



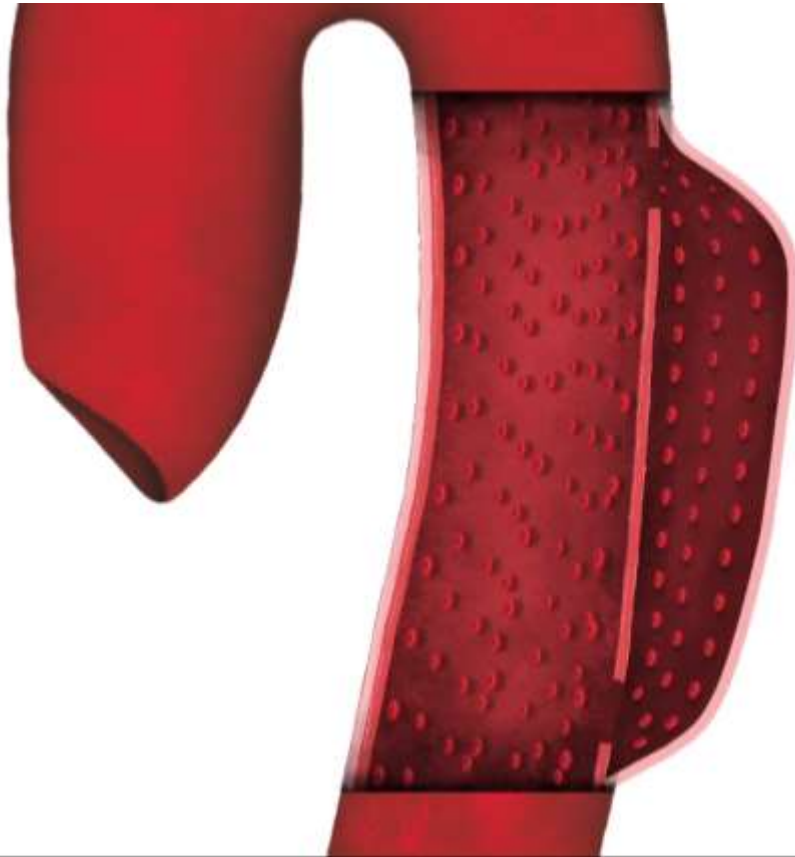
13th International Symposium
on Endovascular Therapeutics

Revascularization of a patch to treat aortic dissection

Noemí Balà

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Aortic dissection



3 – 12 out of
100.000
patients/year

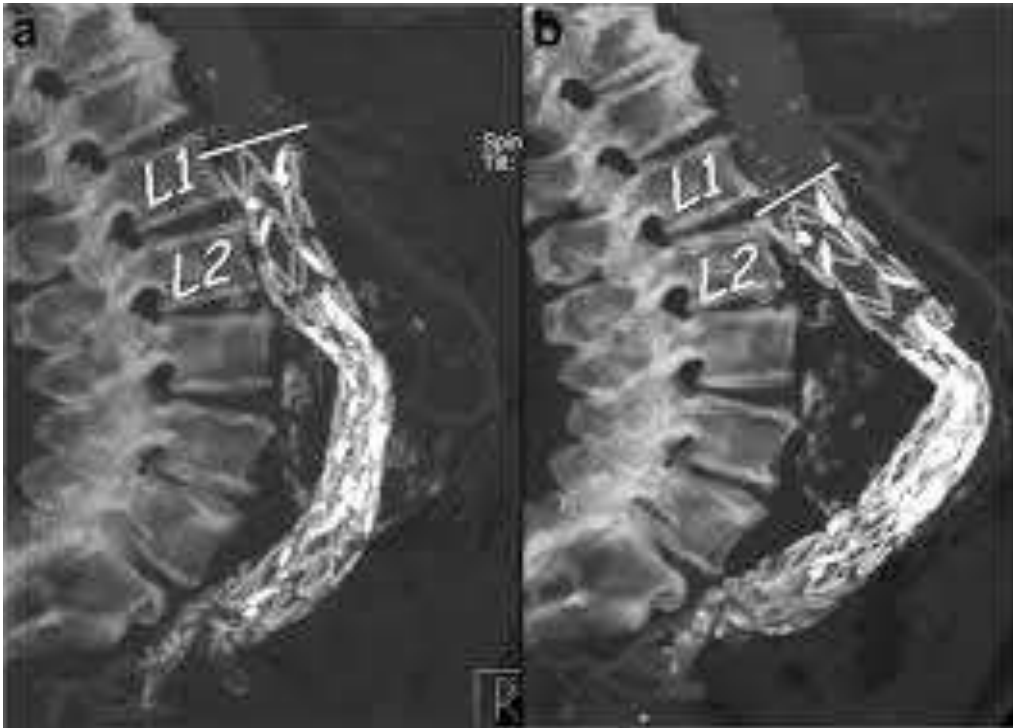
Up to
50%
mortality

Open repair



- High **mortality** rates
- Long **hospitalization** times

Endovascular repair



- Mechanical **failure**

- Biological **failure**

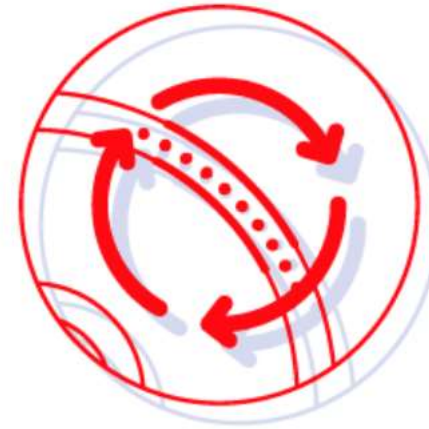
What **we** create



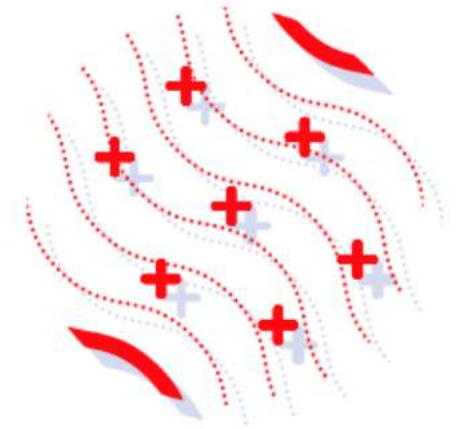
Biodegradable



Viscoelastic

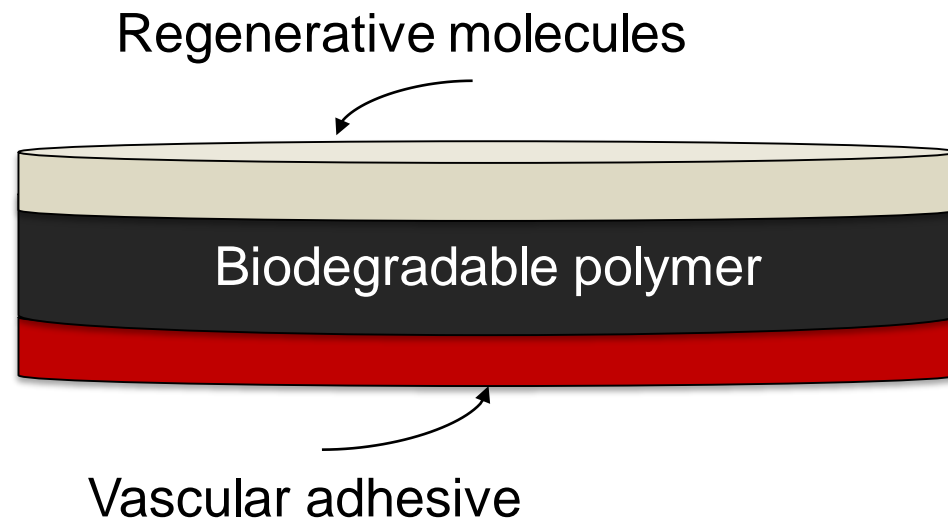


Regenerative



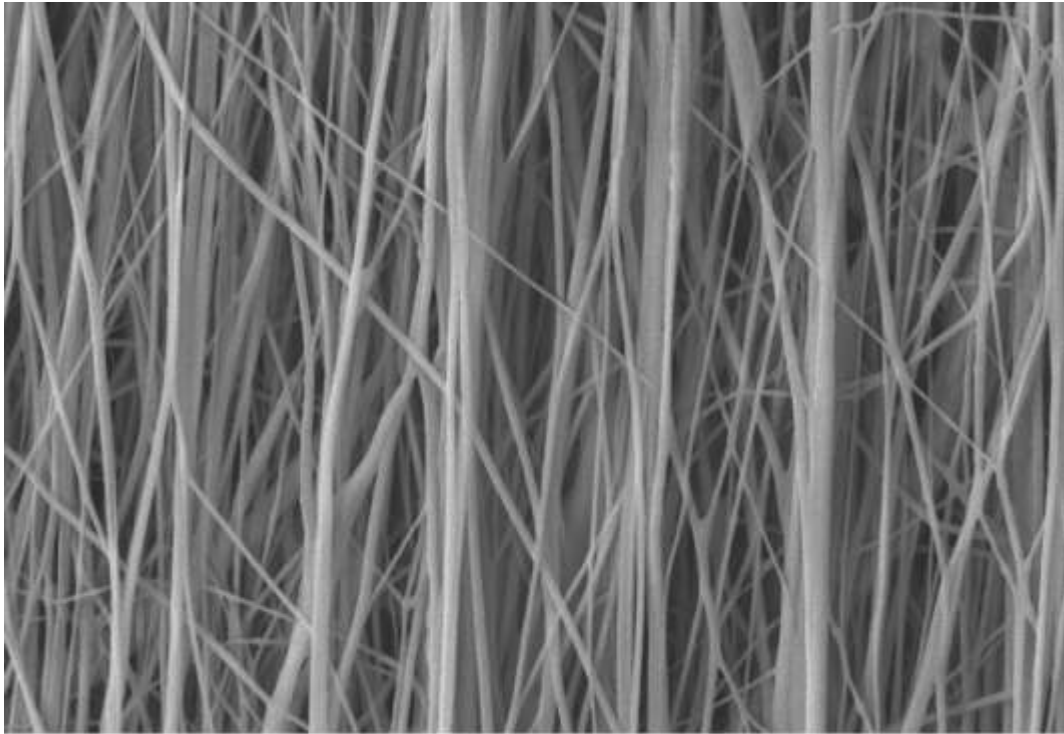
Thrombogenic

The endovascular patch



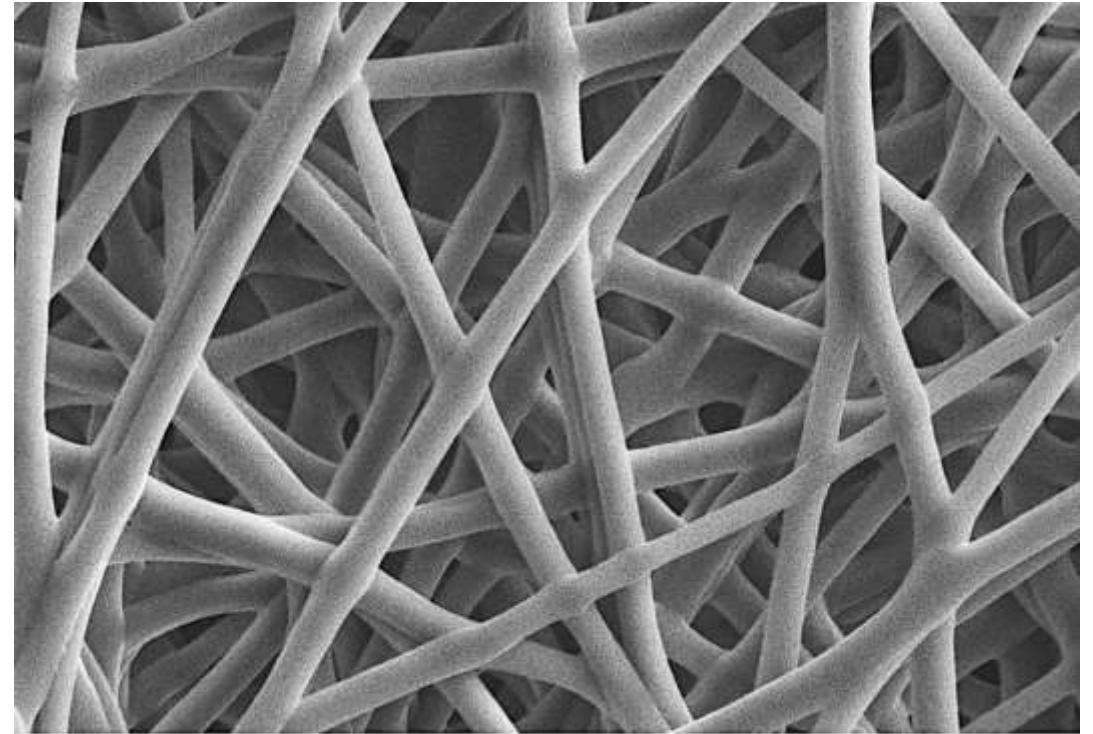
The **microstructure**

Luminal face



30µm

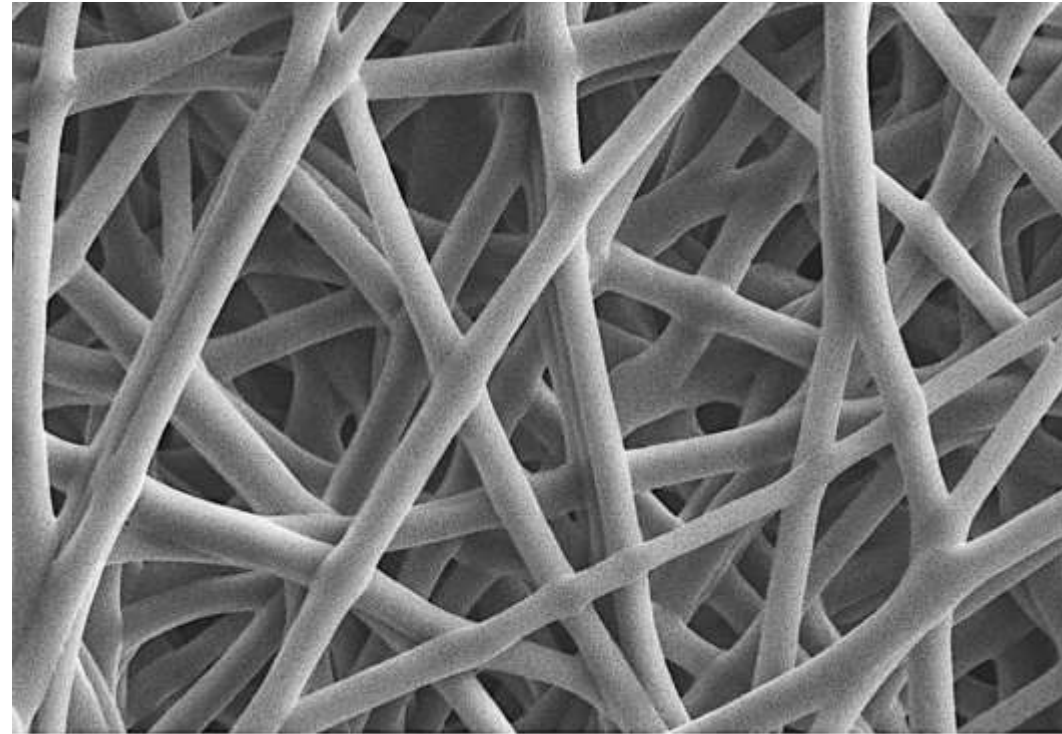
Abluminal face



30µm

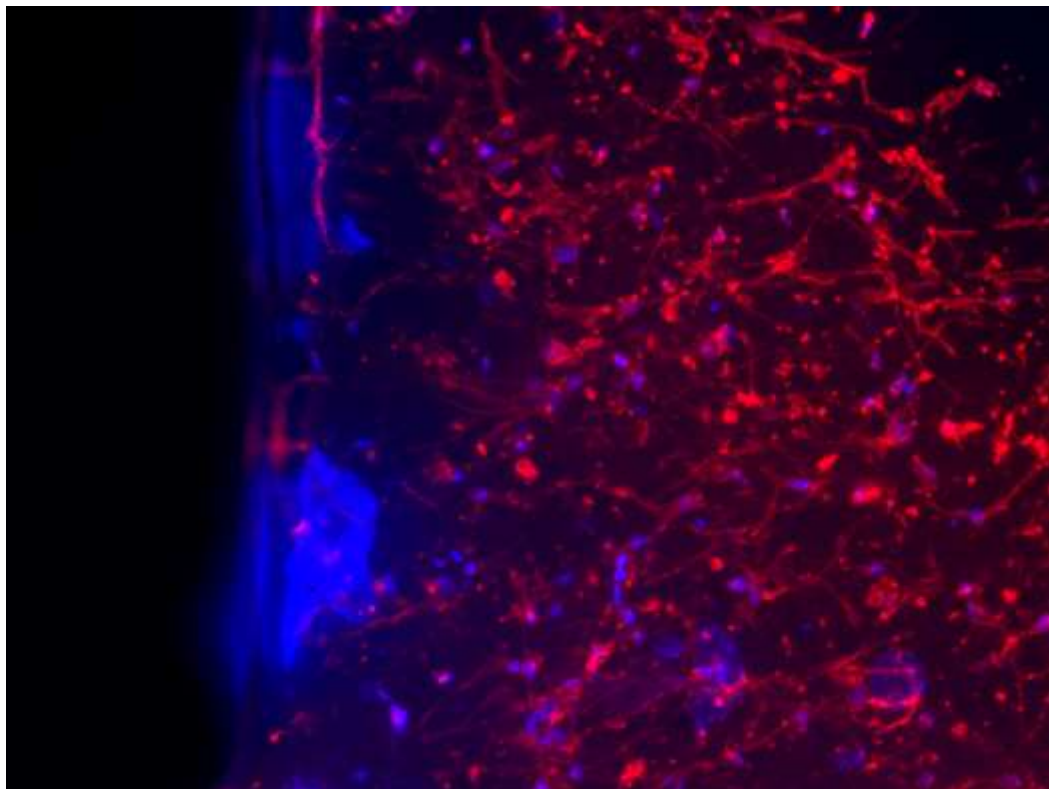
In vitro tests

Single layer

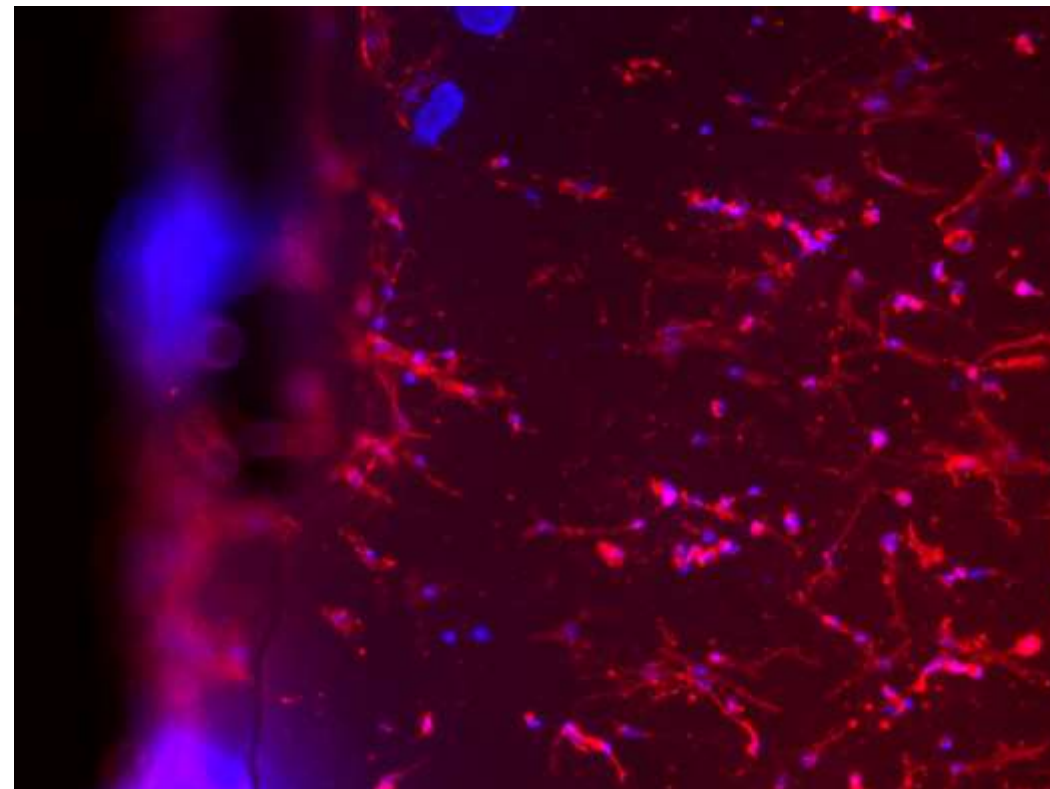


In vitro tests

HAoSMC

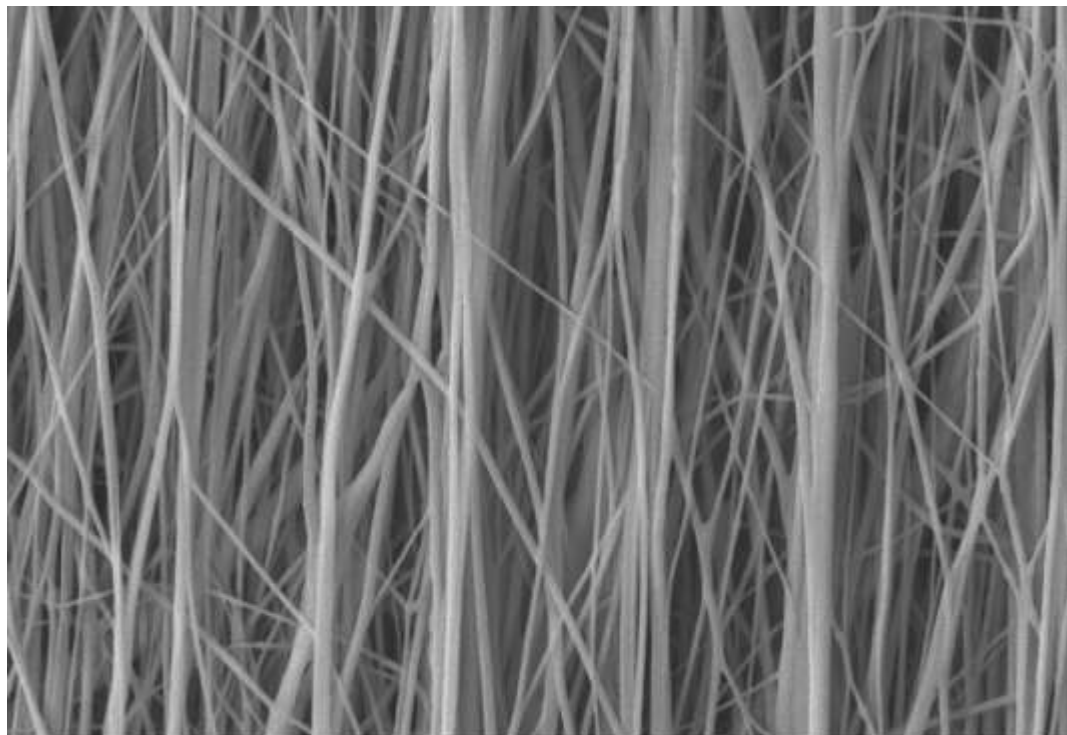


HAoEC



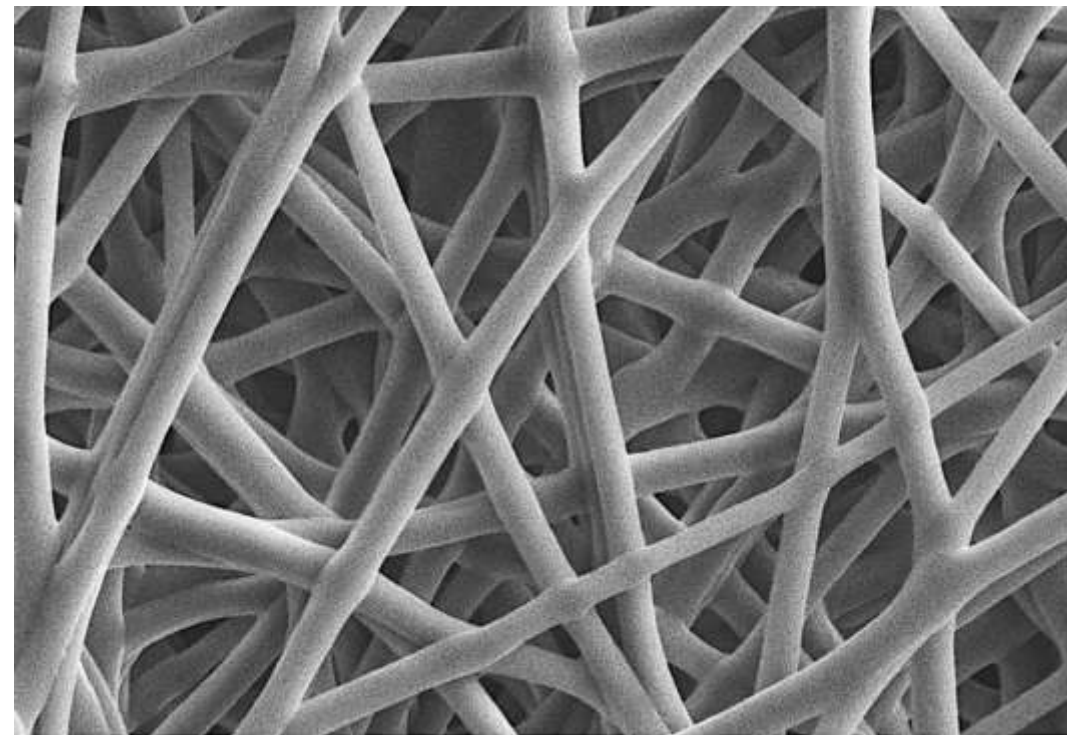
In vitro tests

Abluminal



30μm

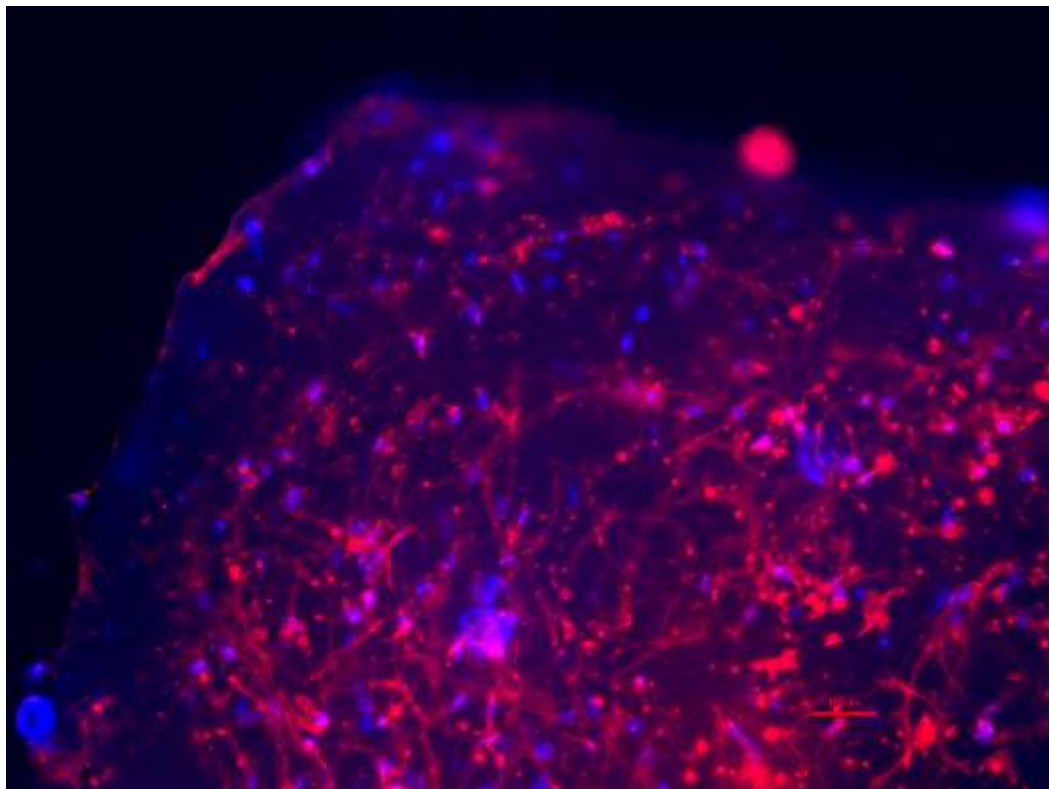
Luminal



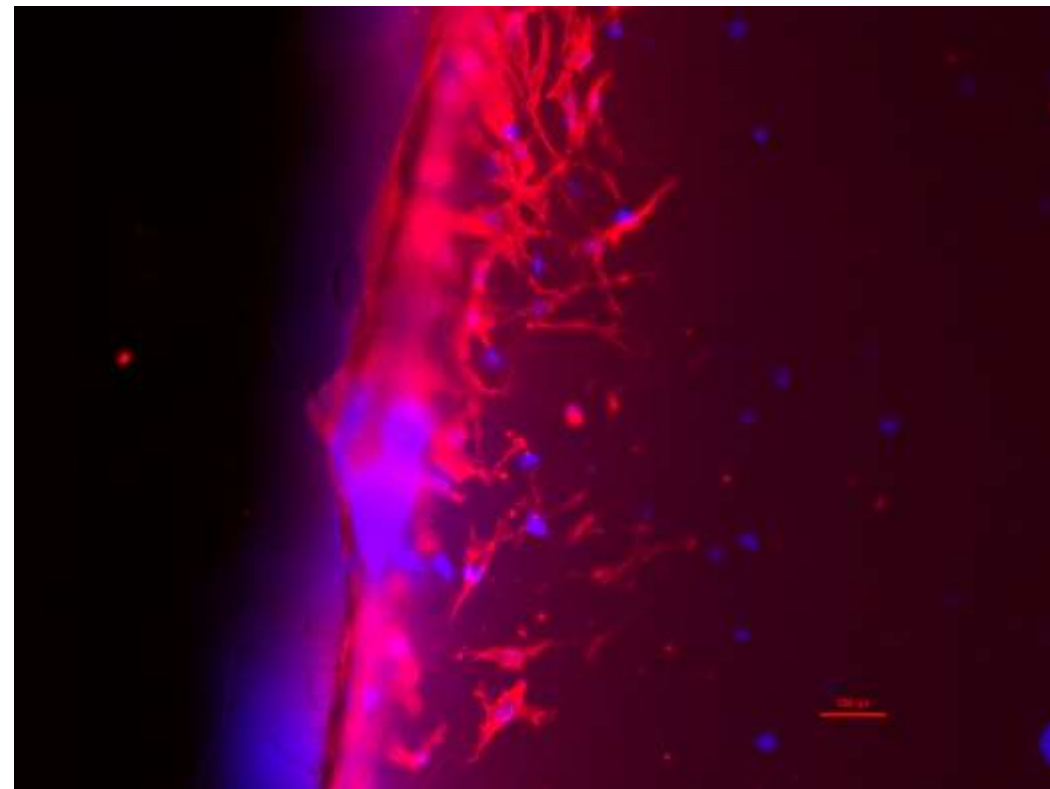
30μm

In vitro tests

HAoSMC

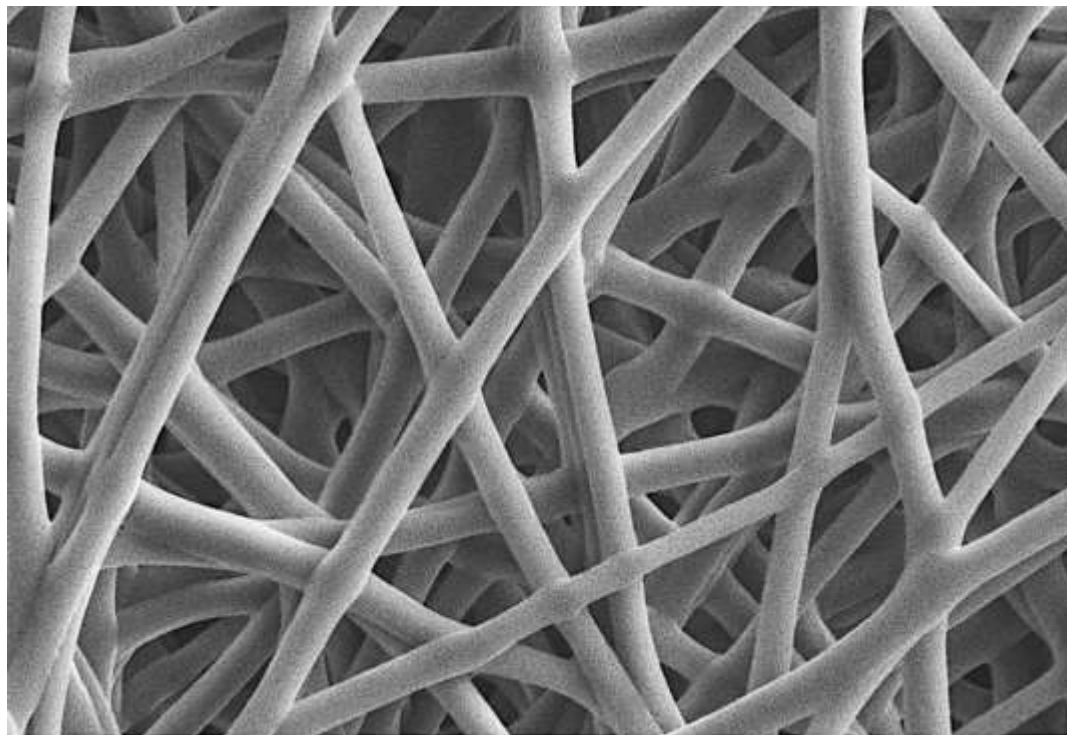


HAoEC



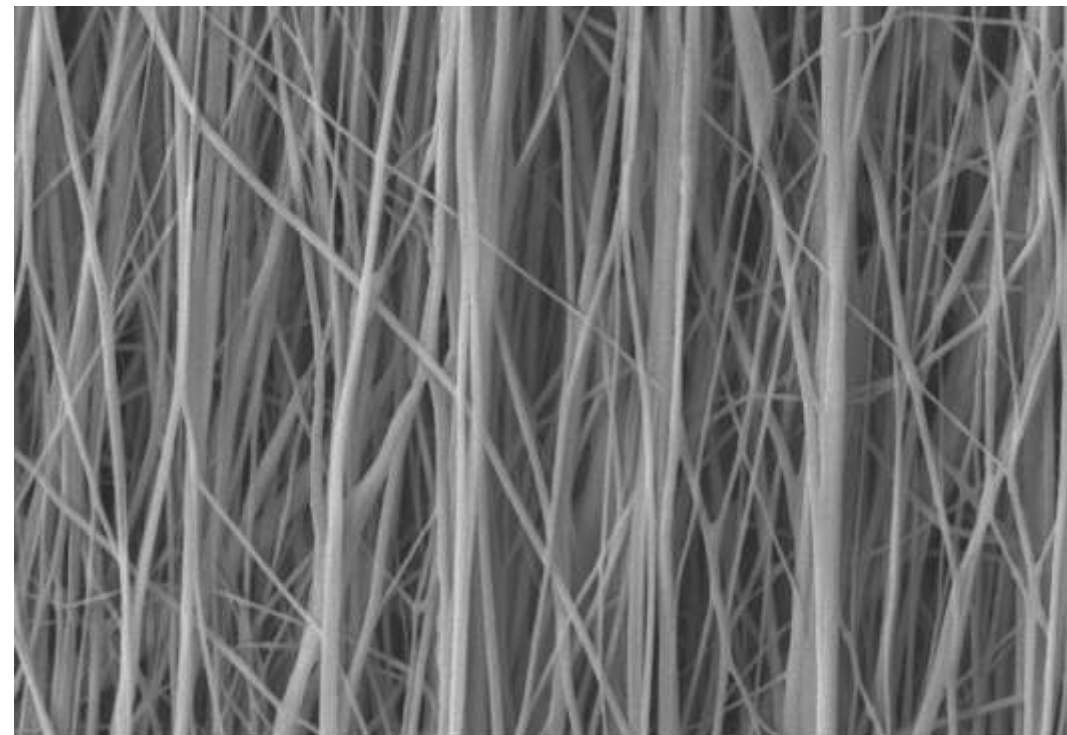
In vitro tests

Abluminal



30µm

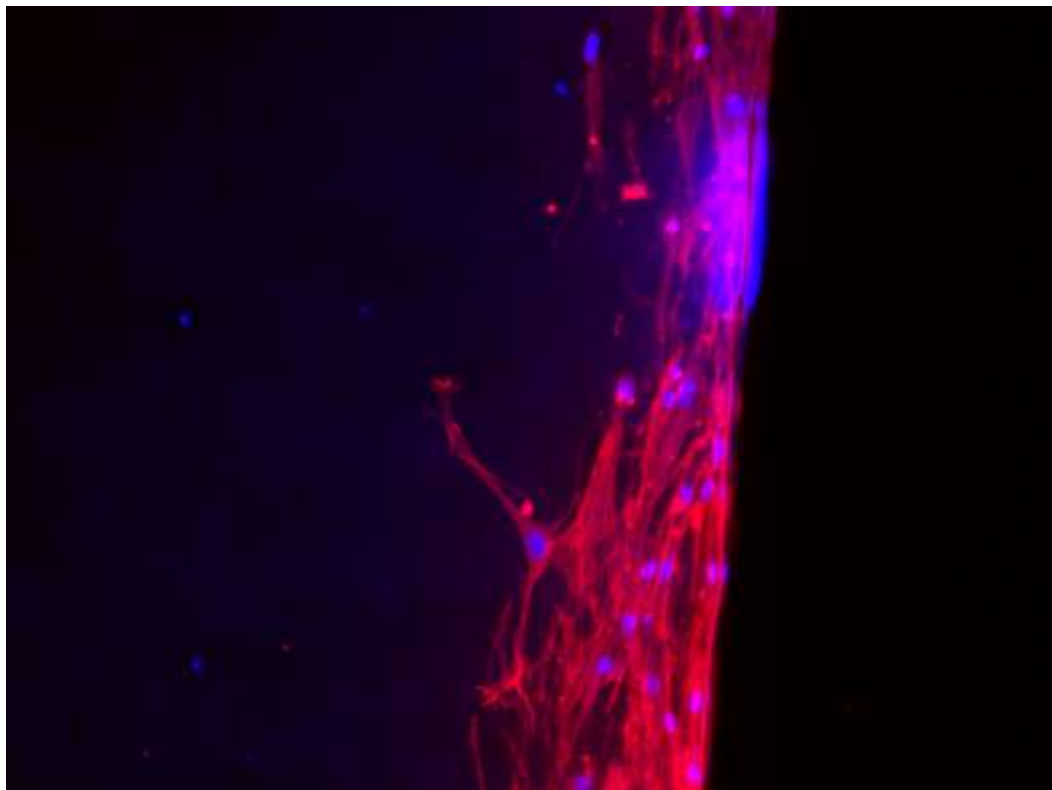
Luminal



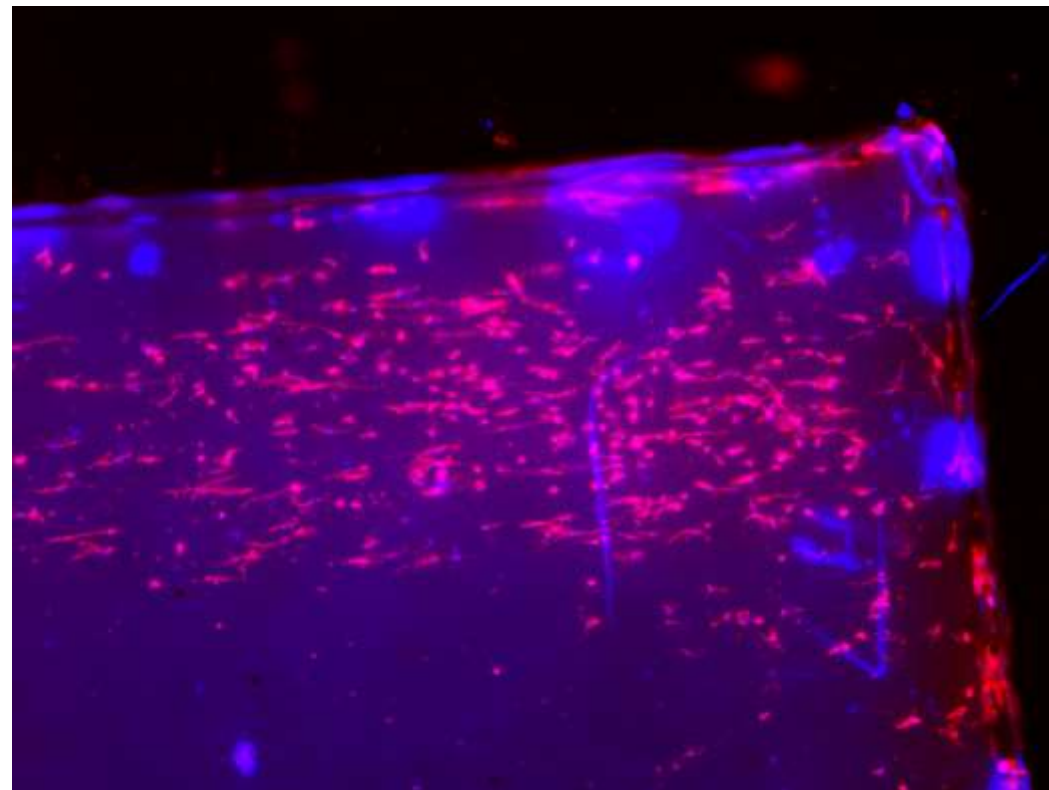
30µm

In vitro tests

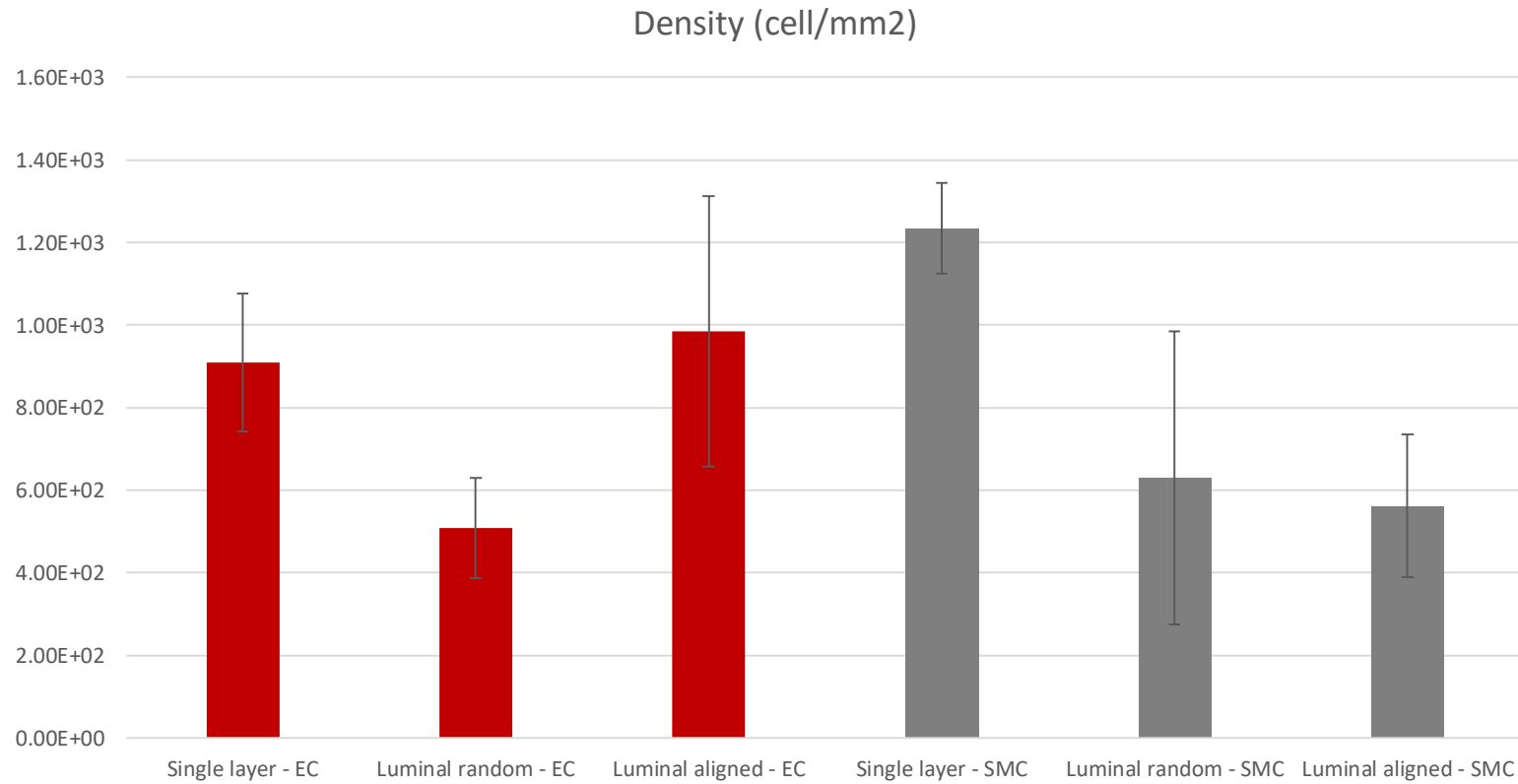
HAoSMC



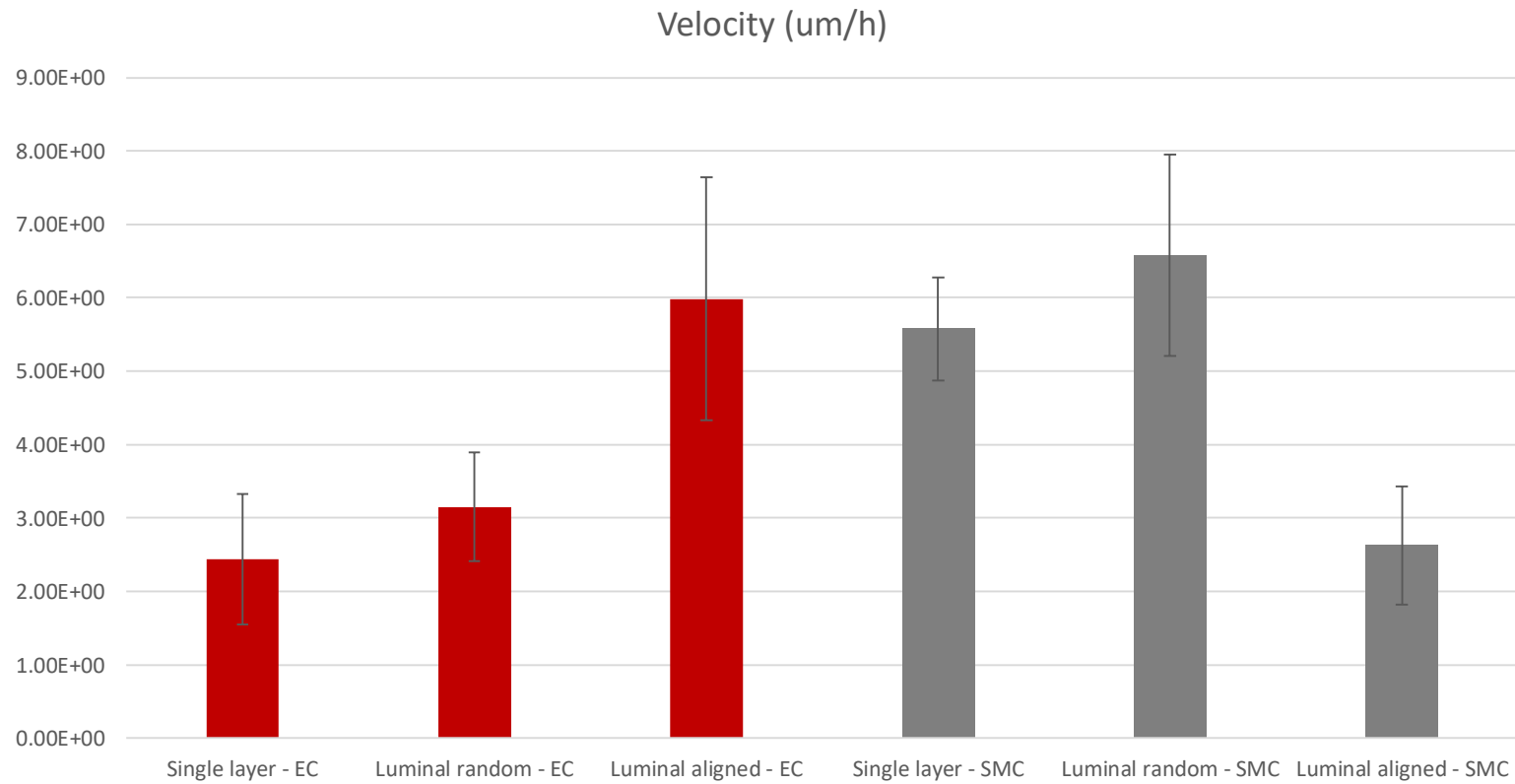
HAoEC



In vitro tests



In vitro tests



Conclusions

- HAoEC present higher cell density and migrate faster when fibers in the luminal layer are aligned than when fibers are randomly orientated.
- HAoSMC present lower cell density and migrate slower when fibers in the luminal layer are aligned than when fibers are randomly orientated.