Supplementary Figure S1

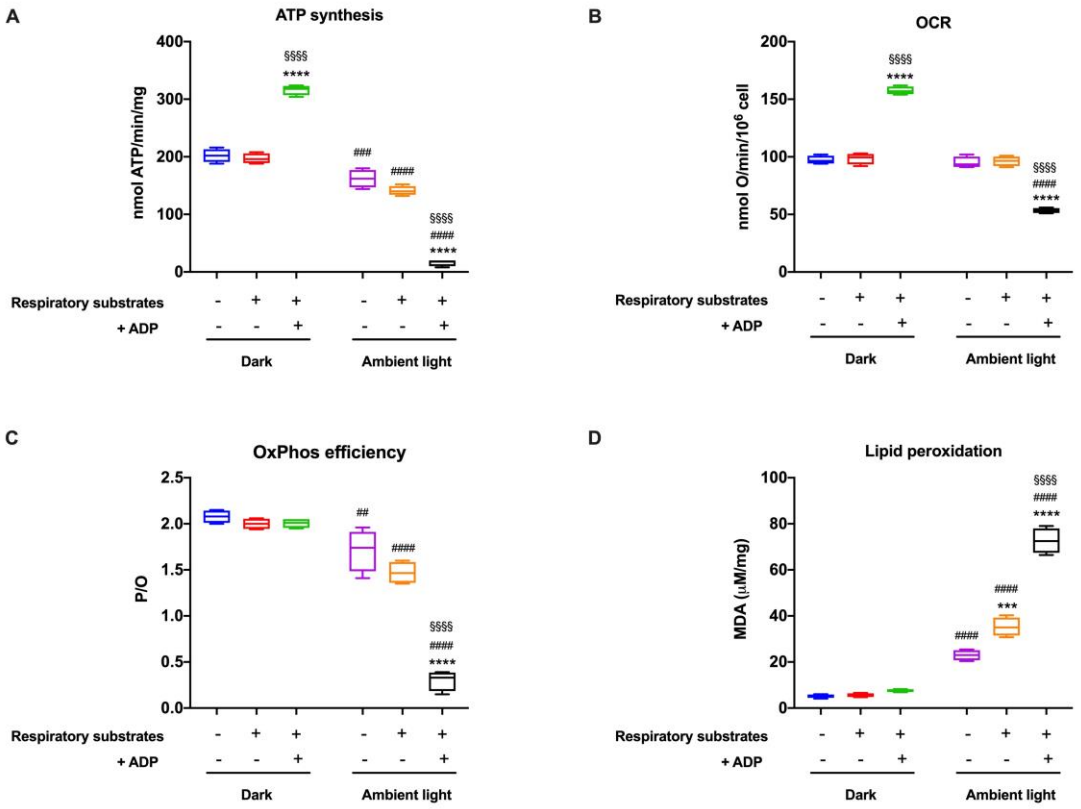

Figure S1 supplementary: ATP synthesis, oxygen consumption rate, OxPhos efficiency, and lipid peroxidation in rod OS. All the data reported in this figure are obtained on bovine rod OS preincubated or not with respiratory substrates (0.6 mM NADH and 20 mM succinate) and/or 0.1 mM ADP and maintained in the dark or exposed to ambient light for 30 min. (A) ATP synthesis through F_1F_o-ATP synthase and (B) oxygen consumption rate (OCR); in both experiments, 0.1 mM NADH has been added to induce OCR and ATP synthesis; (C) P/O value, a marker of OxPhos efficiency, calculated as the ratio between synthetized ATP and consumed oxygen; (D) MDA content as a lipid peroxidation marker. Data are representative of four independent replicates. ***, and **** indicate a significant difference for $p < 0.001$ or 0.0001, respectively, between basal rod OS and rod OS incubated with respiratory substrates and/or ADP both when kept in the dark or exposed to ambient light; ##, ###, and #### indicate a significant difference for $p< 0.01$, 0.001, or 0.0001 between the rod OS maintained in the dark or exposed in the ambient light, under the same respiratory substrates conditions; §§§§ indicates a significant difference for $p < 0.0001$, between the rod OS treated with only respiratory substrates or incubate with respiratory substrates + ADP.

The data suggest that when rod OS are maintained in the dark, both in the absence and presence of pretreatment with respiratory substrates or/and ADP, they can produce ATP by consuming oxygen without altering OxPhos efficiency or lipid peroxidation levels. In contrast, when rod OS are exposed to ambient light for 30 minutes in the presence of respiratory substrates, they show an alteration in aerobic metabolism associated with uncoupling and increased peroxided lipid accumulation. These effects are more evident when rod OS are incubated with both respiratory substrates and ADP, suggesting that to induce oxidative stress in rod OS, they must be exposed to light in the presence of all OxPhos-activating substrates.