SYNCHRONIZED RF & HIFEM: ACTIVATION OF MYOSATELLITE CELLS

ACTIVATION OF SKELETAL MUSCLE SATELLITE CELLS BY A DEVICE SIMULTANEOUSLY APPLYING HIFEM TECHNOLOGY AND NOVEL RF TECHNOLOGY: FLUORESCENT MICROSCOPY FACILITATED DETECTION OF NCAM/CD56

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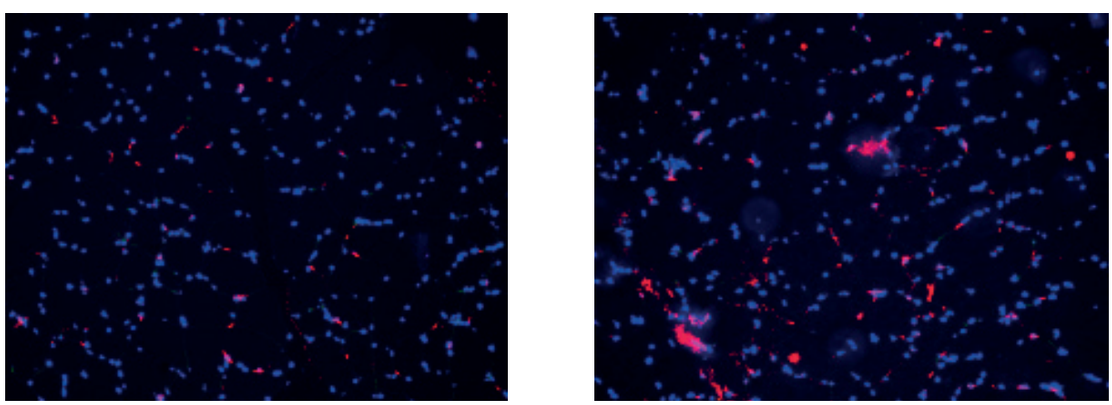
HIGHLIGHTS

- The study was primarily focused on **Satellite cells** (muscle stem cells) that differentiate to **form new muscle fibers** or new myonuclei **supporting growth** of existing fibers.
- The levels of **satellite cells** increased by **30.2%** at 2 weeks FU.
- Histology images showed **hypertrophic fibers** and **newly formed myofibers**.
- The **muscle temperature** was between **40 - 41°C** during the whole procedure.
- The observed **results** are equivalent to **12-16 weeks of intense** exercise programs.



Immunofluorescence images captured at baseline (left) and 2 weeks post-treatment (right) showing an increase in the satellite cell levels. The satellite cells are stained by red color. Blue color represents the myonucleus.

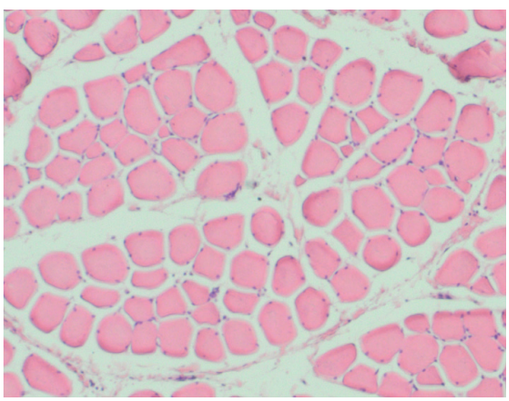
STUDY DESIGN

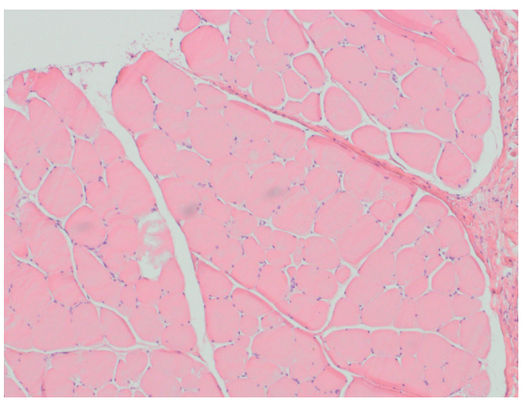
- 5 Large White pigs (approximately 6 months old).
- All animals received **three 30-minute** treatments applied to **half** of the abdomen (1 tx per week).
- The **opposite site** of the abdomen was used as a **control area**.
- A total of **275 histological** slices were processed.

1 biopsy specimen (ϕ6mm) was collected from the treatment site and 1 from control site at baseline, 4 days, 2 weeks and 1 month after the last treatment

RESULTS

- **Increased levels** of satellite cells suggested **formation of new muscle** fibres and corresponded to the **hypertrophic changes**.
- **Procedure** based on stimulating and heating muscle tissue **was effective and did not cause any muscle damage**.





Tissue images collected 1 month after treatments (right) showing pronounced thickening of muscle fibers and increased density of muscle tissue when compared to baseline (left).