VEGF-111
as a new therapeutic tool
for tendon lesion

Introduction

• **Tendon lesion**
  = one of the *most frequent* pathologies.
  = often becomes *chronic*.
• New treatments → PRP → releasing GF.
• **VEGF-A** → induce positive effects on vascular function and **angiogenesis**.
• **VEGF-111** = biologically active and proteolysis-resistant.
Methods

- All experimental procedures and protocols used in this investigation were reviewed and approved by the Institutional Animal Care and Use Committee of the University of Liège.
Methods

60 rats:
5mm defect surgically induced in the *Achilles* tendons

- **Group A**
  - Control
  - 30 rats

- **Group B**
  - VEGF-111 treatment in situ after the surgery
  - 30 rats
Methods

• Rats of group B: in situ VEGF-111 injection (100ng)

• Then: rats of both groups were placed in their cages without immobilization.
Methods

- **Dissection and sampling of traumatized tendons: 15 rats/group**
  - Day 0, Day 5, Day 15, Day 30
- **Surgery**
- **Biomechanical tensile test up to rupture (“Cryo-jaw”)**
- **Euthanasia**
Methods

• Statistical analyses were made with an **ANOVA**. Values are significant when p-value is below 0.05.
Results: force (N)

![Graph showing force (N) over time (days) for Control and VEGF-111 groups.](image-url)
Results: section (mm²)
Results: force/weight (N/100g)

[Graph showing force/weight (N/g) over time (days) with control and VEGF-111 lines]
Results: constraint (MPa)

![Graph showing constraint (MPa) over time (days) for Control and VEGF-111 conditions.](image-url)
Discussion

• A 100ng injection of VEGF-111 stimulated tendon healing process
  → increasing stress needed to break tendons during its healing process.
  → increasing constraint in comparison with the control group.
Conclusion

- Accelerate tendon healing process
- Improve tendon quality

VEGF-111

Increase the force needed to rupture tendon
Thank you for your attention.

jfkaux@chu.ulg.ac.be

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Thanks to: