# Characterizing the protective effects of SHLP2, a mitochondrial-derived peptide, in macular degeneration

## Sonali Nashine<sup>1</sup>, Pinchas Cohen<sup>2</sup>, Anthony B. Nesburn<sup>1,3</sup>, Baruch D. Kuppermann<sup>1</sup>, M. Cristina Kenney<sup>1,4\*</sup>

- 1. Department of Ophthalmology, Gavin Herbert Eye Institute, University of California Irvine, Irvine, CA, USA.
- 2. Leonard Davis School of Gerontology, University of Southern California, Los Angeles, CA, USA.
- 3. Cedars-Sinai Medical Center, Los Angeles, CA, USA.
- 4. Department of Pathology and Laboratory Medicine, University of California Irvine, Irvine, CA, USA.

#### \*Corresponding Author: M. Cristina Kenney, M.D., Ph.D.

Gavin Herbert Eye Institute, Ophthalmology Research Laboratory University of California Irvine, Hewitt Hall, Room 2028 843 Health Science Road Irvine, CA 92697 Telephone (949) 824-7603 Fax (949) 824-9626 Email <u>mkenney@uci.edu</u>

#### **Supplementary Information**





**Figure S1 A legend:** Full-length Western blot showing OXPHOS complex subunit proteins in normal (NL) untreated and normal (NL) SHLP2-treated samples. The dotted lines demarcate the lanes that were used as representative images in the main text. Positive control is human heart mitochondria Western blot control that was provided with the antibody cocktail.

#### Figure S1 B



**Figure S1 B legend:** Full-length Western blot showing  $\beta$ -actin (loading control) bands for OXPHOS complex subunit proteins in normal untreated and normal SHLP2-treated samples. Loading control  $\beta$ -actin was run on the same gel. The dotted lines demarcate the lanes that were used as representative images in the main text.

#### Figure S2 A



**Figure S2 A legend:** Full-length Western blot showing OXPHOS complex subunit proteins in AMD untreated and AMD SHLP2-treated samples. The dotted lines demarcate the lanes that were used as representative images in the main text. Positive control is human heart mitochondria Western blot control that was provided with the antibody cocktail.

#### Figure S2 B



**Figure S2 B legend:** Full-length Western blot showing  $\beta$ -actin (loading control) bands for OXPHOS subunit proteins in AMD untreated and AMD SHLP2-treated samples. Loading control  $\beta$ -actin was run on the same gel. The dotted lines demarcate the lanes that were used as representative images in the main text.

#### Figure S3 A



**Figure S3 A legend:** Full-length Western blot showing cleaved Caspase-3 protein bands in normal untreated and normal SHLP2-treated samples. The dotted lines demarcate the lanes that were used as representative images in the main text.

### Figure S3 B



**Figure S3 B legend:** Full-length Western blot showing  $\beta$ -actin for cleaved Caspase-3 protein bands in normal untreated and normal SHLP2-treated samples. The dotted lines demarcate the lanes that were used as representative images in the main text.

#### Figure S4 A



**Figure S4 A legend:** Full-length Western blot showing cleaved Caspase-3 protein bands in AMD untreated and AMD SHLP2-treated samples. The dotted lines demarcate the lanes that were used as representative images in the main text.

#### Figure S4 B



**Figure S4 B legend:** Full-length Western blot showing  $\beta$ -actin (loading control) bands for cleaved Caspase-3 protein in AMD untreated and AMD SHLP2-treated samples. Loading control  $\beta$ -actin was run on the same gel. The dotted lines demarcate the lanes that were used as representative images in the main text.

#### Table S1.

Primer name	Range of Cycle threshold	Housekeeping gene	Range of Cycle threshold
Caspase-3	20-22	HPRT1	20-22
Caspase-7	25-29	ALAS variant 1	25-28
PGC-1a	21-28	HMBS	21-28
MT-RNR2	14-15	GAPDH	18-19

**Table S1 legend:** Table showing names and cycle threshold (Ct) range of all qRT-PCR primers used for gene expression studies.