Supplementary information

For

Viability and functionality of neonatal porcine islet-like cell clusters bioprinted in alginate-based hydrogel blends

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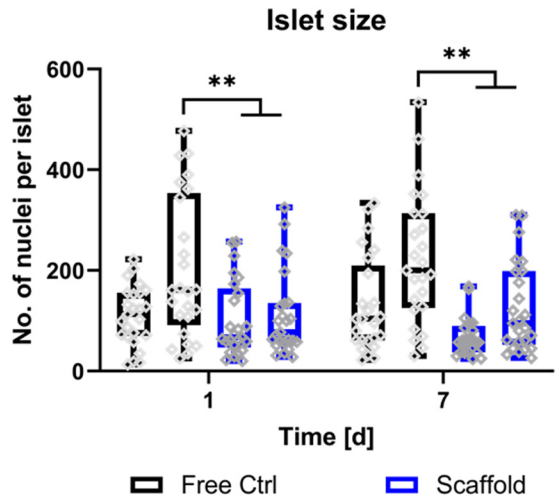
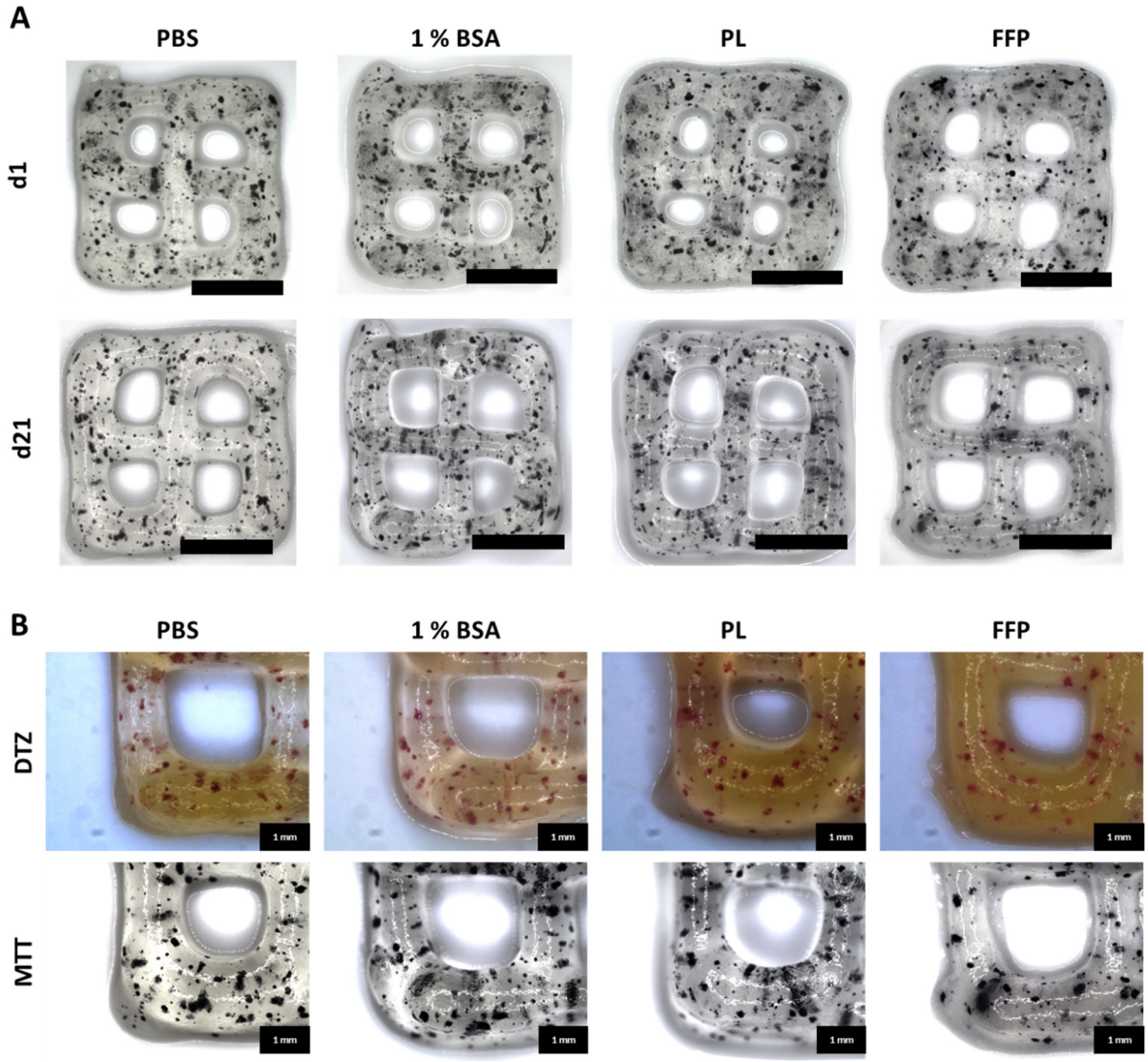
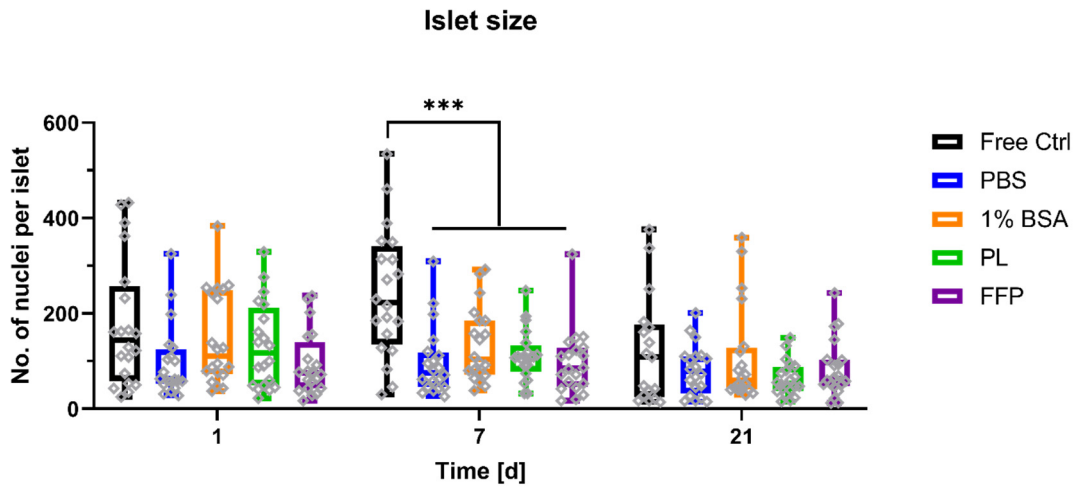


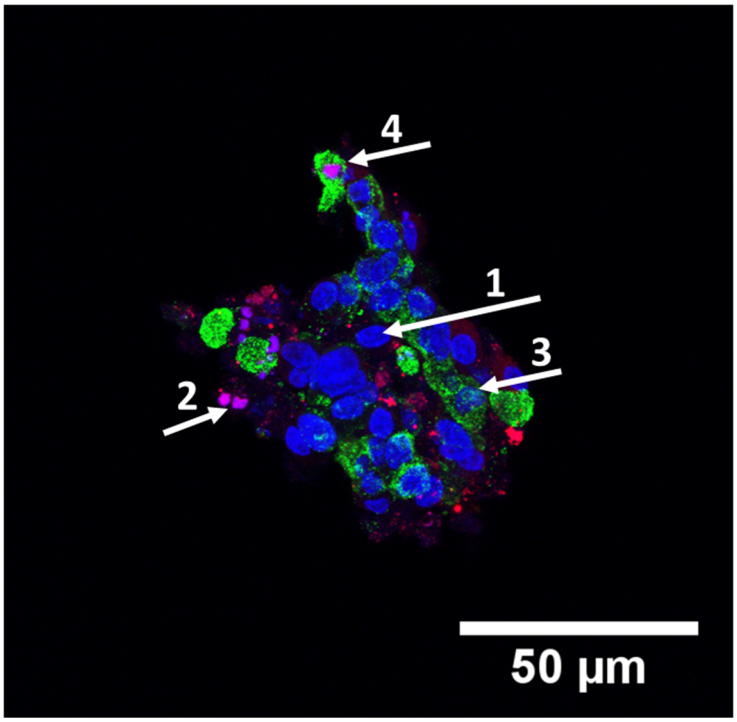
Supplementary Figure S1: Size distribution of NICC in suspension culture and bioprinted in algMC scaffolds determined by means of counting nuclei in DAPI stained 2D cross-sections. Mean ± SD, n=2 experiments, 25 islets each, $^{**}p<0.01$. Repeat experiments depicted as neighbouring box plots, grey dots indicate individual islets.



Supplementary Figure S2: Macroscopic view of the distribution, insulin content (DTZ), and metabolic activity (MTT) of bioprinted NICC in (supplemented) bioinks. Depicted are NICC bioprinted in PBS-algMC, BSA-algMC, PL-algMC, and FFP-algMC on d21 after bioprinting. (a) Representative images of the entire scaffold on day 1 and day 21 of incubation, showing form-stability. NICC stained with MTT, scale bars = 2 mm. (b) Magnified view of one corner of the scaffolds, NICC stained with DTZ or MTT, scale bars = 1 mm.



Supplementary Figure S3: Size distribution of NICC in suspension culture and bioprinted in (supplemented) algMC scaffolds determined by means of counting nuclei in DAPI stained 2D cross-sections. Mean ± SD, n=1 experiment, 20 islets, ***p<0.001, grey dots indicate individual islets.



Supplementary Figure S4: Exemplary depiction of a cryosection used for quantitative analysis of insulin-containing cells within NICC. Indicated by numbered arrows, the different states that were considered are viable (1), apoptotic (2), viable insulin-containing (3), and apoptotic insulin-containing (4).