**INTRODUCTION**

- E-cigarette use is on the rise in western populations resulting in a ban, by the FDA, on flavored e-cigarette pods except for menthol and tobacco.
- Certain states, like New York, have also placed regulation on Menthol flavored e-cigarettes.
- JUUL Labs now only sells Menthol, Classic Tobacco, and Virginia Tobacco pod flavors.
- JUUL Pods are composed of PG/VG, nicotine, benzoic acid, and flavors.
- E-cigarettes and flavoring chemicals have been shown to induce mitochondria and mitochondrial dysfunction.

**METHODS**

- Beas2b were grown in DMEM:F12 complete media with 5% FBS, 15mM HEPES, and 1% pen/strep.
- Cells were serum deprived to 0% FBS and exposed, immediately or 24 hours, to Menthol.
- 300,000 cells were plated in each well of a 6 well plate and exposed, immediately or 24 hours after final exposure, to air, to air, and to menthol.
- Cells were serum depleted to 0% FBS and exposed, immediately or 24 hours, to JUUL Menthol.
- 300,000 cells were plated in each well of a 6 well plate and exposed, immediately or 24 hours after final exposure, to air, to air, and to menthol.
- ETC proteins were compared using total OXPHOS antibody.

**RESULTS**

- Immediate post-Menthol exposure resulted in a significant increase in non-mitochondrial oxygen consumption and proton leak, while significantly decreasing coupling efficiency.
- 24 hours after final Menthol exposure resulted in a significant increase in non-mitochondrial respiration while significantly decreasing basal respiration, maximal respiration, and spare respiratory capacity.
- JUUL Menthol exposure decreased electron transport chain proteins.
- JUUL Virginia Tobacco exposure did result in a significant increase in non-mitochondrial oxygen consumption at both time points but did not alter mitochondrial respiration at either time points.
- JUUL Virginia Tobacco exposure resulted in a significant increase in certain ETC proteins at the immediate.

**SUMMARY**

- Non-mitochondrial oxygen consumption is increased in JUUL Menthol and JUUL Virginia Tobacco exposed cells.
- JUUL Menthol exposure may induce a shift towards glycolysis due to an increase in extracellular acidification rate, a measure of glycolysis in the cell mito stress test.
- JUUL Menthol and not JUUL Virginia Tobacco exposure results in decrease in mitochondrial respiration with a decrease in basal respiration at the twenty-four hour time point and a decrease in complex I, II, and IV at the immediate time point and complex I at the twenty-four hour time points.

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