

## **Supplementary material**

**Supplementary Figure 1. Characterization of anti ND1 and COX1 subunit of OXPHOS complex I and IV and anti  $\beta$  subunit of Fo-F1 ATP synthase in zebrafish samples.** Zebrafish samples are retinal homogenate (lane 1) and heart homogenate (lane 2). **A , B and C:** semiquantitative Western Blot (WB) analysis with Ab anti- ND1 subunit of OXPHOS Complex I, anti COX1 subunit of Complex IV and ATP synthase  $\beta$  subunit, respectively. **D:** densitometric analysis of Western Blot signals, made with ChemiDoc software (BioRad). The values of densitometric analysis are expressed as Relative Optical density (ROD)  $\pm$  SD. Each panel is representative of at least five experiments.

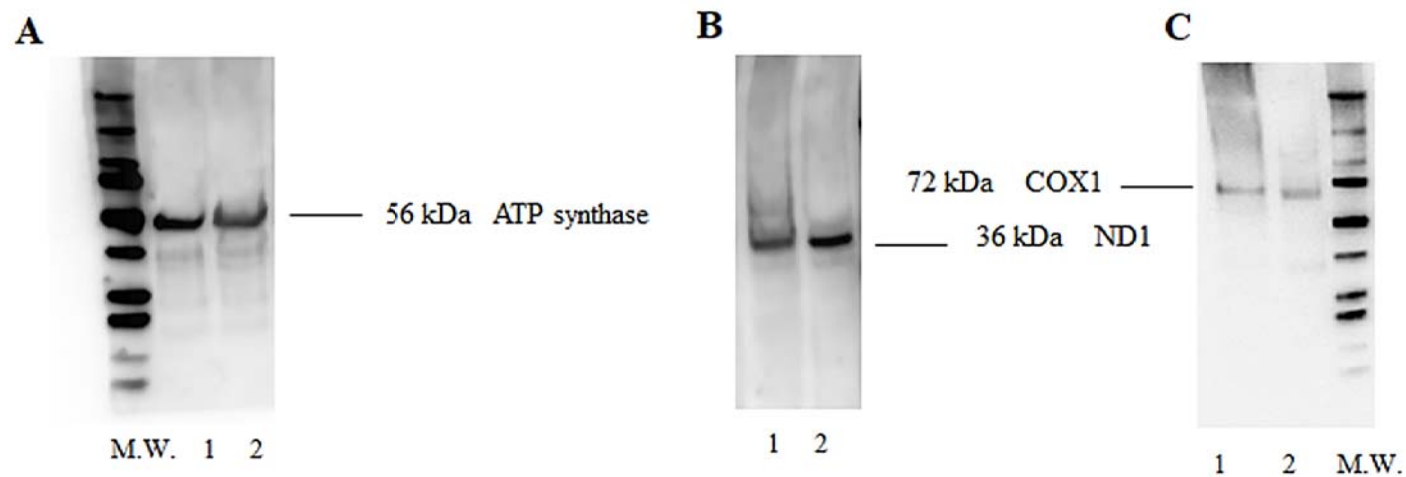
**Supplementary Figure 2. Immunohistochemistry of larval retinal section incubated with secondary antibodies only.**

Panels represent adult zebrafish retinal section incubated with a mixture of two secondary antibodies: Alexa-488-tagged anti-rabbit or/and Alexa-594-tagged anti-mouse IgG antibody only. Negligible crossreactivity was detected.

**Supplementary Figure 3. Transmission Electron Microscopy (TEM) on retina of adult zebrafish. Negative control.**

Adult (A-C) and an embryo 4dpf (D-F) zebrafish retina treated with secondary gold-conjugated antibodies (small, 5 nm width gold particles and large, 25 nm width gold particles), but omitting primary antibodies. No labelling is recognizable. IS: rod inner segment; m: mitochondrion; OS: rod outer segment.

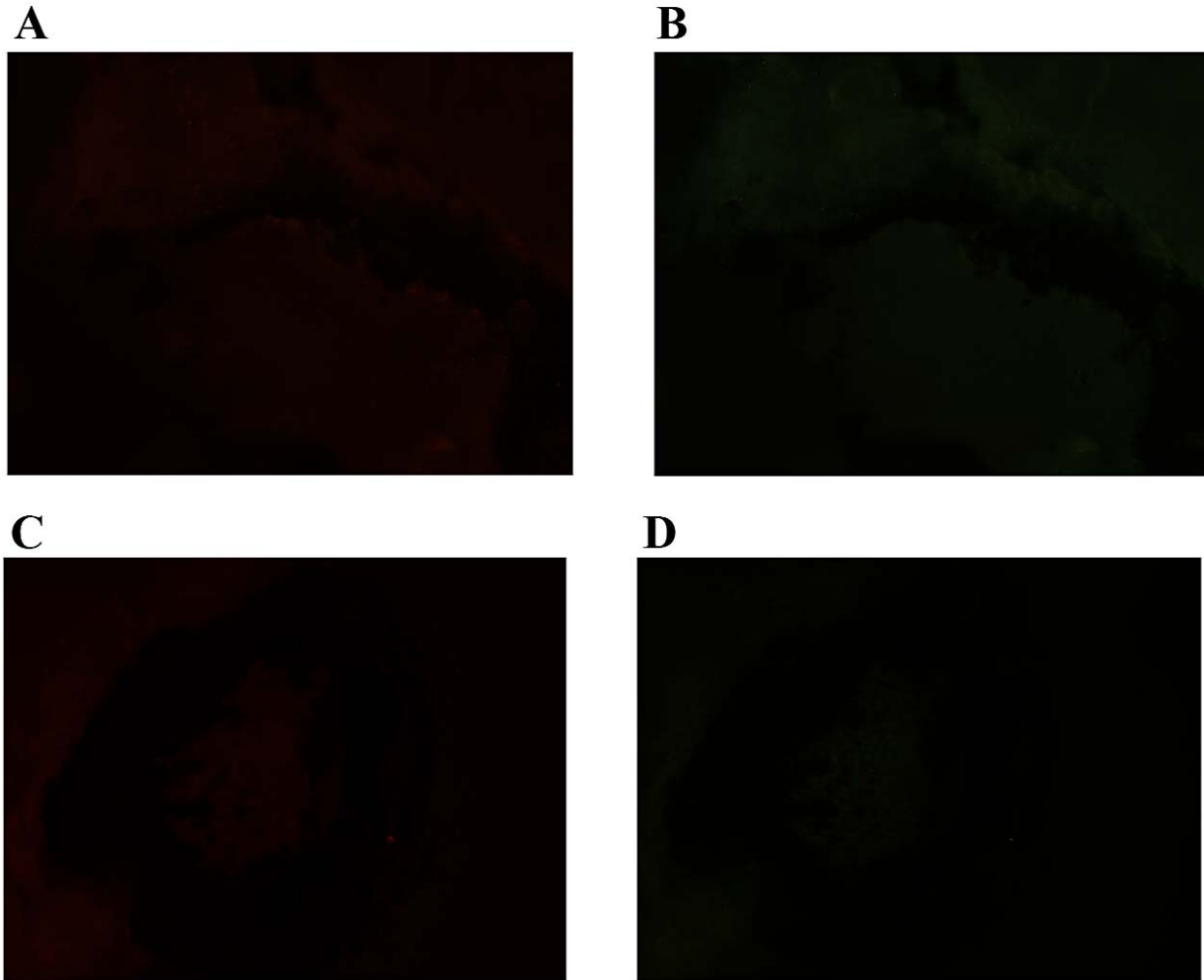
**Supplementary Figure 4 Activity of OXPHOS Complex I and II-IV on unfixed 4 days zebrafish larval eye sections in absence of ETC substrate.** Panel A ETC Complex I activity performed in absence of NADH. Panel B ETC Complex II-IV activity in pre absence of Cytochrome c. No activity staining is visible.



**D**

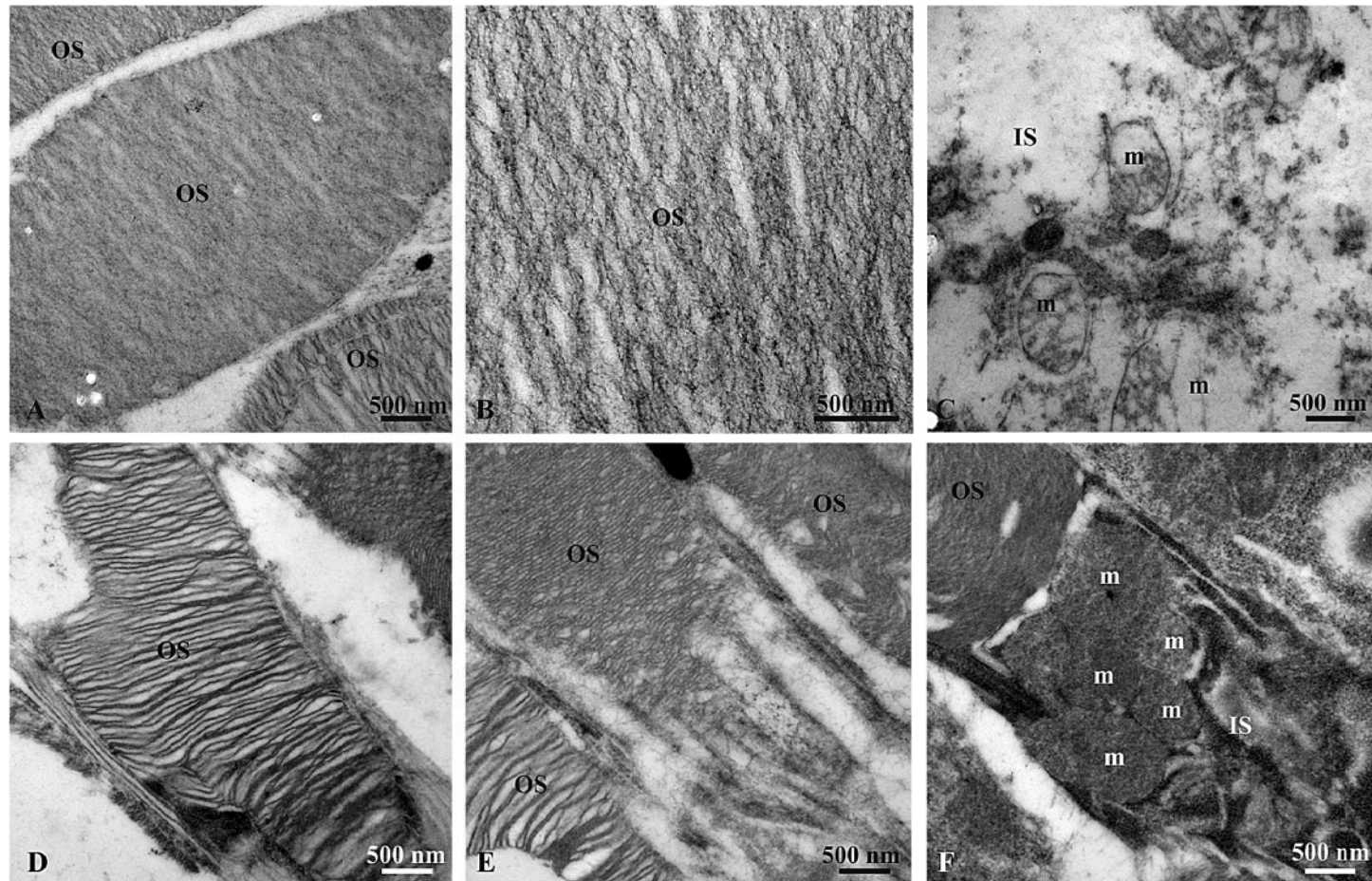
	ND1	ATP synthase	COX1
Retinal Homogenate	1.2±0.08	1.7±0.14	0.8±0.04
Heart Homogenate	1.6±0.13	1.9±0.15	0.9±0.05

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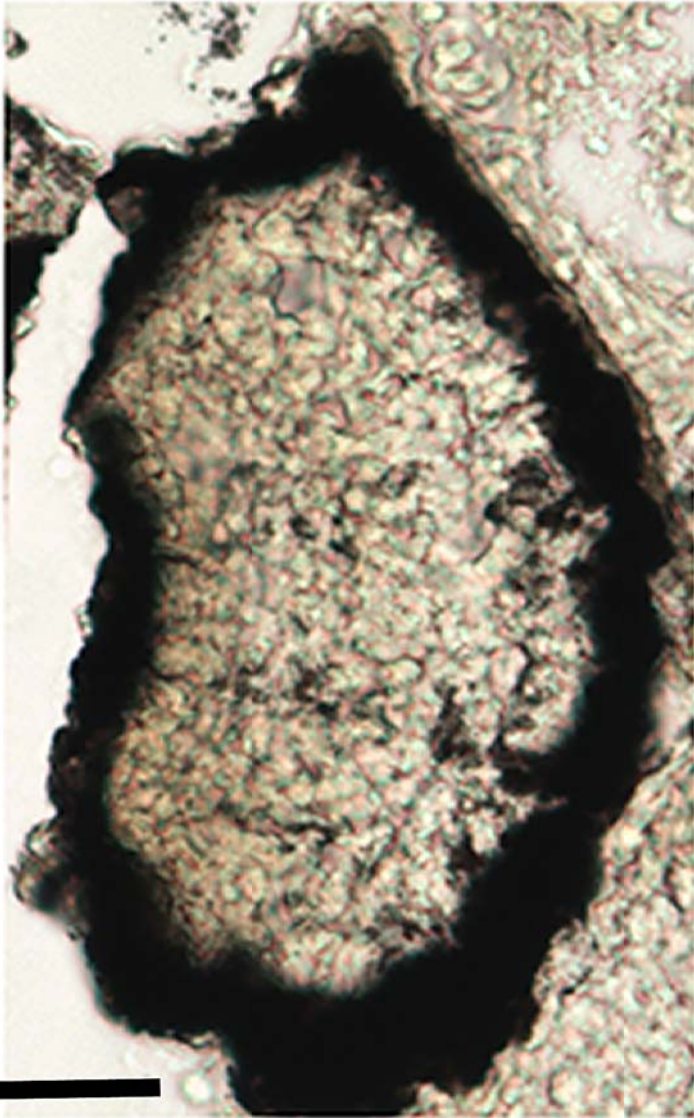
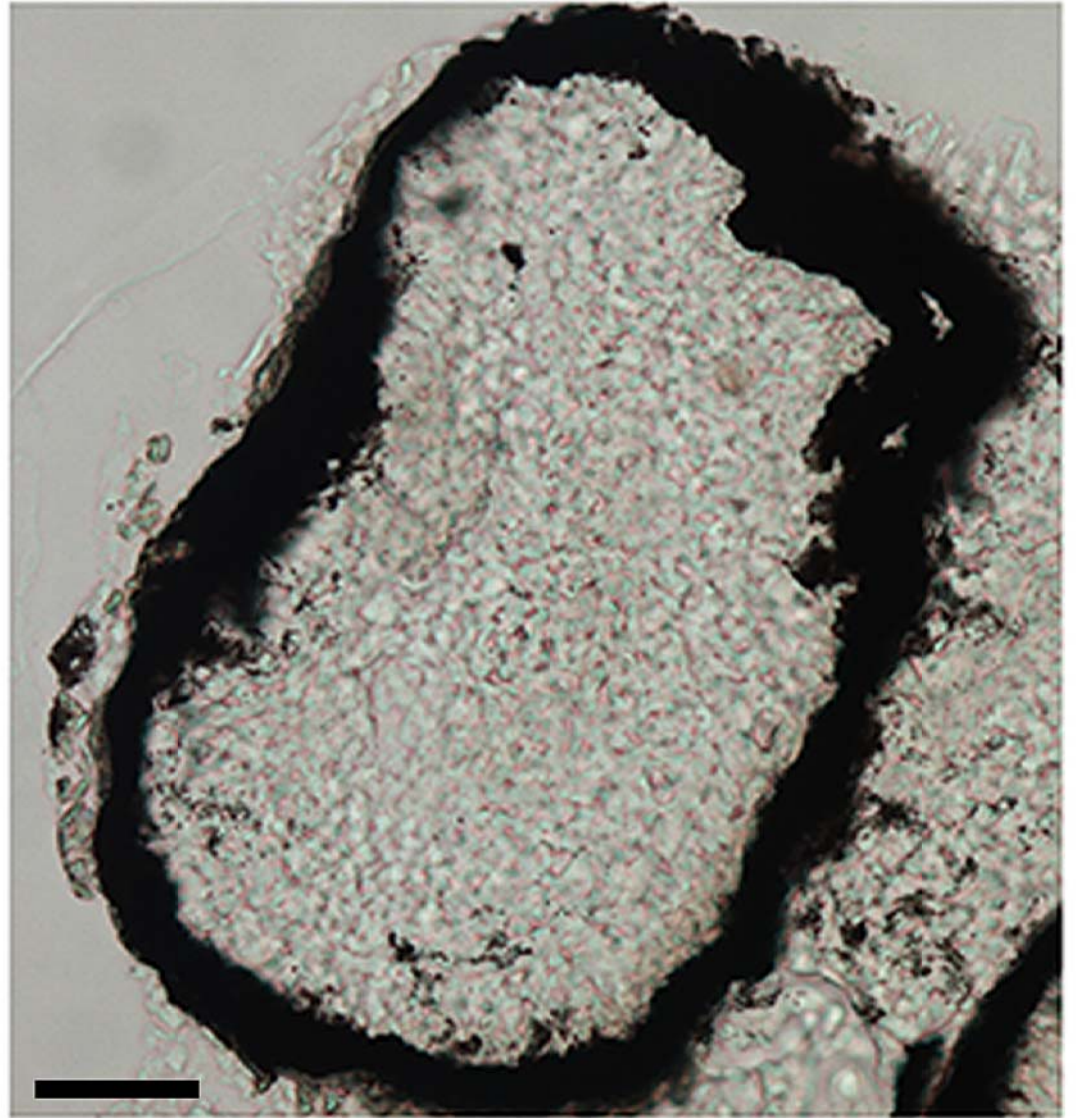
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**A****B**

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