Supporting Information

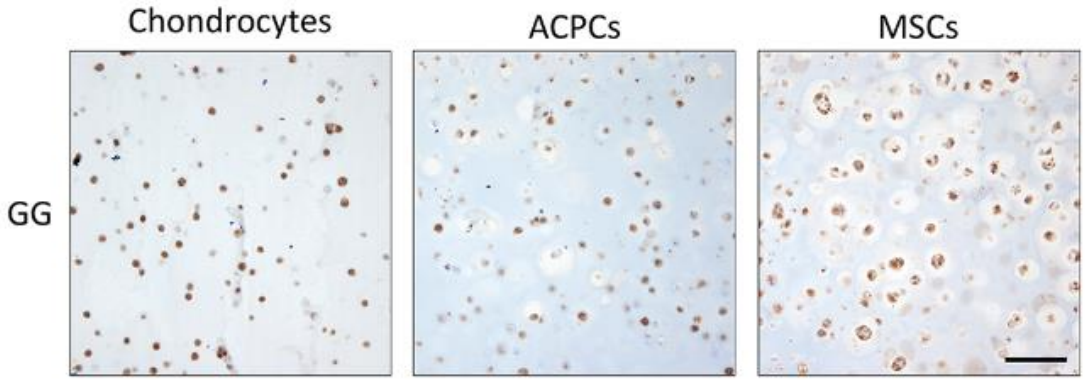

Figure S1. Proteoglycan IV staining of chondrocytes, ACPCs, and MSCs in hydrogels with formulation GG. No differences were observed compared to proteoglycan IV staining of GGH gels (Figure 5). Scale bar represents 100 µm for all images. With GG = 10% gelMA + 0.5% gellan gum.

Table S1. Print-settings used for the evaluation of filament collapse (G, GG, and GGH) and the bioprinting of zonal constructs (cell-laden GGH).

Formulation	**Needle (gauge)**	**Pressure (MPa)**	**Temperature cartridge (°C)**	**Feed rate (mm s^{-1})**
G	23 (straight)	0.13	25	10
GG	23 (straight)	0.19	28	28
GGH	23 (straight)	0.22	28	20
Cell-laden GGH	22 (conical)	0.08	28	20

With G = 10% gelMA, GG = 10% gelMA + 0.5% gellan gum, and GGH = 9.5% gelMA + 0.5% gellan gum + 0.5% HAMA.

The print settings were optimized for each hydrogel formulation individually in order to compare the different formulations when being printed at their optimal conditions. For each bio-ink composition, the print settings were adjusted until a shape-stable filament was formed at the nozzle. When this was obtained, filaments were printed onto the substrate with aligned pillars, and the largest gap the filament could bridge before collapsing was noted. Further adjustment of the print settings was performed until the settings were found at which the largest gap could be bridged by the filaments. These settings were used for further experiments and will be referred to as ‘optimal print settings’ (Table S1).