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Figure legends

Figure 1

Resolution of monkey retina proteins on 2D gels stained with SYPRO Ruby (pH3-10)

Peripheral retina and macula extracted proteins (300 μg each) were isoelectric focused on pH3-10 IPG strip and then separated on 12% SDS-page gels. Spots identified by LC-MS/MS are marked by spot numbers.

Figure 2

Resolution of monkey retina proteins on 2D gels stained with SYPRO Ruby (pH 4-7).

Peripheral retina and macula extract proteins (300 μg each) were isoelectric focused on pH4-7 IPG strip. Spots identified by LC-MS/MS are marked by the spot number.

Figure 3

Resolution of monkey retina proteins on 2D gels stained with SYPRO Ruby (pH5-8).

Peripheral retina and macula extract proteins (300 μg each) were isoelectric focused on pH5-8 IPG strip. Spots identified by LC-MS/MS are marked by the spot number.

Figure 4

Resolution of monkey retina proteins on 2D gels stained with SYPRO Ruby (pH7-10).

Peripheral retina and macula extract proteins (300 μg each) were isoelectric focused on pH 7-10. Spots identified by LC-MS/MS are marked by the spot number.

Figure 5

Western blot of 8 proteins.

Five micrograms of each sample from the peripheral retina and macula were loaded onto SDS-page gel (for γ-synuclein 15 μg loading). After transferring to PVDF membrane, the proteins were detected with antibodies specific to Arrestin-C (1), Mn-SOD (2), γ-synuclein (3), E-FABP (4), Tropomyosin1a Br-1,Br-3 (5), Tropomyosin1a TM311 (6), hnRNPs A2/B1 (7), and hnRNPs C1/C2 (8). Lane P; peripheral retina, Lane M; macula.

Figure 6

2D western blotting of Mn-SOD.

Thirty microgram of each sample from the peripheral retina and macula were separated by 2D gel electrophoresis. After transferring to PVDF membrane, the proteins were detected with antibodies specific to Mn-SOD.

Figure 7

Tissue localization of macula enriched proteins.

Four micrometer paraffin section of monkey eye was stained with hematoxylin and eosin (A), other sections were labeled with antibodies specific to Arrestin-C (B), Mn-SOD (C), γ-synuclein (D), E-FABP (E), Tropomyosin Br-1, Br-3 (F), TM311 to Tropomyosin (G), hnRNPs A2/B1 (H), and hnRNPs C1/C2 (I). GCL, ganglion cell layer; INL, inner nuclear layer; OPL, outer plexiform layer; ONL, outer nuclear layer; PIS, photoreceptor inner segment; POS, photoreceptor outer segment; RPE, retinal pigment epithelial; Ch, choroid. (Bar; 50 μ)

Figure 1

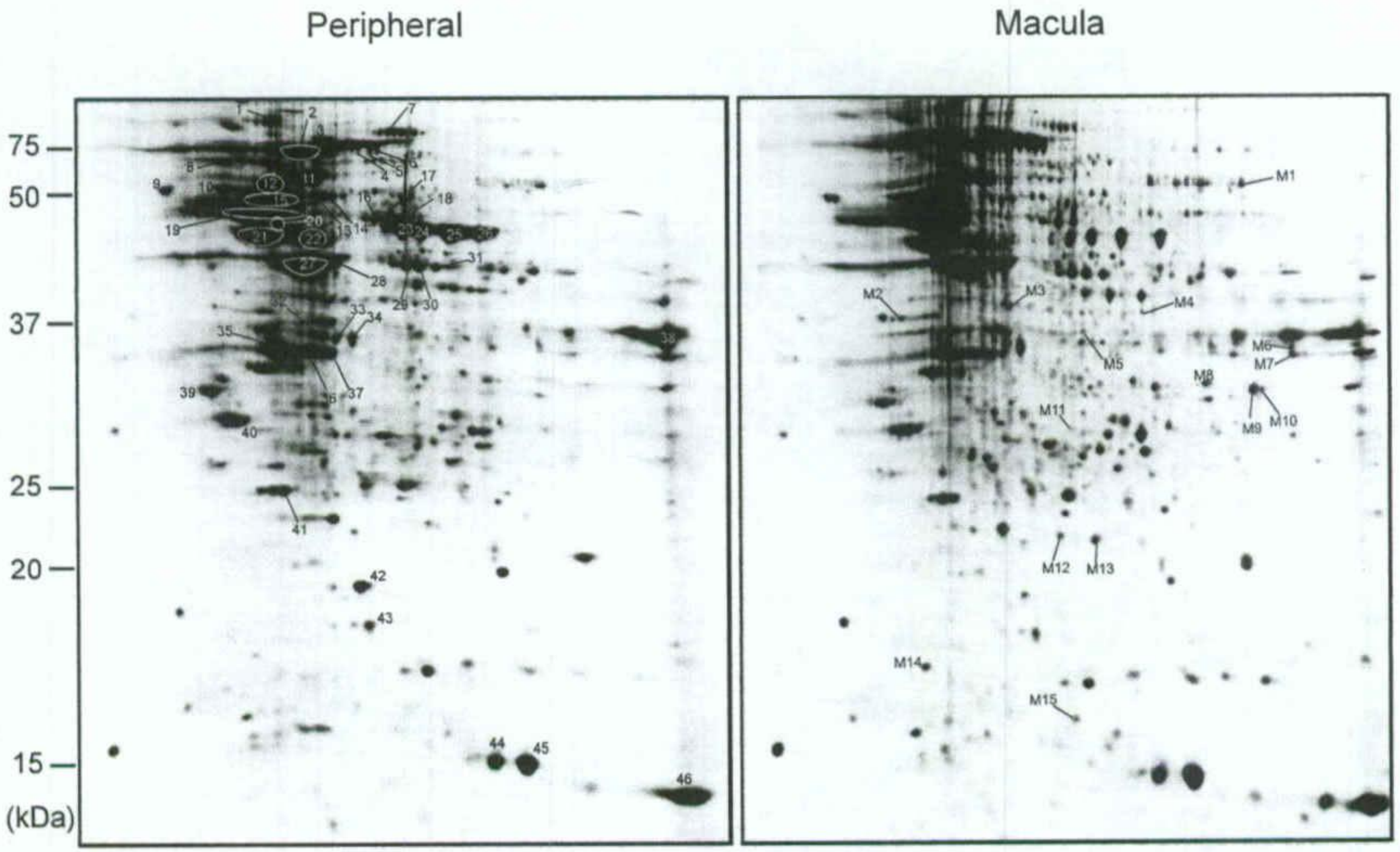

Peripheral
Macula
75
50
37
25
20
15
(kDa)
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
M13
M14
M15

Figure 2

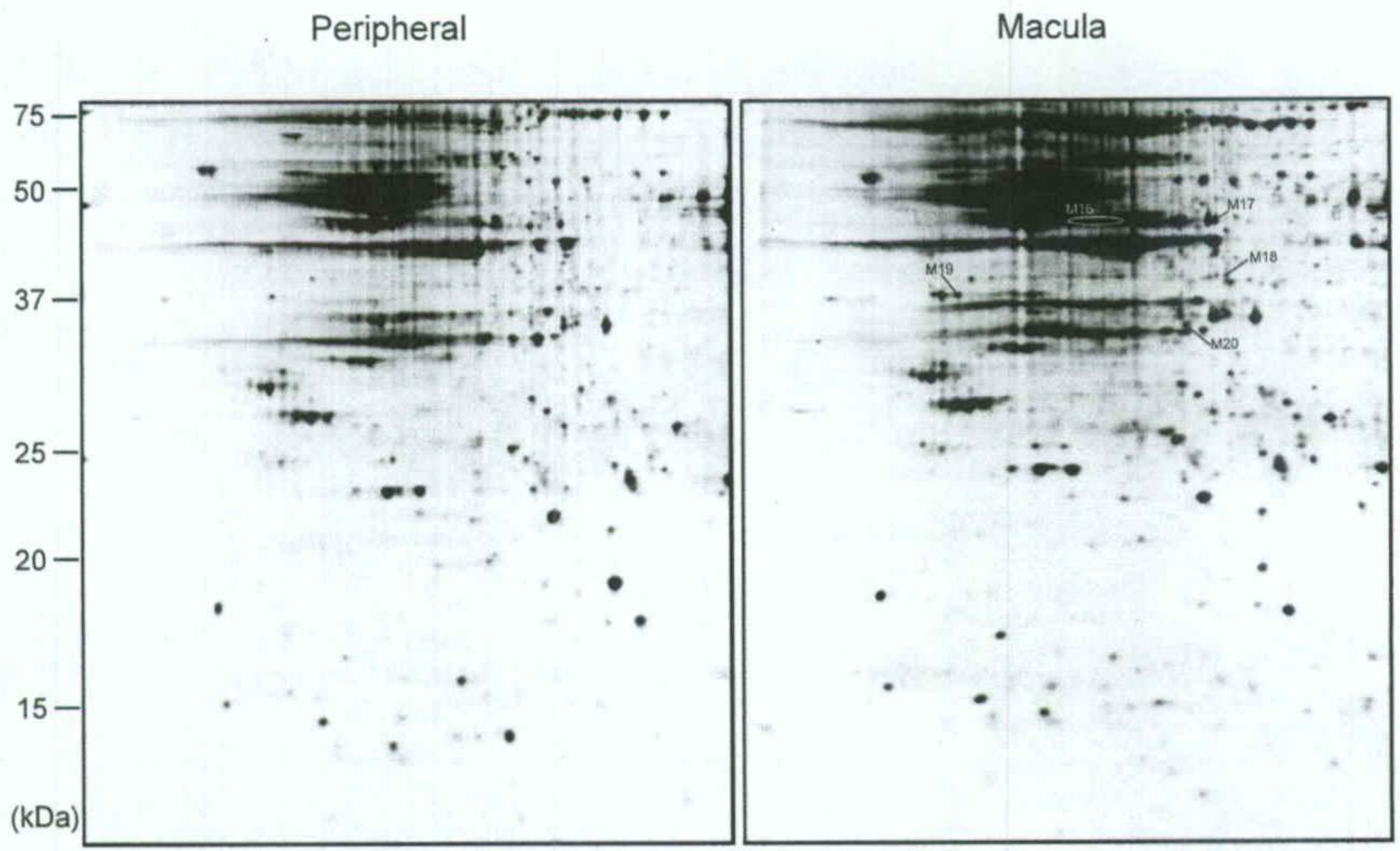
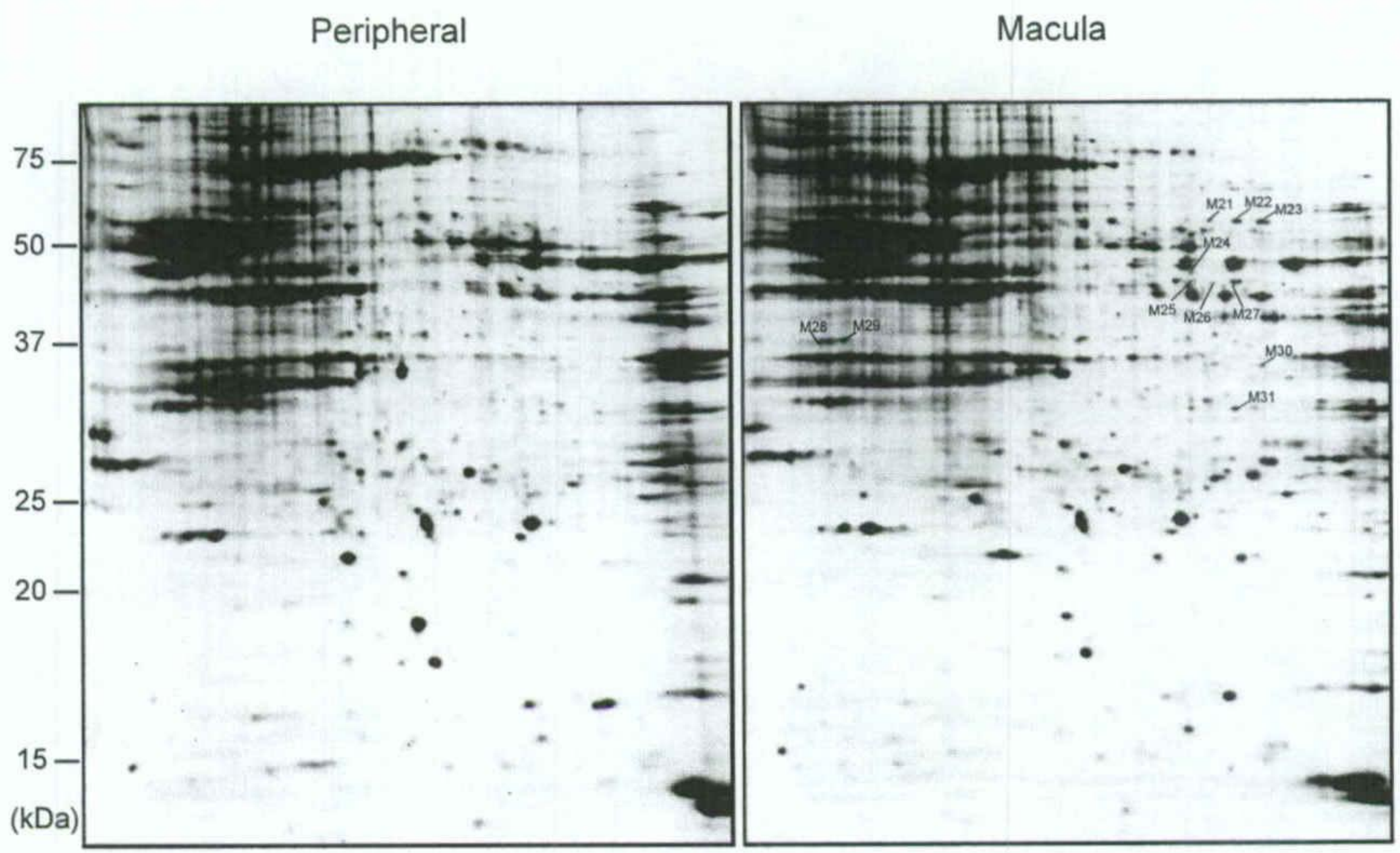
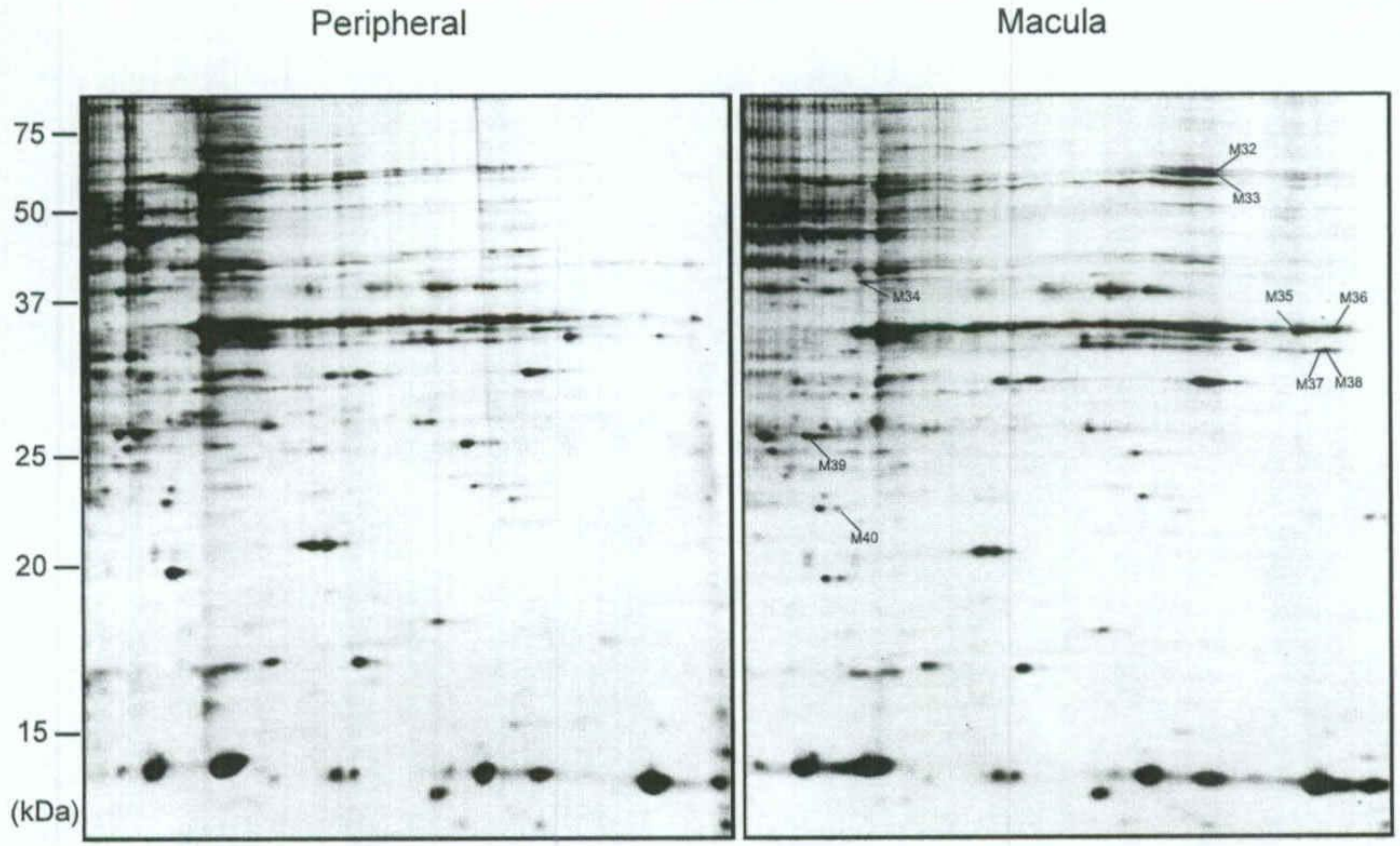


Figure 3



Peripheral
Macula
75
50
37
25
20
15
(kDa)
M21
M22
M23
M24
M25
M26
M27
M28
M29
M30
M31

Figure 4



Peripheral
Macula
75
50
37
25
20
15
(kDa)
M32
M33
M34
M35
M36
M37
M38
M39
M40

Figure 5

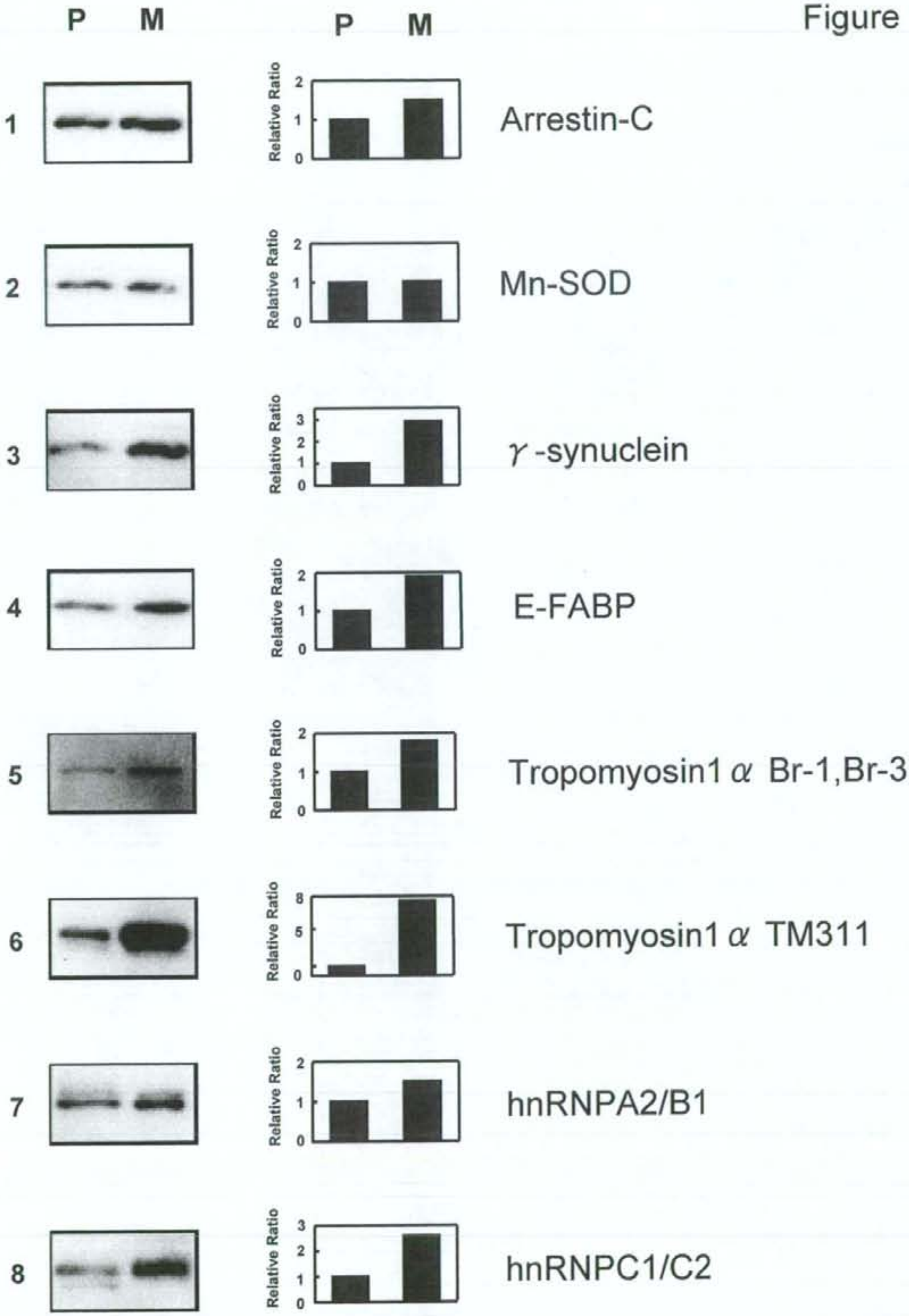

P
M
P
M
1
Arrestin-C
2
Mn-SOD
3
γ-synuclein
4
E-FABP
5
Tropomyosin1α Br-1,Br-3
6
Tropomyosin1α TM311
7
hnRNPA2/B1
8
hnRNPC1/C2
Relative Ratio

Figure 6

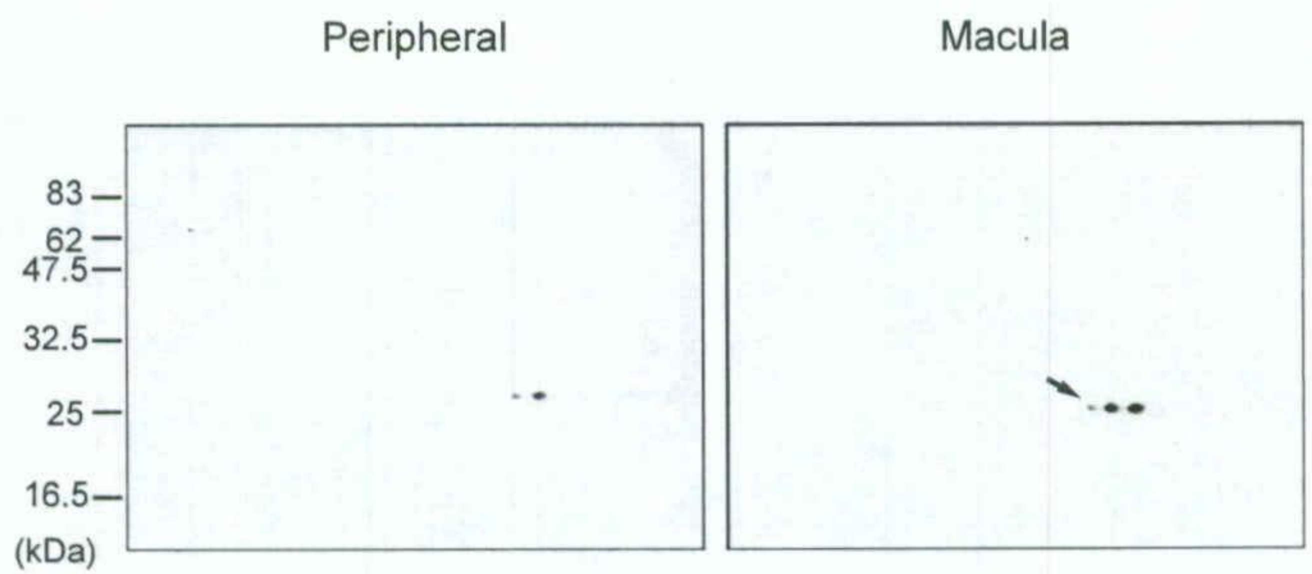
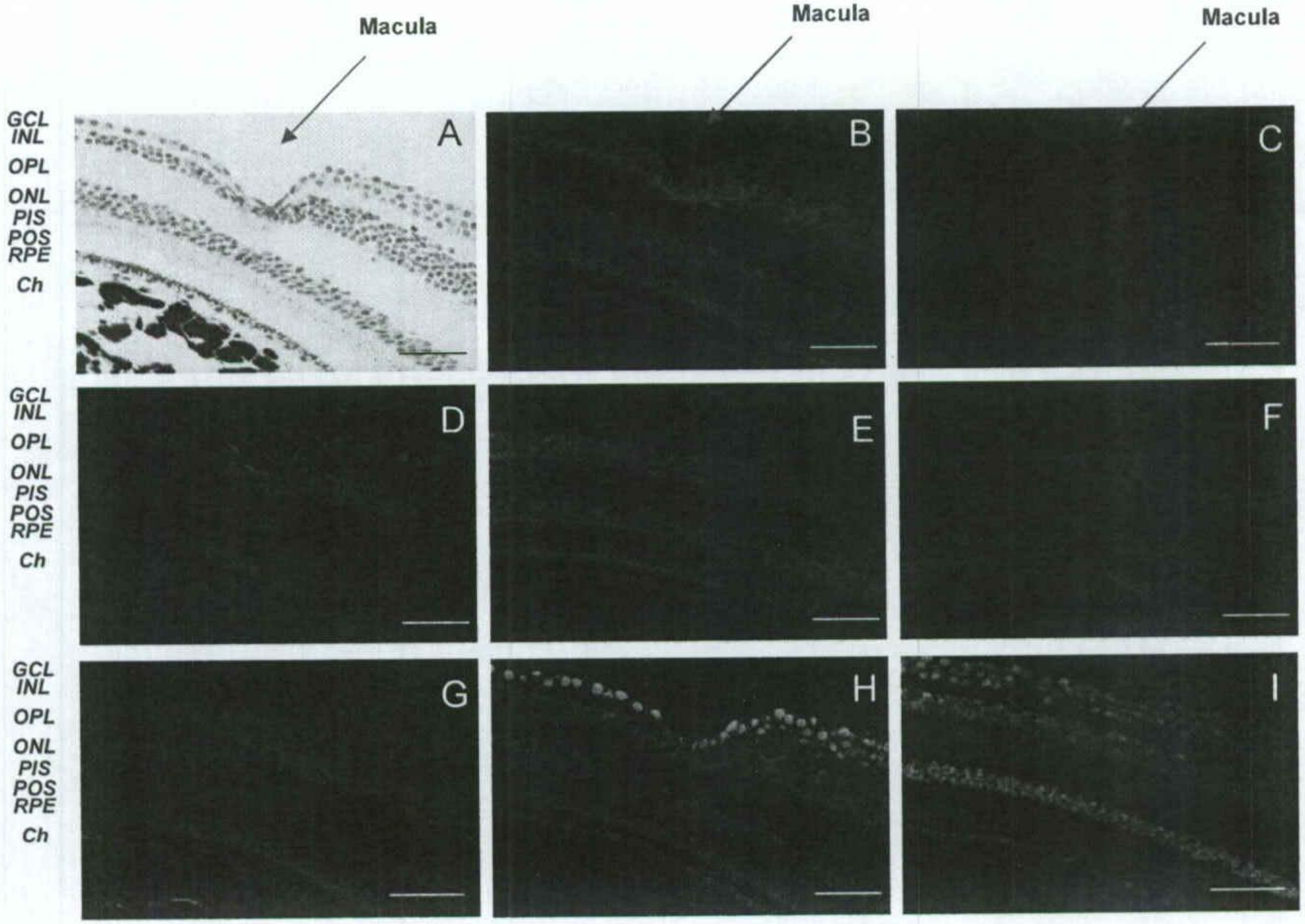


Figure 7


Macula
Macula
Macula
GCL
INL
OPL
ONL
PIS
POS
RPE
Ch
A
B
C
D
E
F
G
H
I

Tables

Table 1

Proteins identified macular and peripheral retina.

Abundant proteins in macular and peripheral retina are identified by LC-MS/MS and listed.

[(a)]Spot numbers correspond to the numbers on gel images in figure 1.

[(b)]Accession no. corresponds to UniProtKB/Swiss-Prot database (Release 48.8).

[(c)]MW and pI is theoretical score by Bioworks ver.3.1.

*Oxidation of methonine.

Spot no.[a]	Protein name	Database Accession no[b].	MW (kDa)[c]	pI[c]	Sequence coverage (%)	Precursor Ion MH+	Charge	XC	Residue	Sequence
1	Heat shock protein HSP 90-alpha	P07900	84.5	4.94	10.53					
						1243.44	2	3.66	100-111	ADLINNLGTIAK
						1152.24	2	3.03	283-291	YIDQEELNK
						1834.87	2	4.55	299-313	NPDDITNEEYGEFYK
						1265.40	2	3.09	345-354	RAPFDLFENR
						1169.23	2	2.23	446-455	LGIHEDSQNR
						1225.38	2	2.85	489-498	HIYYITGETK
						1236.32	2	3.23	499-509	DQVANSAFVER
1	Heat shock protein HSP 90-beta	P08238	83.1	4.97	6.09					
						1545.72	2	2.34	41-54	ELISNASDALDKIR
						1040.11	2	2.43	55-63	YESLTDPSK
						1243.44	2	3.66	95-106	ADLINNLGTIAK
						1152.24	2	3.03	275-283	YIDQEELNK
2	Heat shock cognate 71 kDa protein	P11142	70.9	5.37	29.41					
						1488.58	2	2.96	37-49	TTPSYVAFTDTER
						1666.84	2	4.15	57-71	NQVAM*NPTNTVFDAK
						1271.38	2	2.13	78-88	FDDAVVQSDM*K
						1181.32	2	3.19	103-112	VQVEYKGETK
						1633.85	2	3.48	113-126	SFYPEEVSSM*VLTK
						1269.49	2	3.69	127-137	M*KEIAEAYLGK
						1200.37	2	3.82	160-171	DAGTIAGLNVLR
						1789.07	2	4.31	172-188	IINEPTAAAIAYGLDKK
						1252.47	2	3.36	237-246	M*VNHFIAEFK
						1254.37	2	2.60	302-311	FEELNADLFR
						1482.67	2	3.92	329-342	SQIHDIVLVGGSTR
						1082.23	2	2.37	349-357	LLQDFFNGK
						773.86	1	1.80	452-458	DNNLLGK
						1018.15	2	2.43	501-509	ITITNDKGR
						990.09	2	2.54	510-517	LSKEDIER
						1142.31	2	2.30	518-526	M*VQEAEKYK
						1320.45	2	3.71	540-550	NSLESYAFNM*K

						903.02	2	3.29	121-129	GVNVSALSR
						1317.52	2	3.10	221-232	LPANHPLLTGQR
						1051.16	2	2.45	281-289	GNEM*SEVLR
						1397.53	2	2.25	290-301	DFPELTM*EVDGK
						1532.75	2	4.18	309-323	TALVANTSNM*PVAAR
						1799.00	2	3.81	365-381	LAEM*PADSGYPAYLGAR
						1869.18	2	3.94	537-552	TVGM*LSNM*IAFYDM*AR
						1248.41	2	2.11	586-596	FKDPLKDGEAK
						1817.96	2	3.68	599-613	SDYAQLLEDM*QNAFR
2	Lamin B2	Q03252	67.7	5.29	17.67					
						1427.67	2	3.18	46-57	ALELENDRLLLK
						1192.30	2	2.94	58-67	ISEKEEVTTR
						1238.33	2	3.58	74-84	ALYESELADAR
						1089.18	2	2.77	152-161	GLESDVAELR
						1434.50	2	3.60	271-284	LSSDQNDKAASAAR
						1770.05	2	3.50	292-306	M*RLESLSYQLSGLQK
						1453.69	2	2.67	362-373	LALDM*EINAYRK
						975.04	2	2.10	374-381	LLEGEEER
						1520.69	2	4.09	542-555	TVLVNADGEEVAM*R
2	Heat shock 70 kDa protein 1	P08107	70.1	5.48	16.54					
						1488.58	2	2.96	37-49	TTPSYVAFTDTER
						1659.83	2	4.00	57-71	NQVALNPQNTVFDAK
						1688.91	2	4.24	172-187	IINEPTAAAIAYGLDR
						1676.68	2	3.22	221-236	ATAGDTHLGGEDFDNR
						1110.25	2	2.57	349-357	LLQDFFNGR
						1018.15	2	2.43	501-509	ITITNDKGR
						1004.12	2	2.44	510-517	LSKEEIER
						1142.31	2	2.30	518-526	M*VQEAEKYK
						1304.46	2	2.81	540-550	NALESYAFNM*K
2	Stress-70 protein, mitochondrial	P38646	73.7	5.87	9.57					
						1570.88	2	3.07	160-173	LYSPSQIGAFVLM*K
						1243.40	2	3.54	207-218	DAGQISGLNVLR
						1646.87	2	4.48	219-234	VINEPTAAALAYGLDK

						1291.44	2	3.38	395-405	VQQTVQDLFGR
3	Stress-70 protein, mitochondrial	P38646	73.7	5.87	8.25					
						1243.40	2	2.60	207-218	DAGQISGLNVLR
						1646.87	2	4.44	219-234	VINEPTAAALAYGLDK
						1291.44	2	2.51	395-405	VQQTVQDLFGR
						1809.96	2	2.32	469-485	SQVFSTAADGQTQVEIK
3	Serum albumin	P02768	69.4	5.92	6.90					
						1150.31	2	2.76	66-75	LVNEVTEFAK
						961.14	2	2.44	427-434	FQNALLVR
						1512.73	2	2.34	439-452	VPQVSTPTLVEVSR
						1129.38	2	2.83	549-558	KQTALVELVK
4	Serum albumin	P02768	69.4	5.92	6.90					
						1651.88	2	3.32	250-264	AEFAEVSKLVTDLTK
						1640.88	2	2.71	348-360	DVFLGM*FLYEYAR
						1512.73	2	2.82	439-452	VPQVSTPTLVEVSR
5	Serum albumin	P02768	69.4	5.92	7.39					
						1150.31	2	2.70	66-75	LVNEVTEFAK
						1658.78	2	3.62	414-426	QNCELFEQLGEYK
						1512.73	2	3.13	439-452	VPQVSTPTLVEVSR
						1129.38	2	2.98	549-558	KQTALVELVK
6	Serum albumin	P02768	69.4	5.92	3.94					
						1150.31	2	2.55	66-75	LVNEVTEFAK
						1512.73	2	2.78	439-452	VPQVSTPTLVEVSR
7	Serotransferrin	P02787	77.1	6.81	3.72					
						1274.41	2	2.88	226-236	HSTIFENLANK
						1883.00	2	3.38	237-251	ADRDQYELLCLDNTR
8	Neurofilament triplet L protein	P07196	61.4	4.64	23.99					
						1073.14	2	2.30	91-99	AQLQDLNDR
						1125.22	2	2.35	107-115	VHELEQQNK
						1155.41	2	3.43	116-125	VLEAELLVLR
						1062.11	2	2.99	147-156	LAAEDATNEK
						1025.09	2	2.90	177-184	YEEEVLSR
						1002.11	2	2.53	196-205	KGADEAALAR