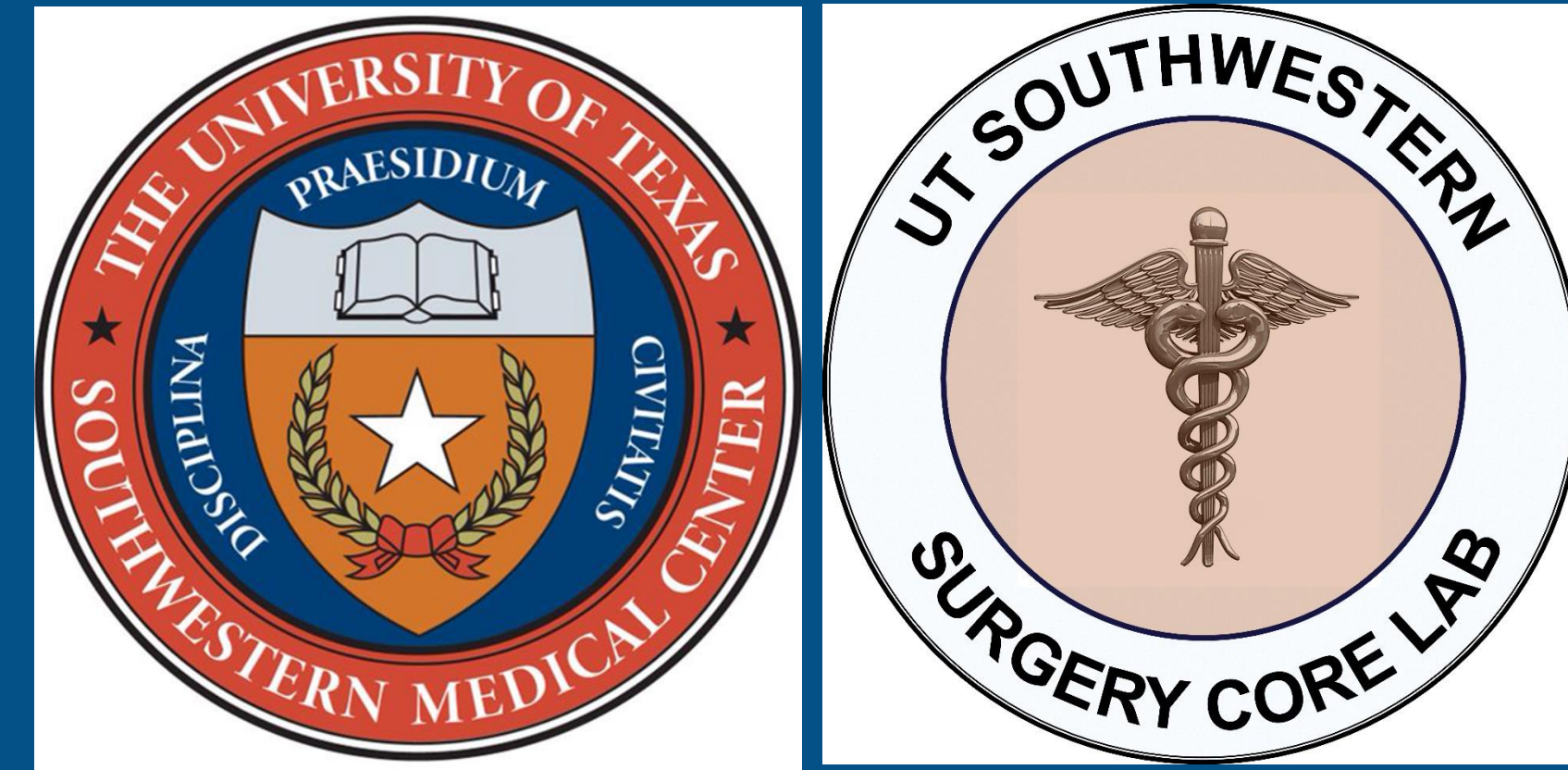


Burn serum stimulated mitochondrial fission was decreased with IL-6 antibody treatment

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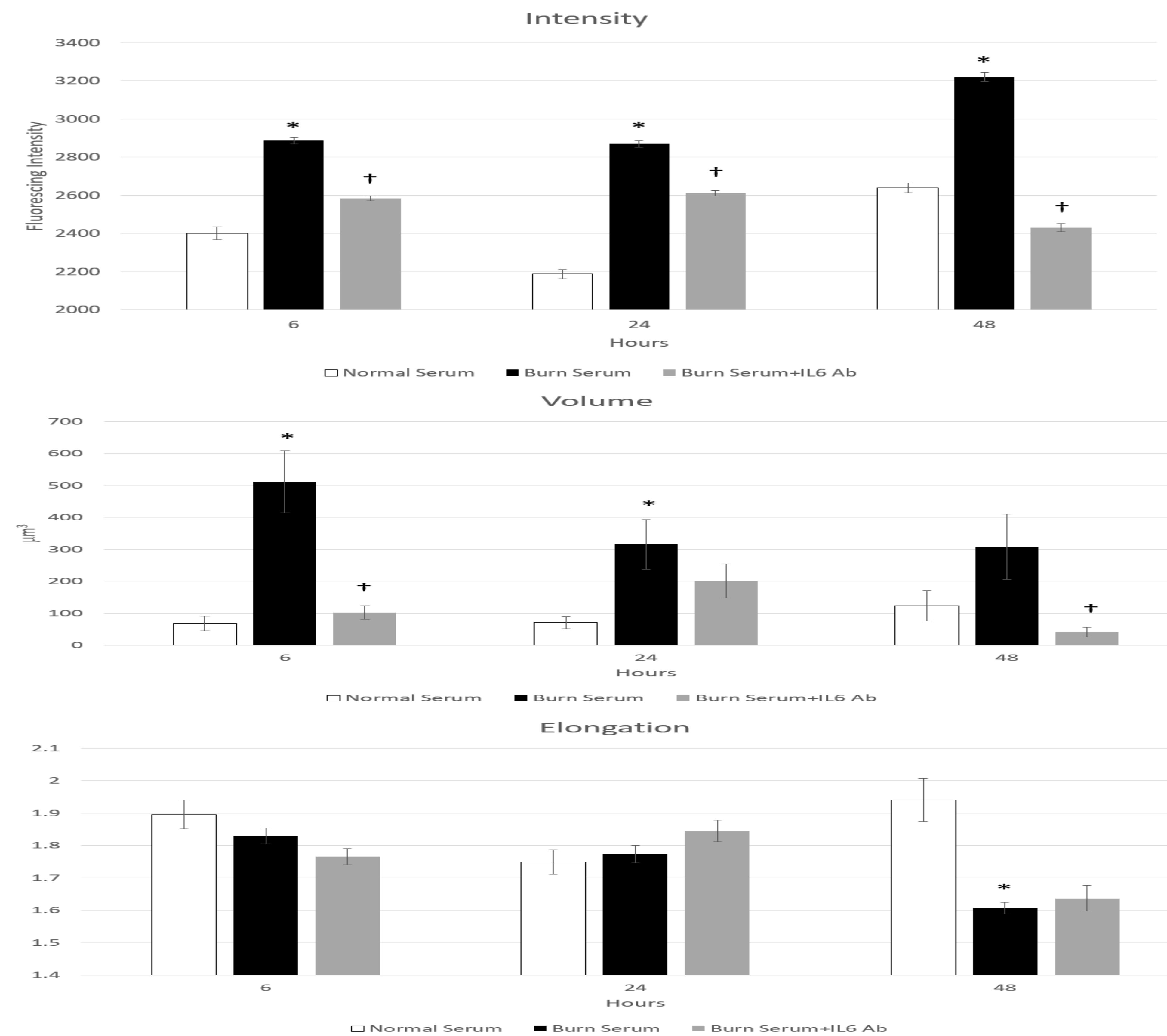
BACKGROUND

- Burn patients suffer muscle mass loss associated with increased muscle cell death.
- Previous experiments have shown increased mitochondrial fragmentation and cell death in C2C12 myoblasts stimulated with burn serum.
- IL-6 as the key cytokine in burn serum has been shown to increase mitochondrial fragmentation.
- We hypothesize that inhibition of IL-6 expression in burn serum alleviates mitochondrial fragmentation.

METHODS

- Murine myoblasts C2C12 cells were cultured with recombinant IL-6 protein from 0.1, 1, 10 and 100 ng/ml for dose response test.
- The cells were stained with MitoTracker Green FM dye and live cell images were taken under a Nikon Ti Eclipse Confocal microscope.
- C2C12 cells were exposed to medium containing 1) 10% serum from control rats, 2) 10% serum from burn rats, and 3) 10% serum from burn rats and 0.5 µg/ml of IL-6 antibody. All cells were labeled as the first experiment and live cell images were recorded.
- Cell lysate was collected for caspase 3 activity measurement

RESULTS #1: THE INTENSITY AND VOLUME OF STAINED CELL MITOCHONDRIA WITH NORMAL, BURN SERUM, AND BURN SERUM+IL-6AB TREATMENT



* p<0.05, between normal and burn † p<0.05, between burn and burn+IL6Ab

CONCLUSION

- IL-6 stimulates an increase in mitochondrial fragmentation in C2C12 cell myoblasts.
- IL-6 antibody treatment decreases mitochondrial fragmentation in burn serum stimulated myoblasts.
- Muscle cell death decrease with decreased caspase 3 activity in burn serum stimulated myoblasts treated with IL-6 antibody.

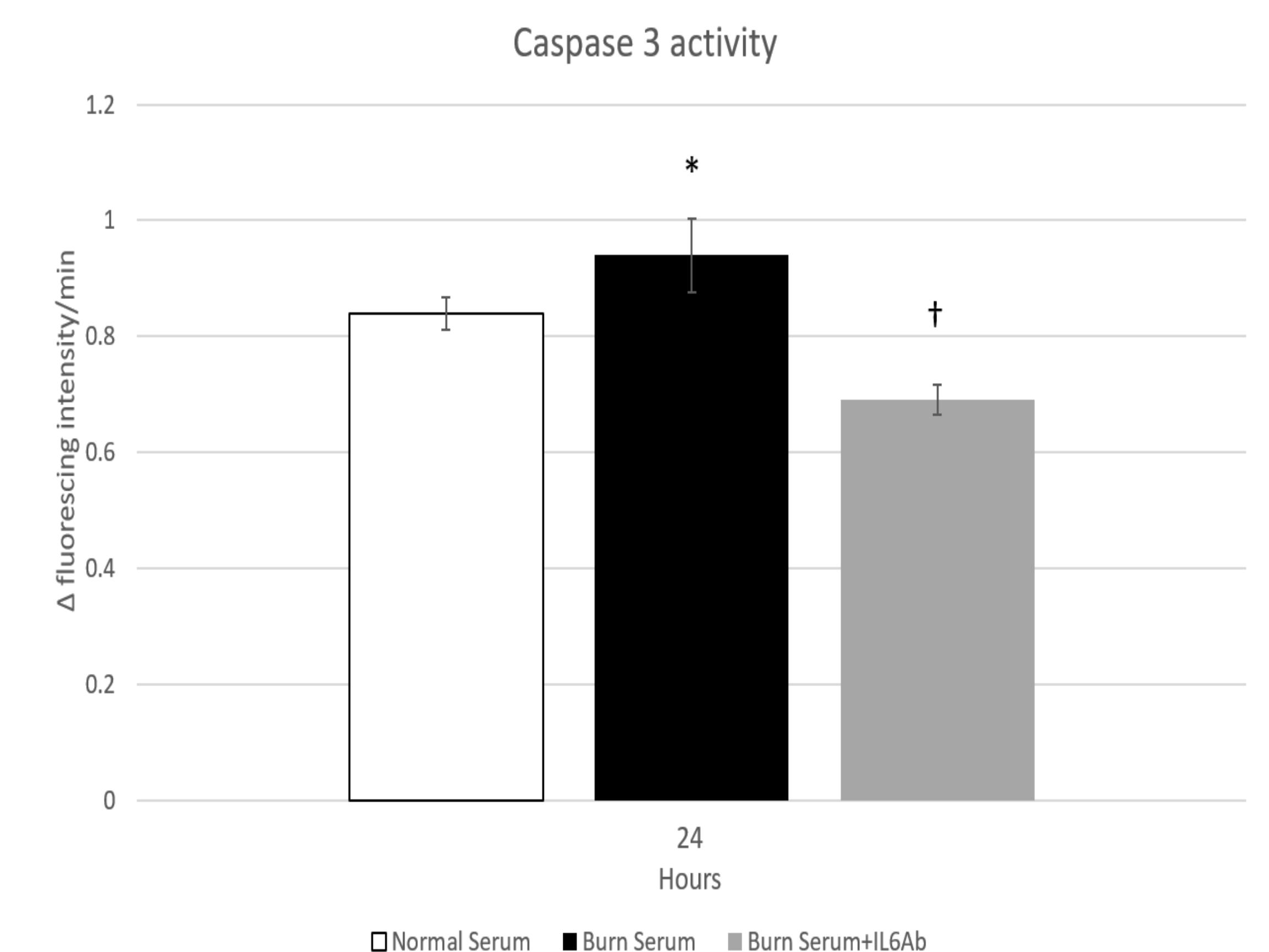
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ACKNOWLEDGEMENT

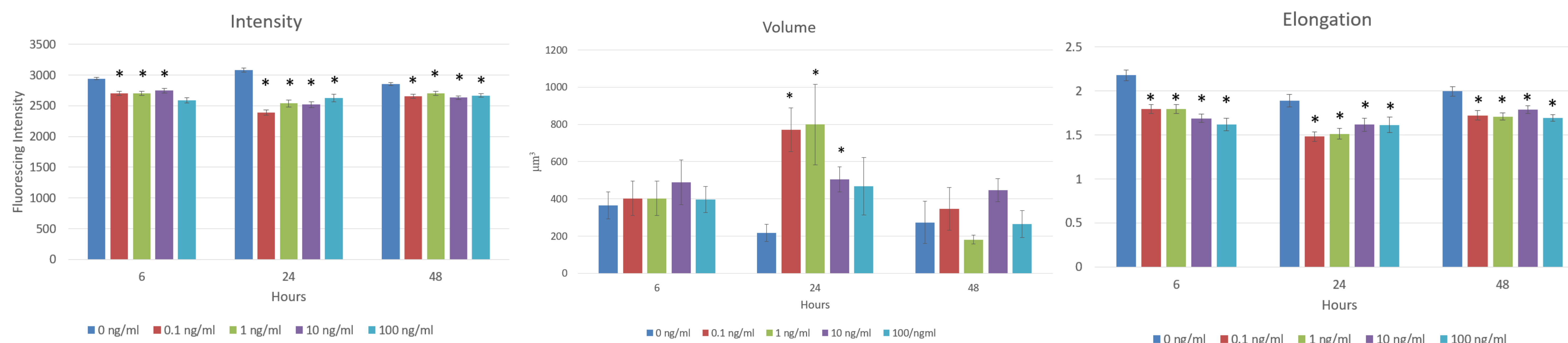
- Golden Charity Guild Charles R Baxter, MD Chair Department funding
- Medical Student Summer Research Program

RESULTS #3: CASPASE 3 ACTIVITY IN C2C12 CELLS WITH RAT SERUM STIMULATION FOR 24 HOURS



* p<0.05, between normal and burn † p<0.05, between burn and burn+IL6Ab

RESULTS #2: THE INTENSITY, VOLUME, AND ELONGATION OF STAINED CELL MITOCHONDRIA WITH IL-6 TREATMENT



* p<0.05, between control and dose at same time point