Zero	One	0.823	1	0.451	1
Zero	Two	0.171	1	0.388	1
Zero	Three	0.296	1	0.163	1
Zero	Four	0.191	1	0.27	1
Zero	Five	0.001	0.037	0.164	1
Zero	Six	0.08	1	0.582	1
Zero	Seven	0.075	1	0.1	1
Zero	Eight	0.042	1	0.13	1
One	Two	0.006	0.2	0.007	0.219
One	Three	0.037	0.952	0.000896	0.031
One	Four	0.008	0.239	0.002	0.074
One	Five	7.11×10^{-09}	2.56×10^{-07}	0.000602	0.022
One	Six	0.021	0.596	0.248	1
One	Seven	0.022	0.596	0.035	1
One	Eight	0.014	0.426	0.028	0.88
Two	Three	0.907	1	0.297	1
Two	Four	0.819	1	0.621	1
Two	Five	0.002	0.081	0.218	1
Two	Six	0.147	1	0.609	1
Two	Seven	0.07	1	0.107	1
Two	Eight	0.079	1	0.094	1
Three	Four	0.586	1	0.719	1
Three	Five	0.007	0.215	0.497	1
Three	Six	0.194	1	0.874	1
Three	Seven	0.078	1	0.087	1
Three	Eight	0.076	1	0.087	1
Four	Five	0.019	0.551	0.55	1
Four	Six	0.311	1	0.692	1
Four	Seven	0.085	1	0.125	1
Four	Eight	0.097	1	0.13	1
Five	Six	0.875	1	0.875	1
Five	Seven	0.171	1	0.137	1
Five	Eight	0.255	1	0.148	1
Six	Seven	0.548	1	0.381	1
Six	Eight	0.61	1	0.476	1
Seven	Eight	0.857	1	0.857	1

Supplementary Table 6. IgG and TAb response and pairwise comparisons between three vaccinated sub-groups.

Groups	IgG (Ind)			Comparison group	P-value
	Median Ab	Interquartile range (IQR)	95% Confidence Interval (CI)		
Uninfected	27813	14232-51899	34215.07-40305.30	Postinfected	1.99×10 ⁻⁴
Preinfected	40703	24731-83788	47433.03-60612.85	Uninfected	3.12×10 ⁻⁶
Postinfected	51527	24814-93928	47918.59-72075.37	Preinfected	0.5711
TAb (QUAL)					
Uninfected	91063	49479-127235	83778.94-93322.09	Postinfected	0.2010
Preinfected	109819	71745-135179	96472.37-111531.17	Uninfected	1.82×10 ⁻³
Postinfected	109787	74716-126462	85872.09-108851.17	Preinfected	0.4744

Supplementary Table 7. Hierarchical cluster analysis and calculated Z-scores for IgG and TAb in patients with Diabetes.

Patients ID	IgG Z-score				TAb Z-score			
	Cluster	t1	t2	t3	Cluster	t1	t2	t3
140	Cluster-1	0.538398	-1.15384	0.615445	Cluster-1	1.153851	-0.53857	-0.61528
275	Cluster-2	1.154687	-0.58224	-0.57245	Cluster-1	1.141059	-0.72379	-0.41727
281	Cluster-1	-0.46294	-0.68465	1.147584	Cluster-1	1.153806	-0.61626	-0.53754
297	Cluster-2	1.154665	-0.58523	-0.56944	Cluster-1	1.137339	-0.74143	-0.39591
300	Cluster-2	1.14919	-0.47701	-0.67218	Cluster-1	0.838093	0.268849	-1.10694
324	Cluster-2	1.153655	-0.53428	-0.61937	Cluster-1	1.14128	-0.72266	-0.41862
376	Cluster-2	1.140342	-0.41296	-0.72738	Cluster-1	0.998736	0.002523	-1.00126
470	Cluster-3	-1.15287	0.520083	0.632783	Cluster-2	-0.66554	-0.48442	1.149956
482	Cluster-1	-0.4503	-0.69568	1.145977	Cluster-2	-0.3331	-0.79094	1.124037
550	Cluster-2	1.154648	-0.56781	-0.58684	Cluster-1	1.120269	-0.80251	-0.31776
620	Cluster-2	1.154484	-0.55789	-0.59659	Cluster-1	1.153629	-0.61989	-0.53374
764	Cluster-2	1.154044	-0.61073	-0.54331	Cluster-1	1.137763	-0.73953	-0.39823
853	Cluster-1	-0.51838	-0.63438	1.152757	Cluster-2	-0.55753	-0.59695	1.154476
860	Cluster-2	1.147383	-0.46129	-0.68609	Cluster-1	1.154218	-0.5482	-0.60602
914	Cluster-1	-0.56977	-0.58489	1.154668	Cluster-2	-0.54174	-0.61225	1.153983
935	Cluster-1	-0.83237	-0.2769	1.109271	Cluster-3	-1.02301	0.975279	0.047733
974	Cluster-2	1.154254	-0.60494	-0.54932	Cluster-1	0.92736	-1.0595	0.13214
976	Cluster-1	-0.22373	-0.86919	1.092914	Cluster-2	-0.25768	-0.84594	1.103623

984	Cluster-2	1.149732	-0.66753	-0.4822	Cluster-1	1.154699	-0.57922	-0.57548
992	Cluster-3	-1.11471	0.818241	0.296472	Cluster-1	1.124016	-0.79101	-0.33301
1015	Cluster-3	-1.14048	0.726676	0.413808	Cluster-3	-1.13564	0.386856	0.74878
1091	Cluster-2	1.152409	-0.63917	-0.51324	Cluster-1	1.154	-0.61182	-0.54218
1105	Cluster-1	-0.5164	-0.63623	1.152626	Cluster-2	-0.69635	-0.44953	1.145874
1106	Cluster-2	1.121435	-0.79902	-0.32242	Cluster-1	1.127662	-0.3487	-0.77897
1118	Cluster-2	1.116126	-0.81438	-0.30175	Cluster-2	-0.09211	-0.95076	1.042868
1122	Cluster-2	1.049503	-0.10773	-0.94177	Cluster-1	1.148657	-0.67651	-0.47215
1136	Cluster-1	0.090485	-1.04217	0.951682	Cluster-1	1.097912	-0.8587	-0.23921
1138	Cluster-3	-1.15133	0.499367	0.651967	Cluster-2	-0.24012	-0.85808	1.098198
1158	Cluster-2	1.147092	-0.45894	-0.68815	Cluster-1	1.13578	-0.38761	-0.74817
1176	Cluster-2	0.734286	0.40462	-1.13891	Cluster-1	1.140644	-0.41477	-0.72588
1178	Cluster-2	0.318657	0.801839	-1.1205	Cluster-3	-0.45419	1.146488	-0.6923

Supplementary Table 8. Hierarchical cluster analysis and calculated Z-scores for IgG and TAb in patients with Kidney Disease.

Patients ID	IgG Z-score				TAb Z-score			
	Cluster	t1	t2	t3	Cluster	t1	t2	t3
219	Cluster-1	-1.11848	0.807728	0.310756	Cluster-1	-1.14466	0.7039	0.440763
466	Cluster-2	1.154662	-0.56913	-0.58553	Cluster-2	1.144764	-0.44148	-0.70329
474	Cluster-1	-0.44625	-0.69918	1.145429	Cluster-1	-0.03081	-0.98424	1.015049
477	Cluster-2	1.154693	-0.57366	-0.58103	Cluster-2	1.144674	-0.44084	-0.70383
568	Cluster-2	1.126741	-0.34464	-0.7821	Cluster-2	1.121573	-0.32297	-0.7986
647	Cluster-1	-1.12008	0.316996	0.803081	Cluster-1	-1.13792	0.399097	0.738823
657	Cluster-1	-1.05085	0.939894	0.110957	Cluster-1	-1.14298	0.713616	0.429363
663	Cluster-1	-1.04806	0.943766	0.104293	Cluster-1	-1.15224	0.641364	0.510877
669	Cluster-2	1.119176	-0.31345	-0.80573	Cluster-2	1.120649	-0.31926	-0.80138
670	Cluster-1	-1.14633	0.69334	0.452992	Cluster-1	-1.14479	0.441638	0.703149
673	Cluster-2	1.152354	-0.51246	-0.63989	Cluster-2	1.144109	-0.43692	-0.70719
674	Cluster-3	0.499554	0.651796	-1.15135	Cluster-2	0.785515	0.340199	-1.12571
678	Cluster-1	-1.06093	0.925201	0.135732	Cluster-1	-1.13961	0.730951	0.408659
915	Cluster-1	-0.97236	1.025522	-0.05316	Cluster-2	1.113346	-0.29145	-0.8219
944	Cluster-2	1.147357	-0.46107	-0.68628	Cluster-3	-0.52534	1.153183	-0.62784
1004	Cluster-2	1.149097	-0.47615	-0.67294	Cluster-2	0.919528	0.145092	-1.06462
1006	Cluster-2	1.124549	-0.33525	-0.7893	Cluster-1	-1.02598	0.054155	0.971822
1010	Cluster-2	1.140971	-0.41674	-0.72424	Cluster-3	-0.1584	1.069746	-0.91135
1013	Cluster-1	-0.55892	-0.59559	1.154506	Cluster-1	-0.50103	-0.65044	1.151474
1016	Cluster-1	-0.56315	-0.59143	1.154585	Cluster-1	-0.73426	-0.40465	1.138912
1017	Cluster-1	-1.11385	0.82055	0.293304	Cluster-1	-1.14951	0.669448	0.480064

1018	Cluster-2	1.126183	-0.34222	-0.78396	Cluster-2	0.887721	0.195642	-1.08336
1019	Cluster-2	1.12408	-0.33328	-0.7908	Cluster-2	0.786706	0.338645	-1.12535
1020	Cluster-1	-0.5806	-0.5741	1.154694	Cluster-1	-0.63534	-0.51735	1.152689
1021	Cluster-1	-0.90024	-0.17612	1.076361	Cluster-1	-1.04762	0.103251	0.944369
1022	Cluster-1	-1.07158	0.908328	0.163254	Cluster-2	0.711912	0.431373	-1.14328
1023	Cluster-2	0.925823	-1.06052	0.1347	Cluster-3	-0.53772	1.153814	-0.61609
1024	Cluster-3	0.432956	0.710567	-1.14352	Cluster-1	-1.15036	0.661831	0.488526
1026	Cluster-2	1.146617	-0.45519	-0.69143	Cluster-2	1.120159	-0.31732	-0.80284

Supplementary Table 9. Patient-specific temporal variation of IgG and TAb levels in patients with Diabetes and Kidney Disease.

Statistical Parameters		Diabetic patients (N=31)			Kidney Disease patients (N= 29)		
		Cluster-1 (C1)	Cluster-2 (C2)	Cluster-3 (C3)	Cluster-1 (C1)	Cluster-2 (C2)	Cluster-3 (C3)
Median Ab (t1)	IgG (Ind)	-0.4629	1.1495	-1.146	-1.0495	1.1410	0.4663
	TAb (QUAL)	1.1392	-0.4374	-1.0230	-1.1387	1.1168	-0.5253
Interquartile range (IQR) (t1)	IgG (Ind)	-0.5184 – -0.2237	1.1262 – 1.1542	-1.152 – -1.134	-1.1033 – -0.6605	1.1245 – 1.1491	0.4496 – 0.4829
	TAb (QUAL)	1.1231 – 1.1537	-0.5845 – -0.2532	-1.0793 – -0.7386	-1.1447 – -0.8071	0.8625 – 1.1272	-0.5315 – -0.3419
95% Confidence Interval (CI) (t1)	IgG (Ind)	-0.6434 – -0.0109	0.9668 – 1.1783	-1.1679 – -1.1117	-1.0579 – -0.7637	1.0859 – 1.1590	0.0431 – 0.8893
	TAb (QUAL)	1.0670 – 1.1469	-0.6083 – -0.2376	-1.7783 – 0.0364	-1.1351 – -0.7415	0.8929 – 1.1072	-0.9425 – 0.1282
Median Ab (t2)	IgG (Ind)	-0.6846	-0.5628	0.6234	0.7505	-0.4552	0.6812
	TAb (QUAL)	-0.6181	-0.7016	0.9753	0.4204	-0.3043	1.153
Interquartile range (IQR) (t2)	IgG (Ind)	-0.8692 – -0.8692	-0.6093 – -0.4595	0.5149 – 0.7496	-0.4746 – 0.9210	-0.5125 – -0.3422	0.6665 – 0.6959
	TAb (QUAL)	-0.7400 – -0.5076	-0.8490 – -0.5688	0.6811 – 1.0609	-0.2900 – 0.6675	-0.3514 – 0.2313	1.111 – 1.153
95% Confidence Interval (CI) (t2)	IgG (Ind)	-0.9313 – -0.5304	-0.6304 – -0.2223	0.3921 – 0.8900	-0.0649 – 0.7427	-0.5956 – -0.3572	0.3078 – 1.0545
	TAb (QUAL)	-0.7149 – -0.4359	-0.8549 – -0.5422	-0.1536 – 1.8260	-0.1588 – 0.5249	-0.3153 – 0.1287	1.0054 – 1.2457
Median Ab (t3)	IgG (Ind)	1.1460	-0.5917	0.5233	0.3818	-0.6914	-1.147
	TAb (QUAL)	-0.5356	1.135	0.0477	0.7210	-0.8124	-0.6278

Interquartile range (IQR) (t3)	IgG (Ind)	1.0929 – 1.1526	-0.6876 – -0.5448	0.3845 – 0.6376	0.1426 – 1.1281	-0.7840 – -0.6399	-1.149 – -1.145
	TAb (QUAL)	-0.6429 – -0.3977	1.102 – 1.151	-0.3222 – 0.3982	0.4822 – 1.0042	-1.0939 – -0.7757	-0.7696 – -0.6220
95% Confidence Interval (CI) (t3)	IgG (Ind)	0.9211 – 1.1950	-0.7588 – -0.5336	0.2238 – 0.7737	0.2948 – 0.8490	-0.7953 – -0.4967	-1.1971 – -1.0977
	TAb (QUAL)	-0.6581 – -0.4050	1.0890 – 1.1541	-1.7553 – 1.8248	0.5838 – 0.9268	-1.0234 – -0.7901	-1.1337 – -0.3031