Conclusions

Proteomic analyses using 2D gel electrophoresis and LC-MS/MS were performed for comparison of regional differences in primate retina. Twenty-six proteins were identified as macula unique 2D-gel spots and 6 of these proteins were confirmed to be macula enriched by western blotting. In this study, brain type isoform of tropomyosin 1 alpha chain was first reported from retina. Furthermore, additional horizontal spots for Mn-SOD were specifically observed in the macula. Although some of these proteins are derived because of difference in major cell types between the two regions, identification of protein from macular enriched cells is important to understand the pathogenesis of AMD.

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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