

Our findings caution against the use of indiscriminate mitochondrial inhibitors for cancer treatment.

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In situ quantification of mitochondrial bioenergetics reveals disparate OXPHOS kinetics between mouse colorectal cancer cells and healthy tissues

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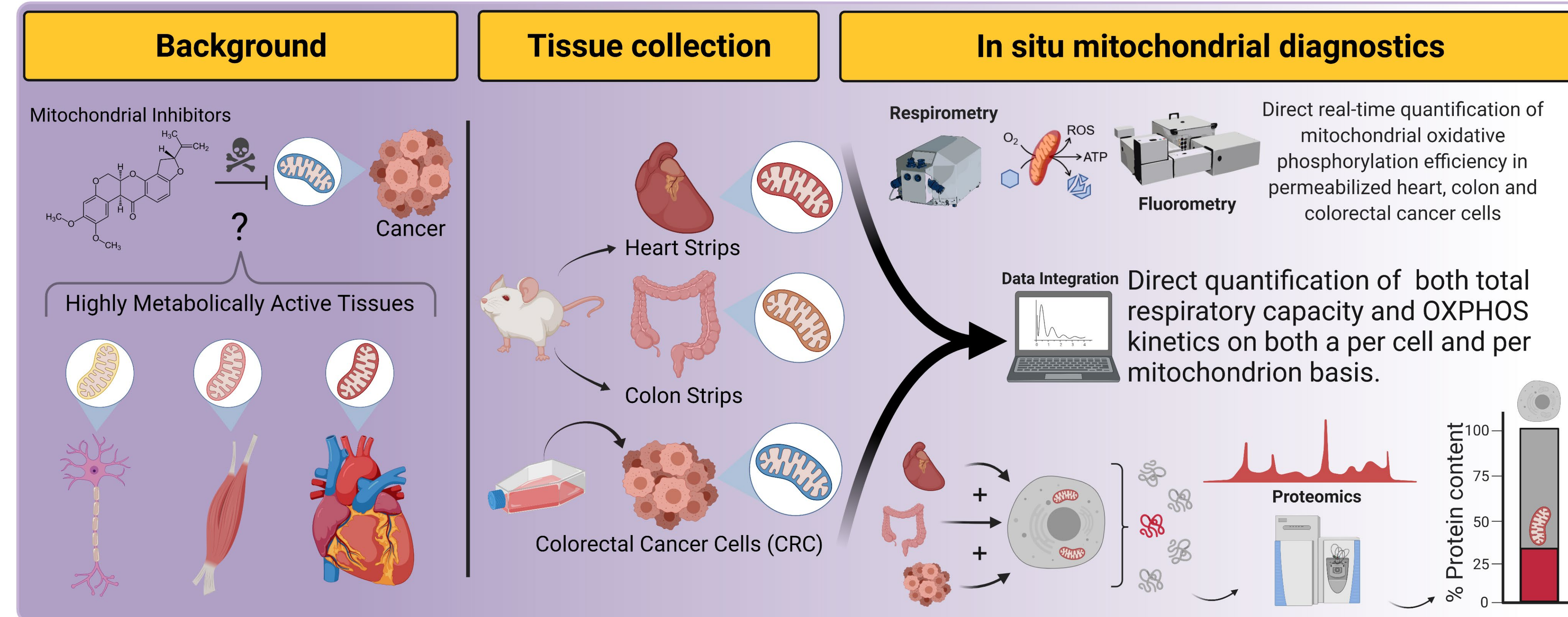
For references and more data scan here:
fisherwellmanlab.com



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GRAPHICAL ABSTRACT



RESULTS

Mitochondrial Bioenergetics

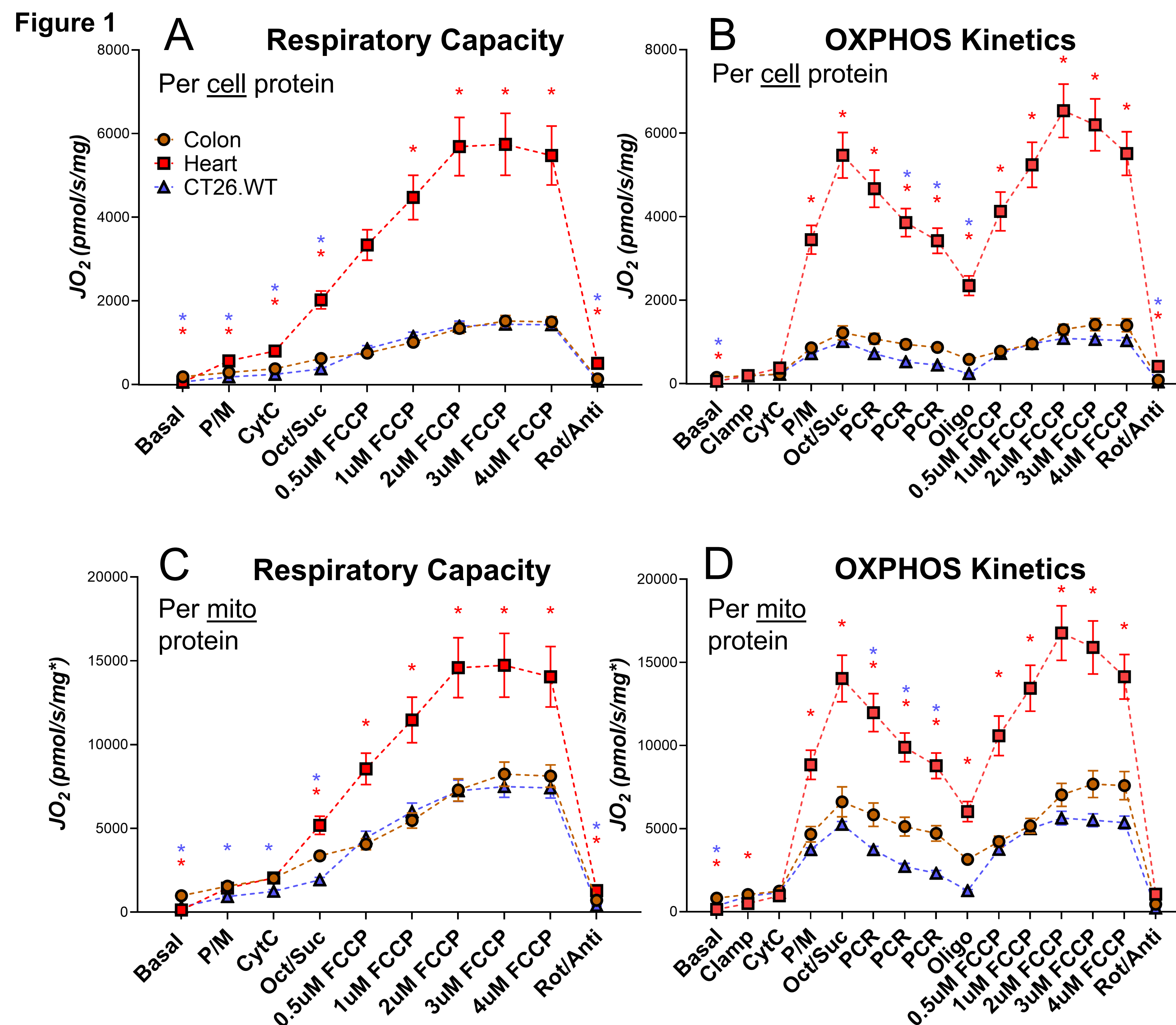


Figure 1 A-D Respiration data from the PCR titration and FCCP titration protocols in permeabilized colon and heart strips and in permeabilized cells. Data was normalized to total protein (A-B) or to mitochondrial protein (C-D). N=7/group. Heart's respiratory capacity is greatly elevated when compared to colon and CRC. Statistics: two-way ANOVA in relationship to colon. *P<0.0332

Results: Despite minimal differences between CRC and normal mouse colon, in cardia myofibers, both total respiratory capacity and OXPHOS conductance were >5-fold higher when adjusted to total protein and >2-fold when adjusted to mitochondrial protein.

RESULTS cont

OXPHOS proteome

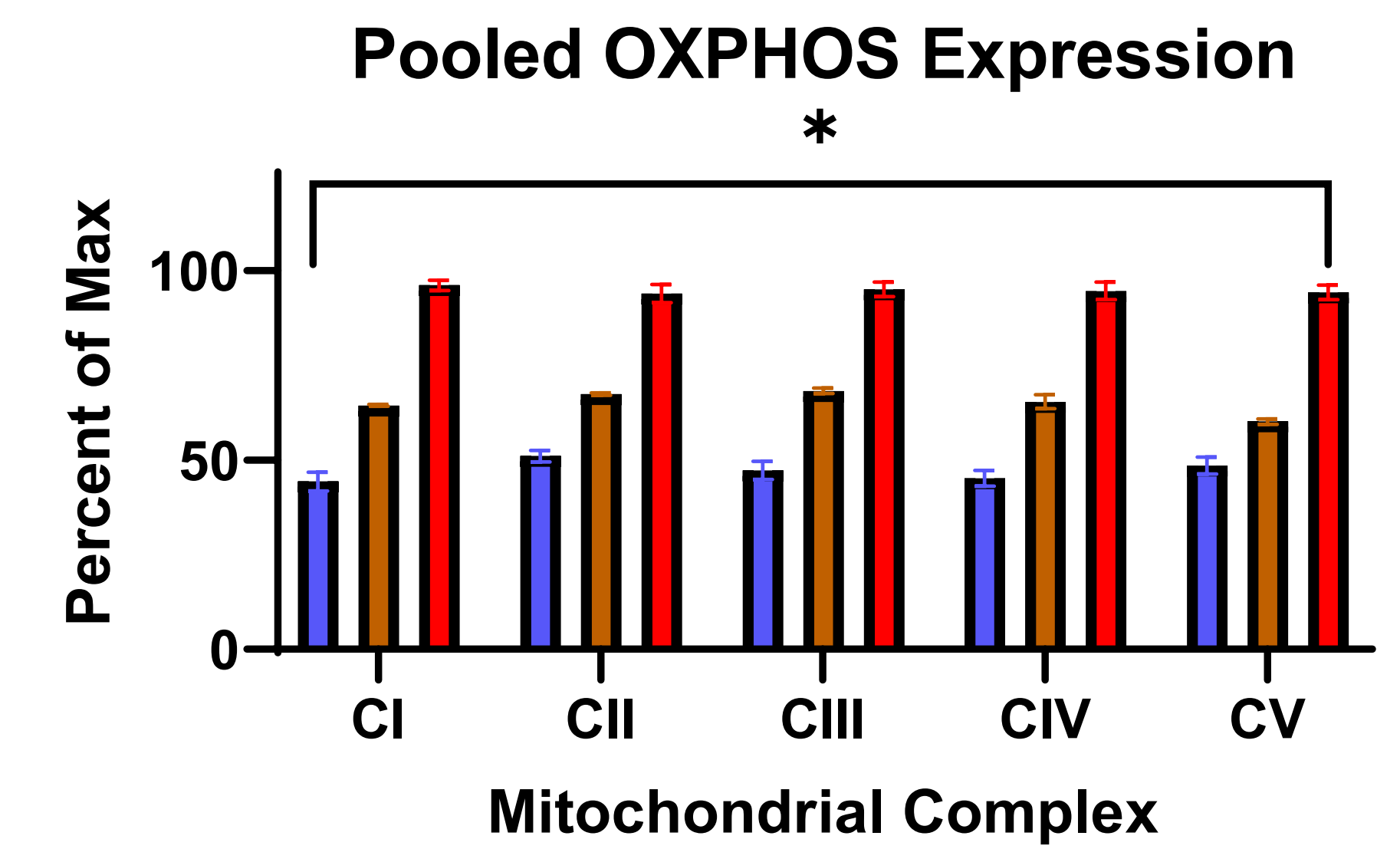


Figure 2: Mitochondrial complex enrichment depicted as % of max content for each complex. Statistics: two-way ANOVA in relationship to colon. *P<0.0332

Complex IV proteome

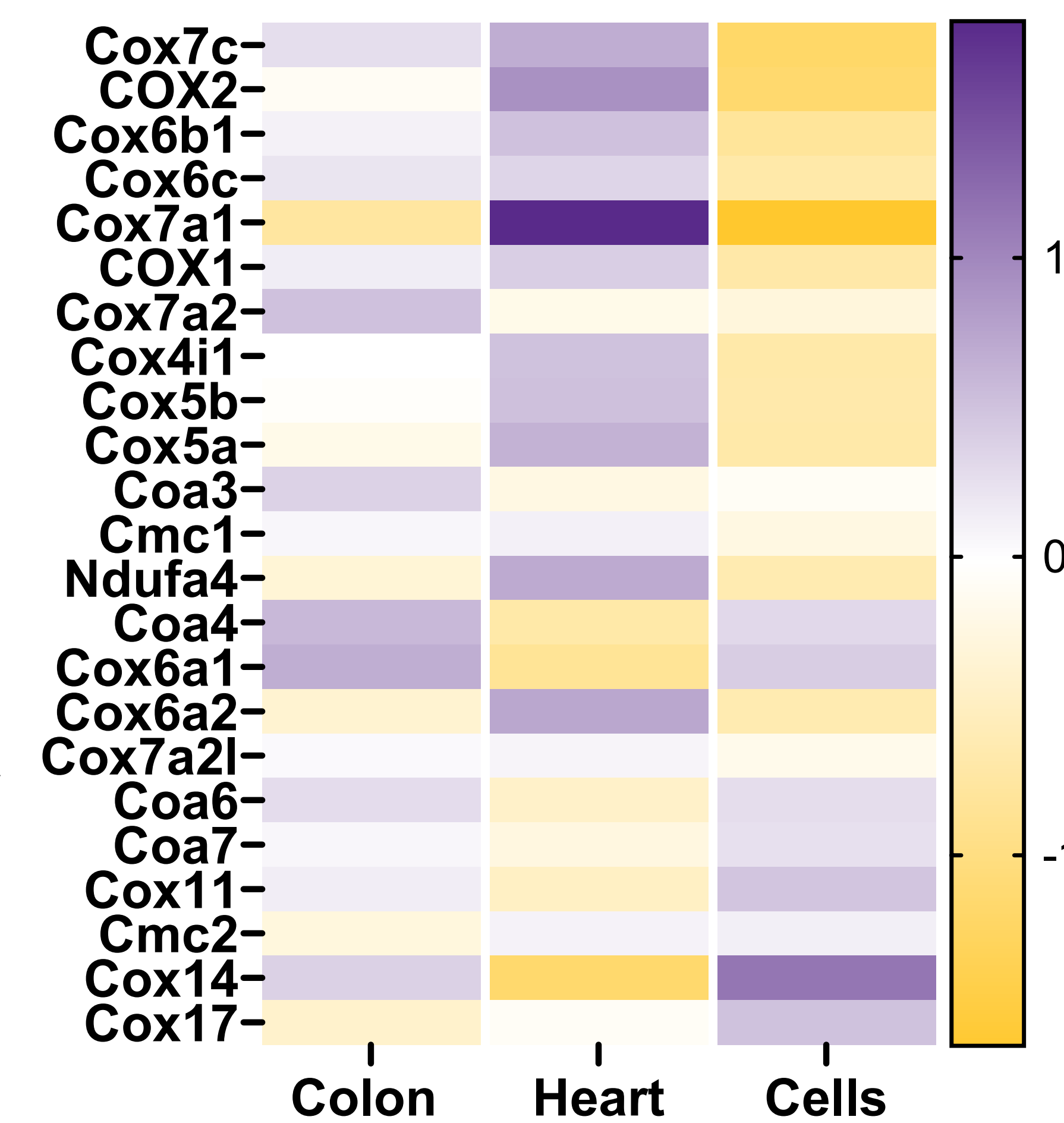


Figure 3 Complex IV proteome. We investigated intrinsic differences in the mitochondrial proteome across the groups. In this figure we depict complex IV proteins per group. N=4/group

AOM-DSS Model Tumor vs Normal

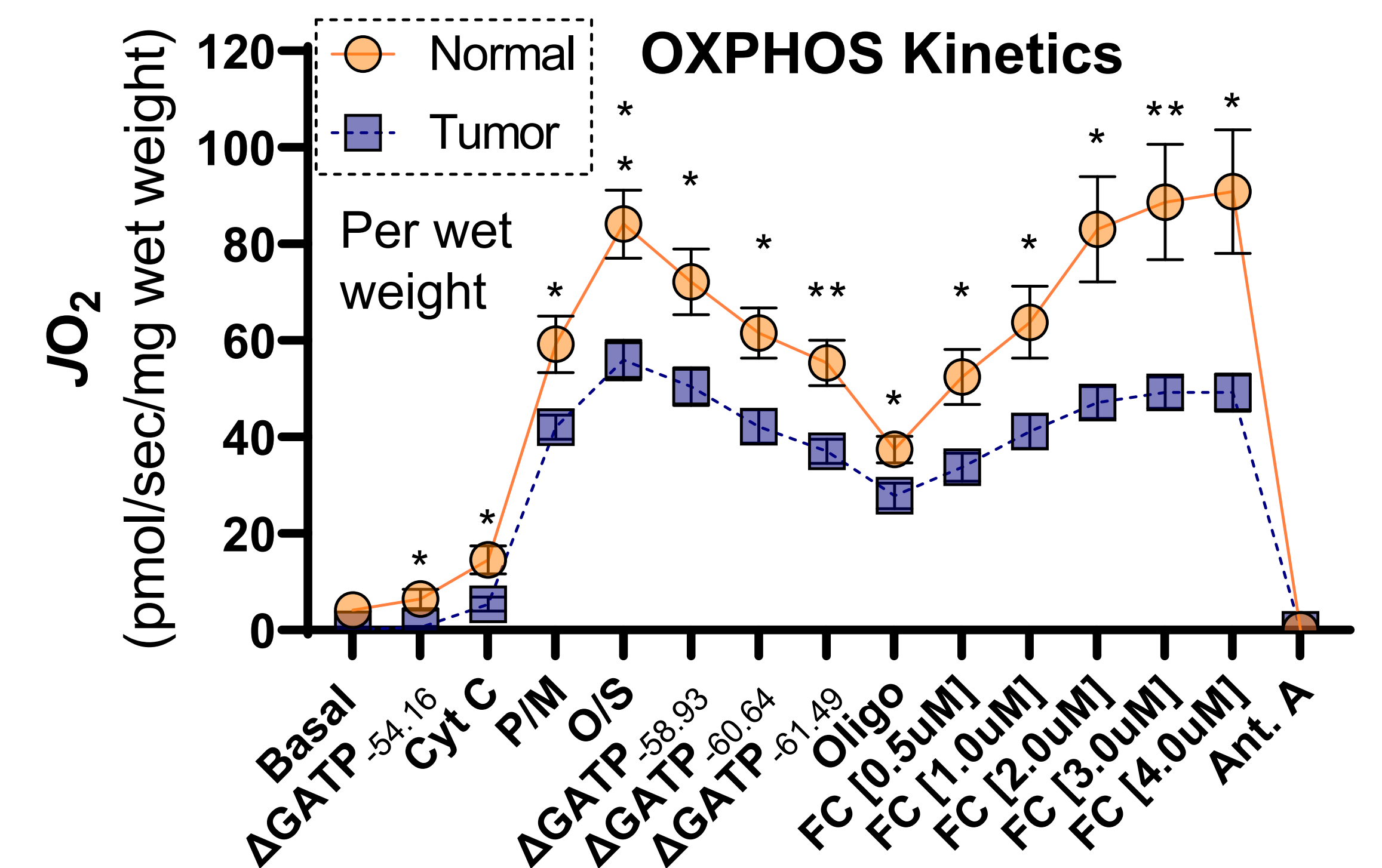


Figure 4 AOM-DSS Colorectal cancer mouse model. Respiration data from the PCR titration and FCCP titration protocol in permeabilized tumor strips and colon strips (normal). Data was normalized to wet weight of tissue. Statistics: two-way ANOVA N=8/Group *P<0.05