ACCSCIENCE PUBLISHING

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RESEARCH ARTICLE

3D bioprinting of colon organoids in ultrashort self-assembling and decorated peptide matrices

Supplementary File

Total concentration	1.5 mg/mL	3 mg/mL 2 times the concentration	6 mg/mL 3 times the concentration
IIFK	3 h 	1 min 	10 s 
IIFK+R(l) (weight ratio 2:1)	overnight  1+0.5 mg/mL	2.5 h  2+1 mg/mL	1 min  4+2 mg/mL
IIFK+Y(l) (weight ratio 1:1)	 1+0.5 mg/mL	overnight  2+1 mg/mL	2 min  4+2 mg/mL

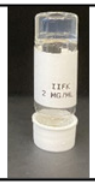
Total concentration	2 mg/mL	4 mg/mL 2 times concentration	8 mg/mL 3 times concentration
IIFK	1 h 	20 s 	5 s 
IIFK+R(h) (weight ratio 1:1)	 1+1 mg/mL	15 s  2+2 mg/mL	40 s  4+4 mg/mL
IIFK+Y(h) (weight ratio 1:1)	 1+1 mg/mL	40 min  2+2 mg/mL	3 min  4+4 mg/mL
IIFK+R+Y (weight ratio 2:1:1)	 1+0.5+0.5 mg/mL	overnight  2+1+1 mg/mL	3 min  4+2+2 mg/mL

Figure S1. Evaluation of the minimal gelation concentration and gelation time through inverted vial test for diverse peptide hydrogel **low (left) and high (right)** mixtures. This test determines the minimal concentration required for gelation and the time taken for gel formation. Abbreviations: **R**, fibrinogen-derived peptide containing the RGD motif; **Y**, Laminin-derived peptide containing YIGSR.

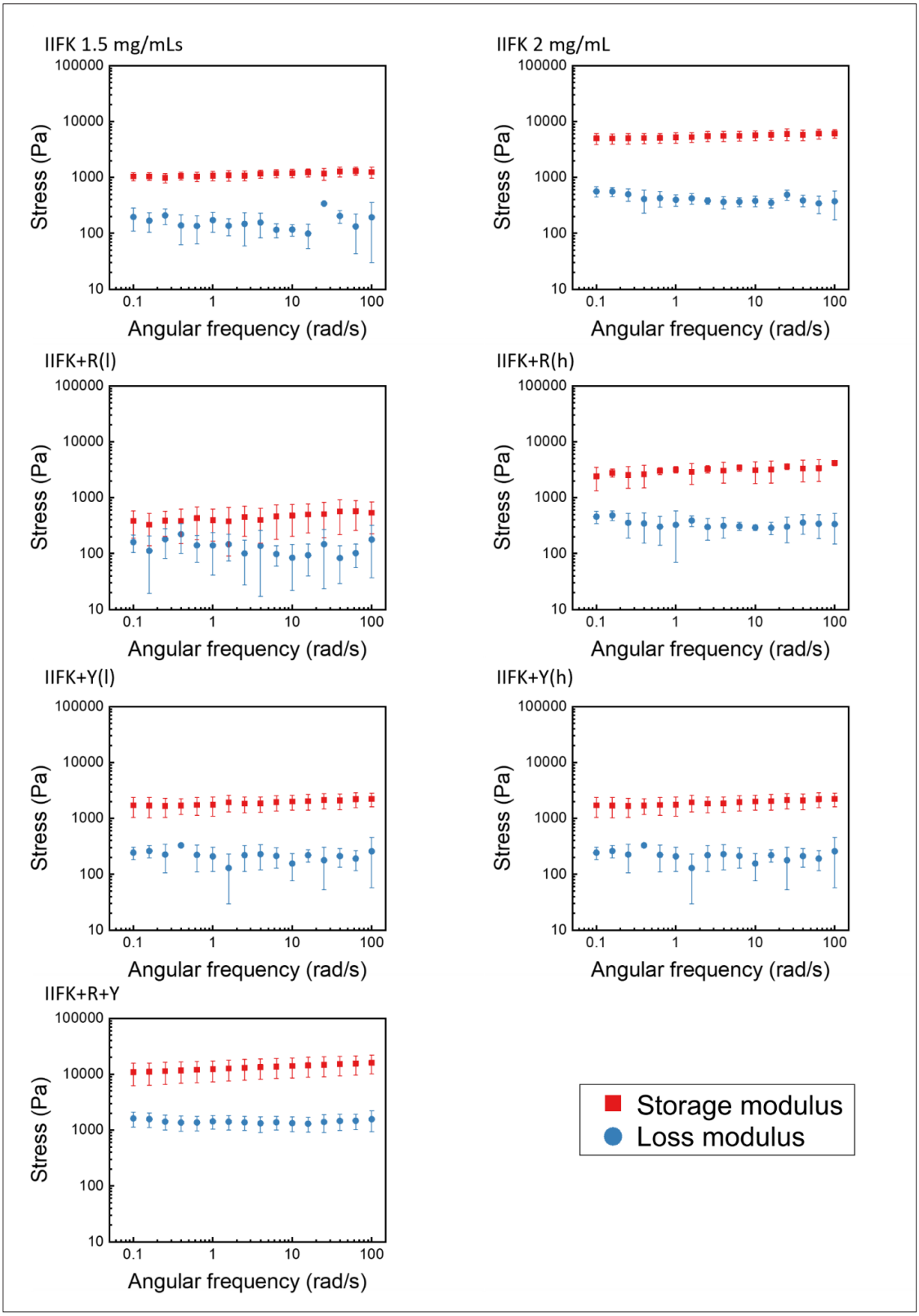


Figure S2. Storage (G') and loss (G") modulus at different angular frequencies for all peptide matrices. The graph displays the variation of G' and G" at different angular frequencies within different peptide matrices. Abbreviations: R: Fibrinogen-derived peptide containing the RGD motif; Y: Laminin-derived peptide containing YIGSR, IIFK: Parent peptide.

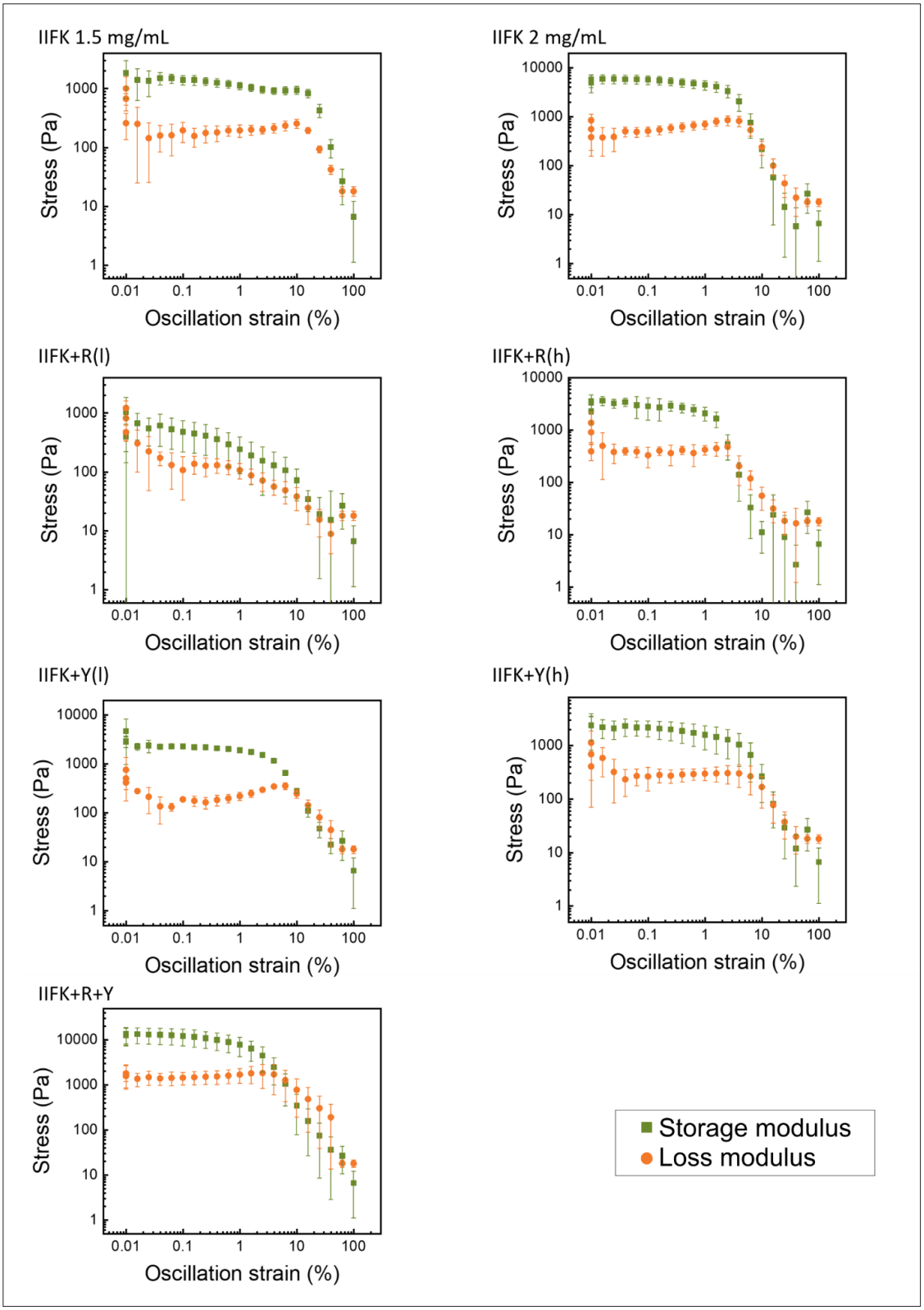


Figure S3. Storage (G') and loss (G") modulus at different oscillation strains for all peptide matrices. The graph displays the variation of G' and G" at different oscillation strains within various peptide matrices. Abbreviations: R, fibrinogen-derived peptide containing the RGD motif; Y, laminin-derived peptide containing YIGSR; IIFK, parent peptide.

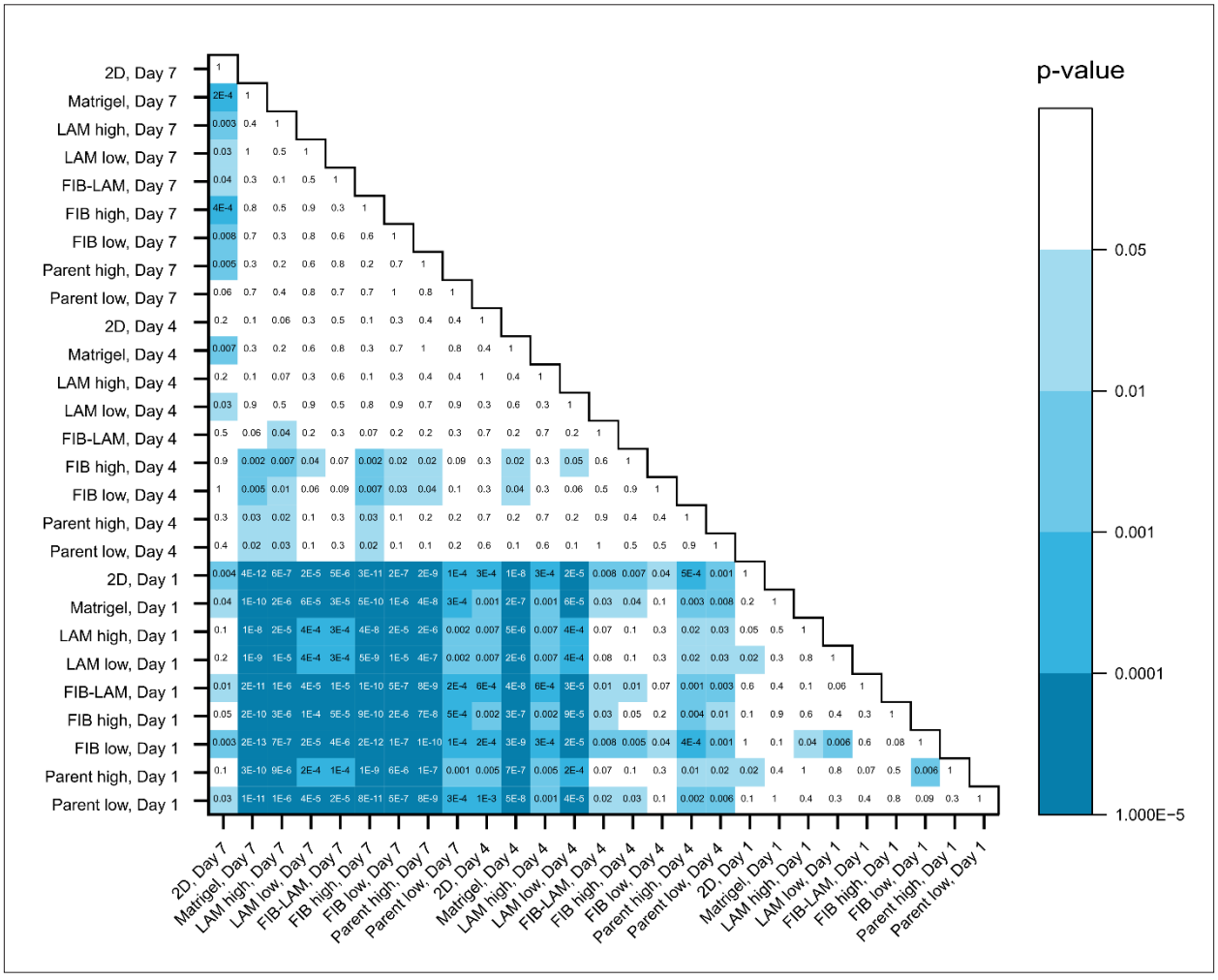


Figure S4. The *p*-values of proliferation data obtained via t-test. The calculated *p*-values correspond to the observed proliferation data in **Figure 3c**. The significance levels of various comparisons within the study are denoted in blue. Abbreviations: FIB, fibrinogen-derived peptide containing the RGD motif; LAM, laminin-derived peptide containing YIGSR.

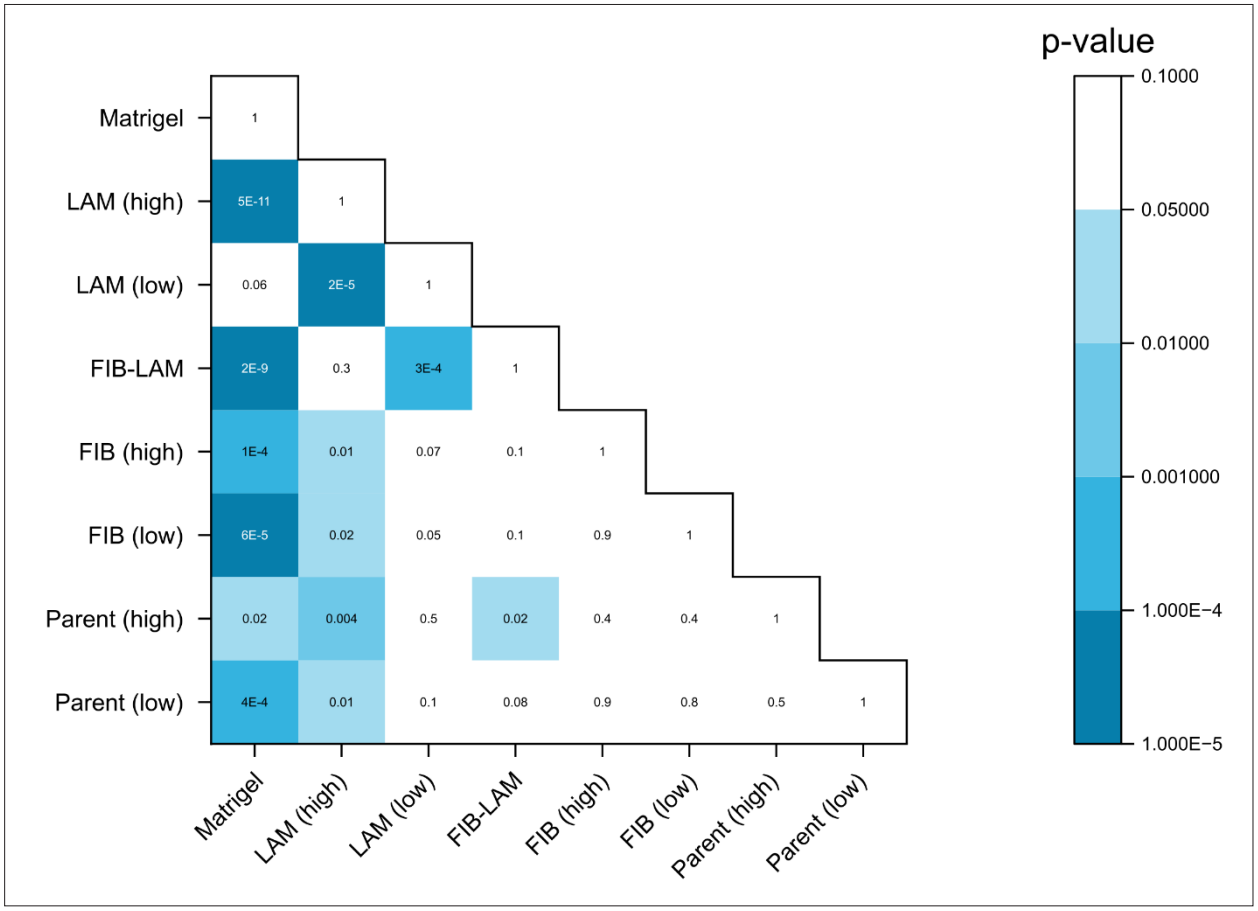


Figure S5. The *p*-values of circularity of organoids for the analysis of organoid forming capacity obtained via *t*-test. The calculated *p*-values correspond to the observed proliferation data in **Figure 3a**. The significance levels of various comparisons within the study are denoted in blue. Abbreviations: FIB, fibrinogen-derived peptide containing the RGD motif; LAM, Laminin-derived peptide containing YIGSR.

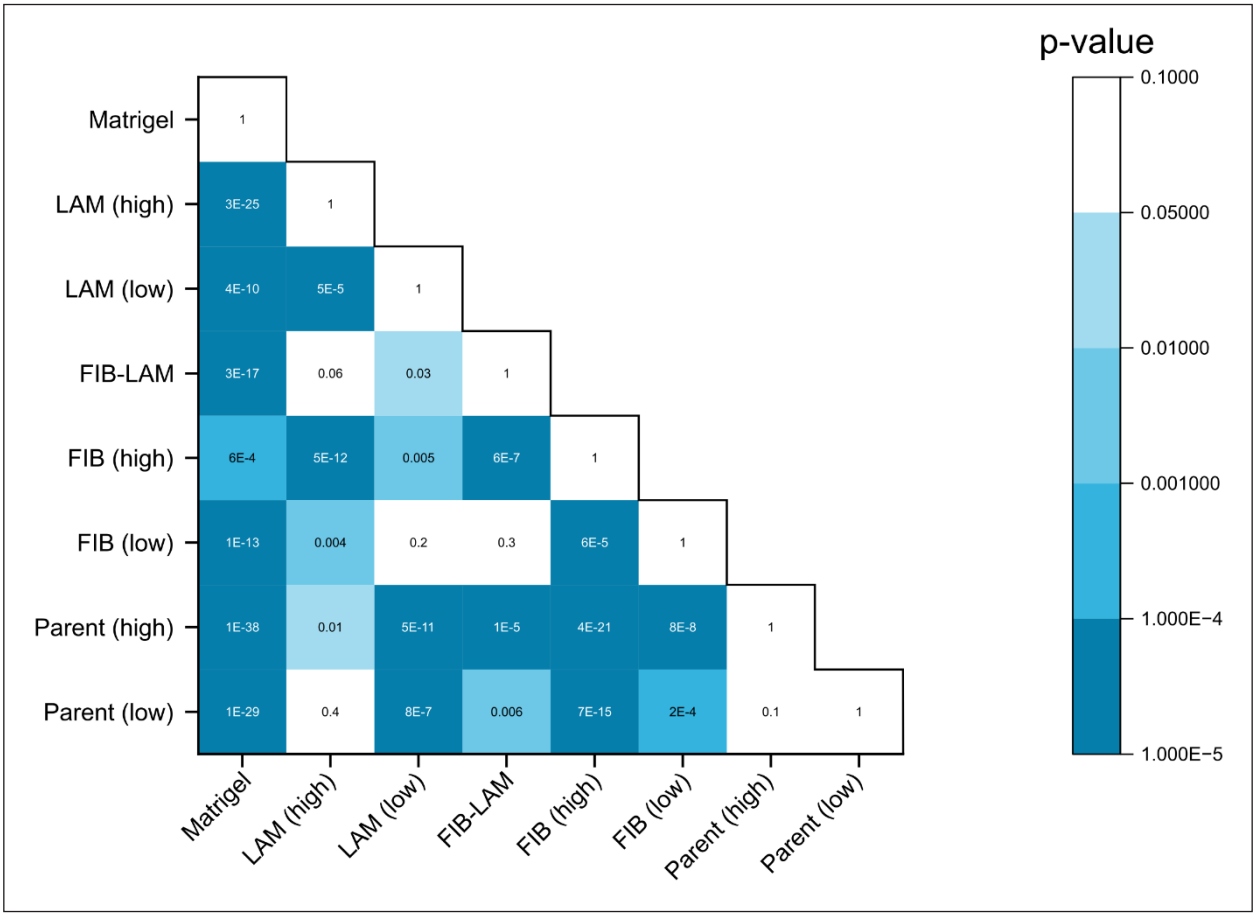


Figure S6. The *p*-values of the percentage of colonies in the lumen for the analysis of organoid forming capacity obtained via *t*-test. The calculated *p*-values correspond to the observed proliferation data seen in **Figure 3b**. The significance levels of various comparisons within the study are denoted in blue. Abbreviations: FIB, fibrinogen-derived peptide containing the RGD motif; LAM, laminin-derived peptide containing YIGSR.