

Supplementary Table 1. Reactivities of IgG and IgM autoantibodies

Antigens	IgG reactivity (nfi)					IgM reactivity (nfi)				
	NC (n=20)	dry AMD (n=35)	P1	wet AMD (n=20)	P2 P3	NC (n=20)	dry AMD (n=35)	P1	wet AMD (n=20)	P2 P3
AGE-BSA	5621.4 ± 13499.4	2965.6 ± 4444.2		5716.1 ± 6264.7		1882.9 ± 1296.2	2233.9 ± 1850.8		4049.8 ± 4443.5	* *
alpha-1 Antichymotrypsin	15.1 ± 24.9	23.3 ± 26.2		30.3 ± 24.5		4.2 ± 3.9	2.9 ± 2.9		5.5 ± 5.2	*
alpha-1 Antitrypsin	207.5 ± 220.5	147.1 ± 173.4		268 ± 346.3		401.8 ± 223.7	581.7 ± 345.5	*	612 ± 339.5	*
alpha-1 Microglobulin	38.9 ± 30	67.5 ± 73.8		61.7 ± 38.2	*	31 ± 30.5	42 ± 39.3		65.3 ± 106.1	
Amyloid Beta	9 ± 8.3	5.9 ± 14.2		4.4 ± 6.6		3 ± 9.4	0.8 ± 4.7		3.5 ± 15.7	
Amyloid P	233.4 ± 201.9	193.8 ± 286.9		555.6 ± 962.9	*	10.5 ± 11.4	18.2 ± 24.3		31.3 ± 42.8	*
Annexin II	247.2 ± 309.7	219.9 ± 353.4		656.5 ± 730	**	265.1 ± 104.1	284.4 ± 163.9		438.2 ± 410.4	*
Annexin V	323.6 ± 545.6	265 ± 572.2		1850.8 ± 5610.2		517.2 ± 261	843.7 ± 494.2	**	949.7 ± 466.8	**
Apo B	43.5 ± 42.8	72.4 ± 41.7	*	92.5 ± 51.3	**	128.1 ± 133.6	152.7 ± 248.3		288 ± 273.5	*
Apo E	17.5 ± 10.8	17.2 ± 16.3		40.4 ± 21.3	** **	0.4 ± 1.2	0.6 ± 2.1		3.9 ± 7.2	* *
Apo E4	34.8 ± 39.7	45.3 ± 48.6		64.7 ± 33.5	*	3.6 ± 16	6.8 ± 24.4		18.7 ± 59.2	
Apo J	0 ± 0	5 ± 11.4	*	9.7 ± 14.6	**	0 ± 0	7.6 ± 32.3		0 ± 0	
ARPE-19 lysate	318.4 ± 592.5	247.9 ± 374		516.9 ± 633.6	*	335.8 ± 167	360.9 ± 288		587.7 ± 596.6	
beta-actin	0 ± 0	0 ± 0		0 ± 0		0 ± 0	0 ± 0		0 ± 0	
beta-Lactoglobulin A	44.7 ± 84.6	105.9 ± 352.4		114.9 ± 314		1.4 ± 1.5	3.2 ± 4.8		5.7 ± 6.7	**
BSA	2920.4 ± 7369.3	1235.7 ± 2263		1690.1 ± 2978.9		162.6 ± 81	187.7 ± 193.1		324.3 ± 374.1	
<i>C. pneumoniae</i>	418.5 ± 489.7	487.7 ± 811.3		1051.8 ± 1392.3		73.9 ± 49.3	105.6 ± 83.8		126.6 ± 153	
Calmodulin	19.3 ± 46.3	23 ± 43.2		24.2 ± 74.8		0.8 ± 0.9	0.9 ± 2.3		0.2 ± 0.4	**
Calreticulin	1629.8 ± 646.6	1780 ± 1057.3		1948.3 ± 875.1		404.9 ± 225.6	534.8 ± 335		677.8 ± 374.4	**
CEL-BSA	1121.5 ± 1533.5	878.9 ± 1581.5		3181.9 ± 6092.7	*	10 ± 33.5	30.7 ± 99.5		13.1 ± 58.6	
Ceruloplasmin	487.3 ± 638.7	481 ± 548.5		703.5 ± 901.3		599.3 ± 267.9	829 ± 468.1	*	1132.6 ± 556.9	** *
CFB	260 ± 400.3	229.2 ± 322.2		494.5 ± 569.6	*	346.4 ± 216.1	337.5 ± 257.4		550.9 ± 258.5	** **
CFH	1056.8 ± 3121.4	1085.7 ± 2505.6		1834.4 ± 2955.5		195.7 ± 126.6	161.1 ± 185.2		350 ± 208.1	** **
CK-BB	507.1 ± 634.6	364 ± 484.7		1136.3 ± 1730	*	204.3 ± 101.6	219.7 ± 166.2		393.2 ± 442	*
CML-BSA	1388.9 ± 4452.5	785.8 ± 2639.2		467.8 ± 580.1		72.4 ± 118.4	69.3 ± 87		104.7 ± 159.1	
CMV	3327 ± 3871.8	3444.9 ± 3602.8		3802.4 ± 4511.5		643 ± 321.9	1065.8 ± 647.5	**	4828.8 ± 16578.1	
Collagen V	72.7 ± 54.7	106.1 ± 50.7	*	139.9 ± 85.6	**	90.4 ± 73.7	116 ± 89.6		174.5 ± 179.8	
Collagen VI	148.8 ± 73.3	232.2 ± 139.3	*	267.5 ± 157.1	**	96.5 ± 94	77.5 ± 140.3		189.8 ± 192.2	*
Complement C3	430.8 ± 202.6	604.3 ± 215.3	**	658.1 ± 240.8	**	6239.6 ± 1017.8	6933.6 ± 1729.3		8015.7 ± 2012.2	** *
Complement C4	283.9 ± 141.6	539.6 ± 267.4	**	630.1 ± 265.4	**	1497.9 ± 716.4	1576.4 ± 1231.8		2826.1 ± 2751.5	* *
Complement C5	403.1 ± 448.7	440.6 ± 659.4		1092.4 ± 1429.2	* *	1316.2 ± 419.9	1813 ± 932.8	*	2432.5 ± 1203	** *
Complement C8	279.2 ± 838.8	314.3 ± 1224.4		1403.7 ± 2196	* *	1165.3 ± 224.2	1229.1 ± 456.8		1806.3 ± 735.1	** **
Complement C9	602 ± 714.8	592.3 ± 951.7		1602.8 ± 1912.2	* *	2695.3 ± 999.8	3565.6 ± 1817.4	*	4635.5 ± 2170.4	** *
CRP	1004.9 ± 1064.3	1128.8 ± 1436.5		2862.9 ± 3408.9	** **	1102.3 ± 454.8	1343.6 ± 759.5		1717.9 ± 951.2	*
Decorin	1314.2 ± 1858.6	1405.1 ± 1880.9		1784.1 ± 2439		151.7 ± 79.4	182 ± 127		229 ± 229.6	
Dermatan Sulfate	3.5 ± 3.5	3 ± 2.5		8.1 ± 10.5	**	0.4 ± 0.8	0.4 ± 0.6		0.5 ± 0.9	
DHA	15.2 ± 19.1	11.4 ± 56.7		69.1 ± 127.1	*	0 ± 0	0 ± 0		0 ± 0	
Factor X	42.5 ± 21.2	61.1 ± 44		107.9 ± 69.6	** **	900.4 ± 174.5	1030.7 ± 179.9	*	1140.6 ± 271.5	**
GAPDH	0 ± 0	0 ± 0		0 ± 0		0 ± 0	0 ± 0		0 ± 0	
Glutamine Synthetase	161.1 ± 94	153.5 ± 79.4		257.3 ± 130	** **	0 ± 0	3.4 ± 19.8		11.4 ± 50.9	
<i>H. pylori</i>	2218.8 ± 2193.2	3473.8 ± 4590.6		5286.6 ± 4219.1	**	480.5 ± 223.5	491 ± 448.3		612.5 ± 278	
Haptoglobin	83.7 ± 23	95.7 ± 42		141.7 ± 58.6	** **	239.6 ± 150.5	370.4 ± 273.1	*	429.6 ± 277.9	**
HbA1c	111.5 ± 127	114 ± 244.6		350.4 ± 446.8	* *	77.7 ± 41.9	89.3 ± 97.9		148.6 ± 165.1	
Hemoglobin A2	258.2 ± 328.5	162.7 ± 347.7		646.9 ± 860	**	0.9 ± 3.3	1.2 ± 4.1		6.7 ± 15.9	*
Hsp60	47.7 ± 57.8	97.8 ± 289.9		160.1 ± 345.9		0.4 ± 1.3	1.6 ± 7.4		1.9 ± 3.2	
Hsp70	660.3 ± 495.6	881.2 ± 933.8		1108.2 ± 1673.6		440.4 ± 196.5	478.5 ± 269.8		610.7 ± 327.2	*
IRBP	4.8 ± 9.3	0.6 ± 3.5	*	5.1 ± 22.9		0 ± 0.2	0.1 ± 0.4		0 ± 0.1	
LDH	464.4 ± 341.5	512.6 ± 440.5		736.2 ± 512.8	*	405.1 ± 184.2	532 ± 304.3		692.8 ± 318	**
NSE	145.2 ± 187.1	152.1 ± 415		188.6 ± 270.4		10.7 ± 12.8	18 ± 12.1	*	27.7 ± 30.5	*
PEDF	100.3 ± 104.8	213.7 ± 322.2		144.2 ± 104.5		91.7 ± 58	108 ± 79.8		155.6 ± 175.5	
PGI	502.9 ± 527.3	507.3 ± 573.8		1190.1 ± 1305.9	**	1201.9 ± 443.6	1533.6 ± 686.5		1942.8 ± 844.7	** *
Prealbumin	31.6 ± 23.3	49.3 ± 112.3		143.7 ± 202.8	* *	113.9 ± 84	153.5 ± 136.4		266 ± 305.2	*
RBP	23.9 ± 13.2	20.3 ± 11.9		33.1 ± 15.6	**	48.3 ± 42.3	58.6 ± 56.4		105.1 ± 158.6	
Recoverin	20.4 ± 46.3	14.6 ± 30.9		33.4 ± 63.8		2.1 ± 1.4	1.4 ± 2.1		2.7 ± 3.2	
Retinal lysate (human)	238.8 ± 198	300 ± 212.8		614 ± 1167		253.1 ± 272.6	352 ± 250.4		647.5 ± 715.6	* *
Retinal lysate (mouse)	371.2 ± 511.6	360.2 ± 559.3		803.1 ± 971.7	*	497.3 ± 231.9	497.4 ± 296.2		907 ± 888.4	* *
Rhodopsin	18.3 ± 10.5	18.8 ± 18		30.4 ± 19.7	* *	0.1 ± 0.4	0.6 ± 1.5		0.8 ± 1.9	
RPE	220.2 ± 340.9	241.9 ± 546.8		722.7 ± 1013.9	* *	228.4 ± 137	252.6 ± 227.5		448.9 ± 465.8	* *
Serum Albumin	22.8 ± 6.6	33.6 ± 29.7		24.4 ± 11.8		123.9 ± 109.4	126.2 ± 127.2		185.5 ± 234.9	
SOD1	134.8 ± 202.8	129.7 ± 230		271.9 ± 381.6		395.9 ± 183.7	581.4 ± 380.3	*	649.2 ± 400.8	*
Transferrin	11.1 ± 14.8	5.2 ± 14.7		63.7 ± 112.3	**	4 ± 12.5	4.4 ± 14.8		21.7 ± 56	
Triosephosphate Isomeras	215.8 ± 267.2	290 ± 563.2		533.8 ± 783.4		76 ± 115.1	82.9 ± 153.2		141.5 ± 153.5	
Tubulin alpha	0 ± 0	0 ± 0		0 ± 0		0.9 ± 0.7	0.9 ± 0.8		1.4 ± 1.4	
Ubiquitin	0 ± 0	1.5 ± 8.9		4.3 ± 15.3		0.6 ± 1	0.4 ± 1.4		1 ± 2	
VEGF	1.5 ± 2.5	1.6 ± 4.4		3.8 ± 11.8		0.3 ± 0.7	0.1 ± 0.2	*	0.8 ± 2.9	
Whole eye lysate (human)	45.9 ± 40.5	73.4 ± 36.5	*	102.1 ± 54.2	** *	334.4 ± 161.8	354 ± 276.9		588 ± 532.8	* *

Antibody reactivities in each group are shown as average normalized fluorescent intensity (nfi) ± SD. A one-way analysis of variance (ANOVA) parametric test followed by Tukey multiple comparison test was used to compare the samples for three subject groups. P1, NC vs dry AMD; P2, NC vs wet AMD; P3, dry AMD vs wet AMD. *, P < 0.05; **, P < 0.01

Supplementary Table 2. Odds ratios for IgM autoantibody biomarkers

NC vs dry AMD	Cut-off value	AUC	Sensitivity (%)	Specificity (%)	Odds ratios	95% confidence interval	P value
CMV	550.5	0.7486	91.43	55.00	13.037	2.982 - 57.004	0.0001
Annexin V	679.7	0.7393	62.86	85.00	9.590	2.351 - 39.119	0.0006
NSE	13.0	0.7371	65.71	80.00	7.667	2.091 - 28.105	0.0011
Factor X	1004.0	0.7143	57.14	85.00	7.556	1.867 - 30.58	0.0023
SOD1	444.0	0.6879	70.00	80.00	6.769	1.859 - 24.653	0.0022
Complement C5	1306.0	0.6843	68.57	70.00	4.333	1.341 - 13.998	0.0118
alpha-1 Antitrypsin	494.8	0.6843	60.00	80.00	6.000	1.656 - 21.743	0.0042
NC vs wet AMD	Cut-off value	AUC	Sensitivity (%)	Specificity (%)	Odds ratios	95% confidence interval	P value
Complement C5	1917.0	0.8125	65.00	90.00	16.714	2.976 - 93.885	0.0003
Annexin V	693.4	0.7950	70.00	80.00	13.222	2.79 - 62.67	0.0004
Complement C9	14.5	0.7875	55.00	95.00	7.429	1.778 - 31.04	0.0006
Complement C3	7740.0	0.7725	75.00	70.00	13.500	2.434 - 74.867	0.0009
LDH	483.6	0.7725	65.00	85.00	9.333	2.18 - 39.962	0.0015
PGI	1248.0	0.7575	75.00	70.00	7.000	1.739 - 28.174	0.0012
Factor X	1186.0	0.7475	65.00	85.00	28.500	3.155 - 257.444	0.0002
Calreticulin	710.3	0.7425	80.00	65.00	19.000	2.119 - 170.383	0.0014
NSE	14.5	0.7425	65.00	80.00	7.429	1.778 - 31.04	0.0040
Haptoglobin	344.1	0.7400	70.00	80.00	9.333	2.180 - 39.962	0.0015
Complement C8	1552.0	0.7375	55.00	95.00	23.222	3.679 - 146.574	0.0006
CFH	331.6	0.7338	55.00	90.00	23.222	2.585 - 208.615	0.0006
Retinal tissue lysate	507.7	0.7325	55.00	90.00	11.000	1.998 - 60.572	0.0024
beta-Lactoglobulin A	3.8	0.7275	55.00	95.00	23.222	2.585 - 208.615	0.0006
CRP	1017.0	0.7275	80.00	65.00	7.429	1.778 - 31.04	0.0040
CFB	543.5	0.7200	55.00	90.00	11.000	1.998 - 60.572	0.0024
alpha-1 Antitrypsin	564.7	0.7200	60.00	85.00	8.500	1.861 - 38.817	0.0033
SOD1	533.1	0.7125	65.00	85.00	10.524	2.271 - 48.757	0.0012
dry AMD vs wet AMD	Cut-off value	AUC	Sensitivity (%)	Specificity (%)	Odds ratios	95% confidence interval	P value
CFH	238.8	0.7343	80.00	60.00	6.000	1.656 - 21.743	0.0042
Complement C8	1754.0	0.7257	55.00	88.57	10.667	2.446 - 46.517	0.0005
CFB	413.4	0.7243	75.00	65.71	5.750	1.682 - 19.661	0.0037
Complement C5	2472.0	0.6814	50.00	94.29	16.500	3.091 - 88.085	0.0001
Complement C3	7873.0	0.6714	55.00	80.00	4.889	1.459 - 16.381	0.0078
Complement C9	4965.0	0.6671	50.00	85.71	6.000	1.651 - 21.801	0.0042
Ceruloplasmin	1290.0	0.6614	45.00	91.43	8.727	1.996 - 38.16	0.0017
Apo E	1.2	0.6457	40.00	94.29	11.000	2.041 - 59.286	0.0015

NC, normal controls; AMD, age-related macular degeneration; AUC, the area under the ROC curve; P value, χ^2 -test

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