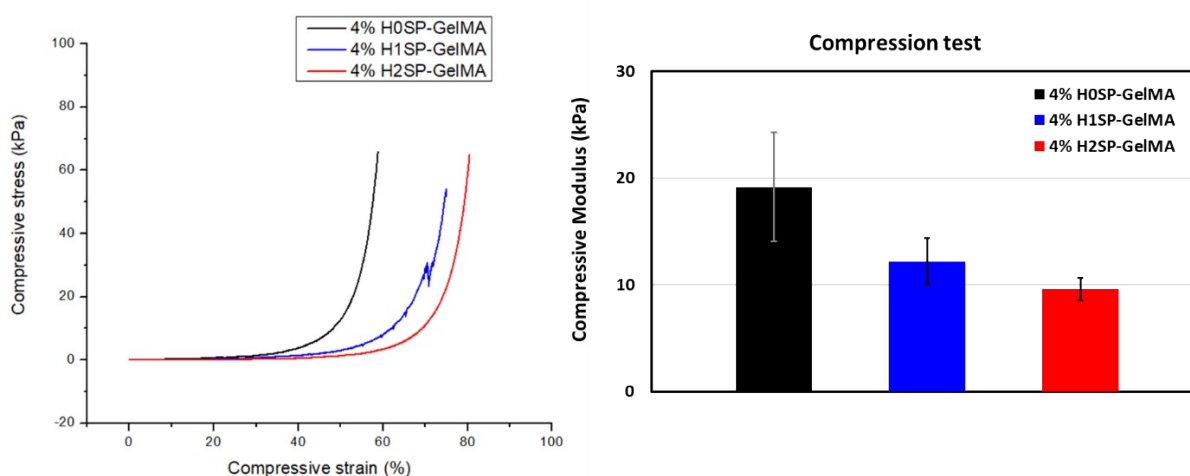


## Supplementary data

### Mechanical test

Mechanical properties of the hydrogel samples were tested at room temperature using a Model 3366 Instron universal testing machine (Instron, Norwood, MA, USA). The different 4% w/v HSP-GelMA bio-inks were prepared in the circular dish shape ( $n = 5$ ,  $\varnothing = 10$  mm) for the compression test. Loads of 500 N and a strain rate of 1 mm/min were applied.

The mechanical properties of the HSP-GelMA bio-inks as shown in Figure S1 decrease significantly with increasing number of heat treatment. The increased hydrolysis of peptide bonds and lower degree of methacrylate anhydride functional group is likely to lead to decreasing mechanical strength with increasing number of heat treatment cycles.



**Figure S1:** Compression test of different 4% w/v HSP-GelMA bio-inks.