**Supplementary Material**

**Table S1.** Description of mesh sizes before and after implantation measured with a ruler.

| ID | Time point | Mesh location | Mesh | Mesh Size | Extraction | Notes |
|---|---|---|---|---|---|---|
| 1787 | 3 months | Abdominal mesh upper | PP | 30x30 mm | ~28x30 mm | |
| | 3 months | Abdominal mesh lower | mPCL | 30x30 mm | ~25x35 mm | |
| | 3 months | Vaginal mesh distal | PP | 20x20 mm | ~20x20 mm | |
| | 3 months | Vaginal mesh proximal | mPCL | 20x20 mm | ~20x15 mm | |
| 1788 | 3 months | Abdominal mesh upper | PP | 30x30 mm | ~30x30 mm | |
| | 3 months | Abdominal mesh lower | mPCL | 30x30 mm | ~30x30 mm | |
| | 3 months | Vaginal mesh distal | PP | 20x20 mm | ~20x20 mm | |
| | 3 months | Vaginal mesh proximal | mPCL | 20x20 mm | ~20x20 mm | |
| 1794 | 3 months | Abdominal mesh upper | mPCL | 30x30 mm | ~35x35x20x24 mm | Not square |
| | 3 months | Abdominal mesh lower | PP | 30x30 mm | ~30x30 mm | |
| | 3 months | Vaginal mesh distal | mPCL | 20x20 mm | ~11x20 mm | |
| | 3 months | Vaginal mesh proximal | PP | 20x20 mm | ~20x20 mm | |
| 1795 | 3 months | Abdominal mesh upper | mPCL | 30x30 mm | ~24x26 mm | |
| | 3 months | Abdominal mesh lower | PP | 30x30 mm | ~30x30 mm | |
| | 3 months | Vaginal mesh proximal | mPCL | 20x20 mm | ~22x13 mm | |
| | 3 months | Vaginal mesh distal | PP | 20x20 mm | ~35x5 mm | |
| 1784 | 6 months | Abdominal mesh upper | mPCL | 25x25 mm | NA | |
| | 6 months | Abdominal mesh lower | PP | 20x20 mm | ~19x19 mm | |
| | 6 months | Vaginal mesh proximal | pp | 20x20 mm | ~23x24 mm | |
| | 6 months | Vaginal mesh distal | mPCL | 20x20 mm | NA | |
| 1783 | 6 months | Abdominal mesh upper | mPCL | 30x30 mm | NA | |
| | 6 months | Abdominal mesh lower | PP | 30x30 mm | ~30x22 mm | |
| | 6 months | Vaginal mesh proximal | pp | 20x20 mm | ~19x19 mm | |
| | 6 months | Vaginal mesh distal | mPCL | 20x20 mm | ~20x20 mm | |

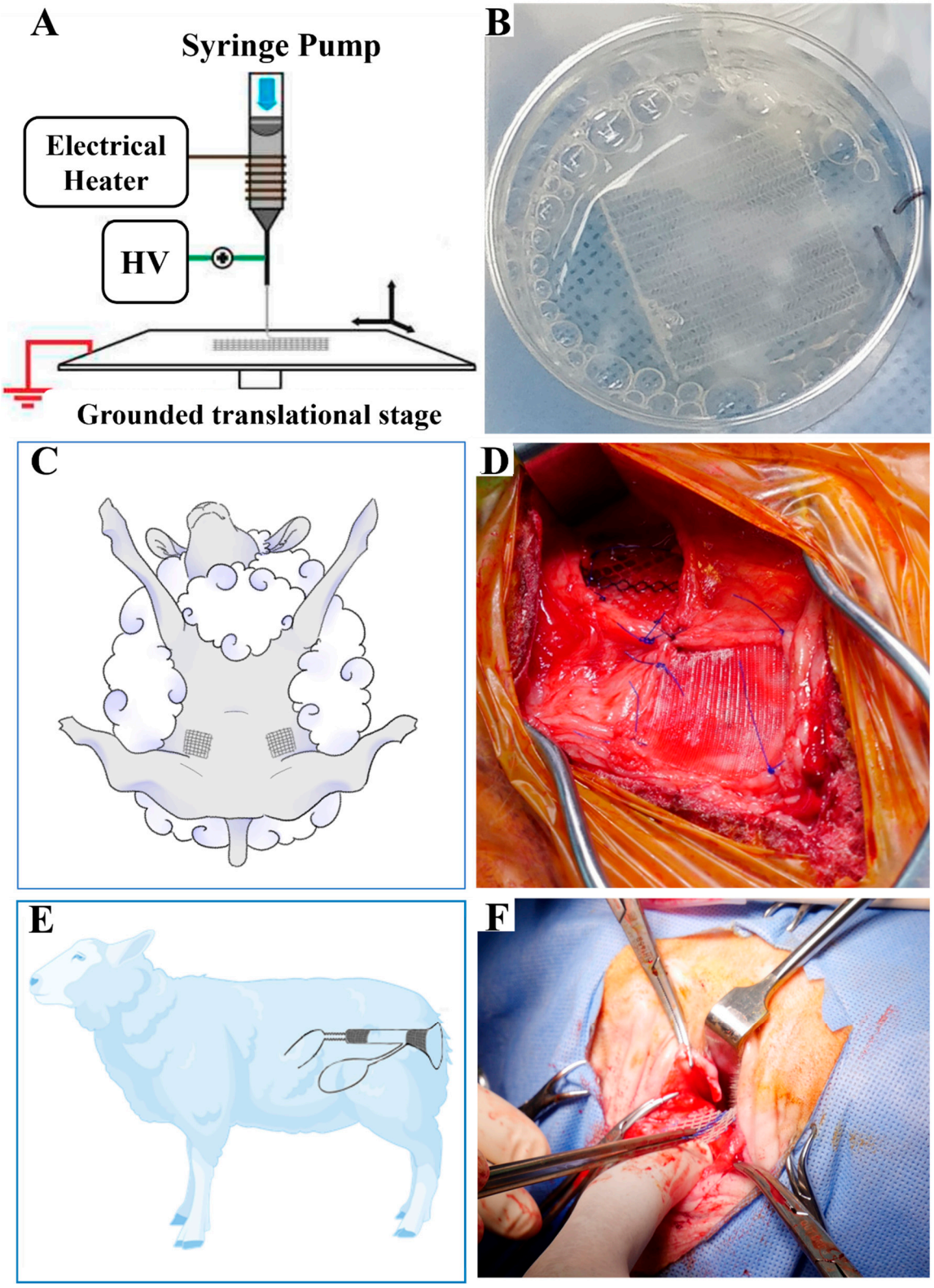


**Figure S1.** (**A**) Melt electrowriting (MEW) (Reproduced from Bas, O. et al.[53]), a technology combining additive manufacturing and electrospinning principles, was used to fabricate the (**B**) Medical grade polycaprolactone (mPCL) mesh scaffolds. Each sheep was implanted in their abdominal wall (**C**) with one PP mesh and one mPCL mesh scaffold (**D**); and in their vaginal floor (**D**) with one PP mesh and one mPCL mesh scaffold (**E**). Image (**D**) was partially created with BioRender.com. Anatomical structure in image (D) was modified with permission from [54].

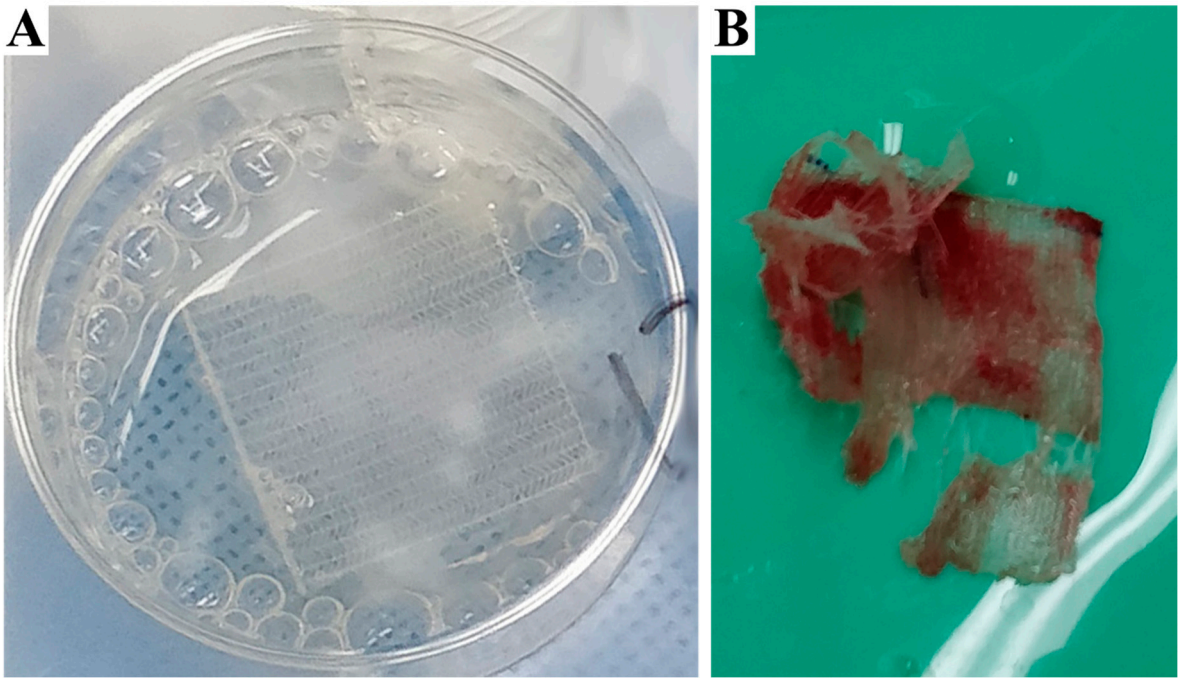


**Figure S2.** A) Image of mPCL mesh scaffold before implantation. B) image of mPCL mesh scaffold with inferior mechanical properties which were replaced immediately during the implantation surgeries. If the post treatment for surface hydrolyzation and/or sterilization is not performed according to protocol the mechanical properties of the scaffold (A) are reduced significantly. As shown in image B, the manufactured mesh failed already during suturing at the time of surgery. Hence, the failed mesh was immediately retrieved from surgical site and replaced with a new mesh scaffold.

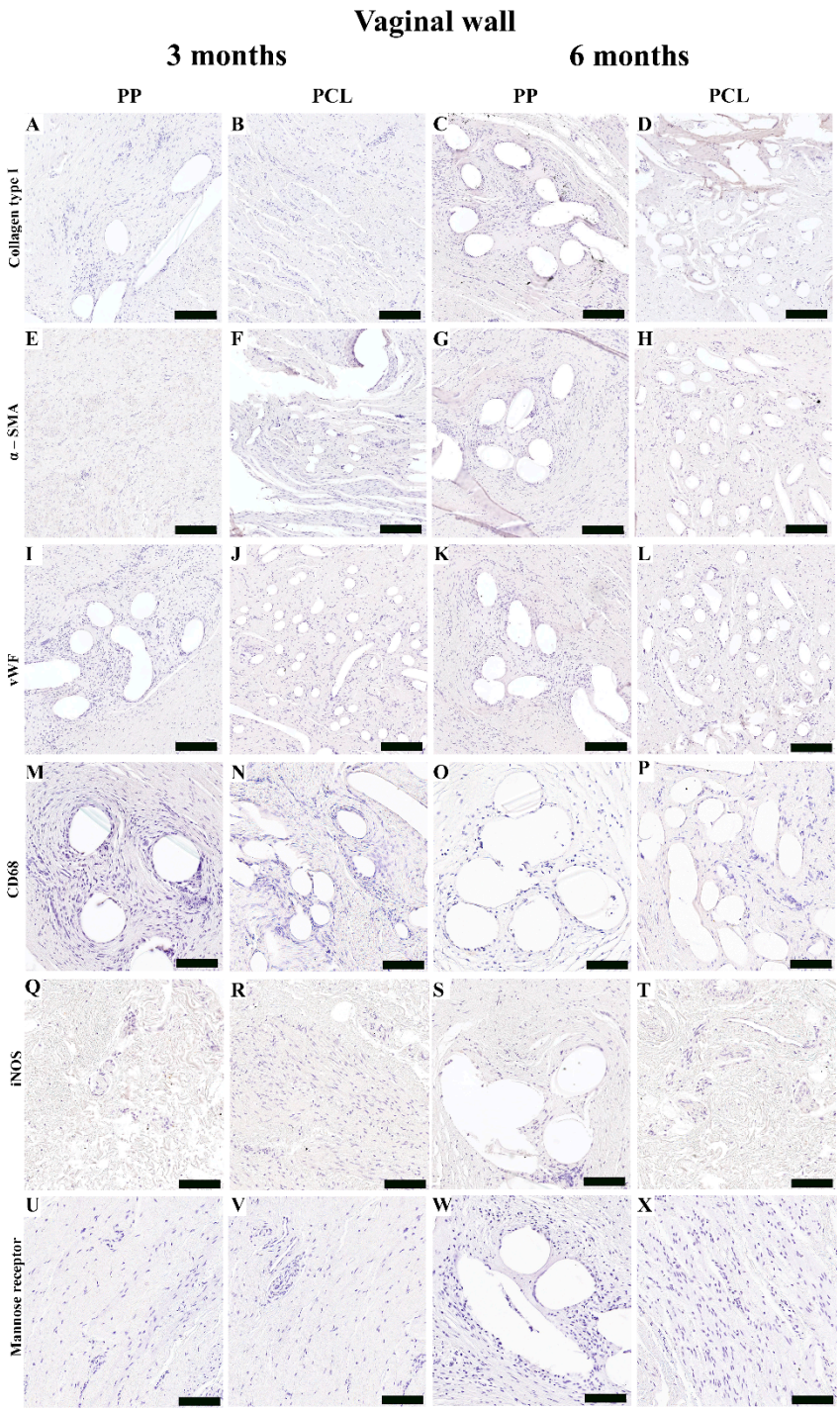


**Figure S3.** Immunohistochemistry overview of the vaginal wall implanted with the PP mesh and mPCL mesh scaffold at 3- and 6-months' time point isotypes. The cellular responses of the new tissue formed was evaluated using Collagen type I (A – D); anti-smooth muscle actin (α-SMA) (E – H); von Willebrand factor (vWF) (I – L); CD68 macrophages (M – P); inducible nitric oxide synthase (iNOS) (M1) (Q – T); and Mannose receptor (M2) (U – X). The same isotype tissue section was used for COL I vaginal POP and PCL groups 3- months' time point; α-SMA vaginal POP and PCL groups at 3 months' time point; iNOS vaginal POP and PCL groups at 3 months' time point and PCL at 6 months' time point; and Mannose receptor POP and PCL groups 3- months' time point Scale bars: A – L) 200 μm; M – X) 100μm

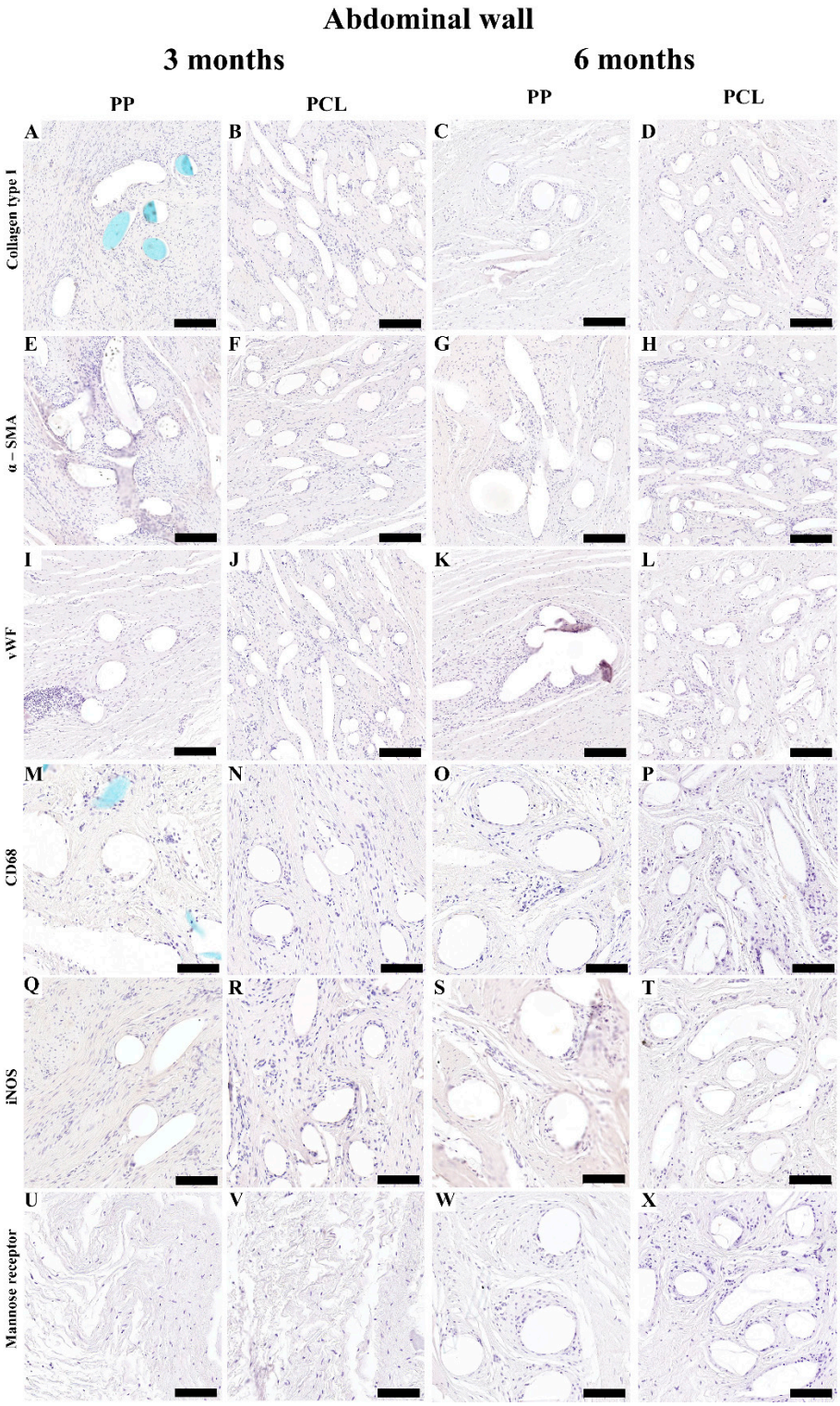


**Figure S4.** Immunohistochemistry overview of the abdominal wall implanted with the PP mesh and mPCL mesh scaffold at 3- and 6-months' time point isotypes. The cellular responses of the new tissue formed was evaluated using Collagen type I (A – D); anti-smooth muscle actin (α-SMA) (E – H); von Willebrand factor (vWF) (I – L); CD68 macrophages (M – P); inducible nitric oxide synthase (iNOS) (M1) (Q – T); and Mannose receptor (M2) (U – X). Control tissue was used as isotype for Mannose receptor abdominal POP and PCL groups 3- months' time point. Scale bars: A – L) 200 μm; M – X) 100μm