

## Electronic Supplementary Information

### From natural to synthetic hydrogels: how much biochemical complexity is required for mechanotransduction?

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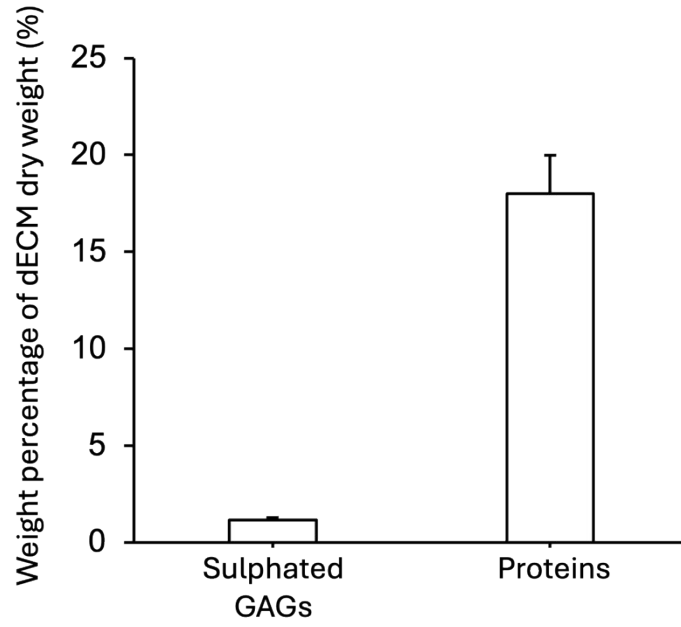
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**Table S1.** Overview of molecular ratios and hydrogel compositions

Condition	Hydrogel wt%	Total concentration (mM)	UPy-Gly concentration (mM)	UPy-PEG concentration (mM)	UPy-HA concentration (mM)	UPy-cRGDFK concentration (mM)	UPy-RCP concentration (mM)	UPy-GFOGER concentration (mM)	UPy-Gly : UPy-PEG or UPy-HA : UPy additive mol percentages (%)
Synthetic hydrogel (1 mM UPy-cRGDFK)	1.25	9	7.9	0.1	0	1	0	0	88 : 1 : 11
Synthetic hydrogel (no additive)	2.5	19	18.8	0.2	0	0	0	0	99 : 1 : n.a.
Synthetic hydrogel (1 mM UPy-cRGDFK)	2.5	18.6	17.4	0.2	0	1	0	0	93 : 1 : 6
Synthetic hydrogel (1 mM UPy-cRGDFK)	5	27.9	26.4	0.5	0	1	0	0	95 : 2 : 3
Hybrid hydrogel (no additive)	1.2	9.5	9.4	0	0.03	0	0	0	99 : 1 : n.a.
Hybrid hydrogel (0.09 mM UPy-RCP)	1.42	9.5	9.3	0	0.03	0	0.09	0	98 : 1 : 1
Hybrid hydrogel (no additive)	2.4	18.9	18.8	0	0.06	0	0	0	99 : 1 : n.a.
Hybrid hydrogel (3 mM UPy-GFOGER)	3.38	18.9	15.8	0	0.06	0	0	3	84 : 1 : 15
Hybrid hydrogel (0.09 mM UPy-RCP)	2.84	18.9	18.7	0	0.06	0	0.09	0	98 : 1 : 1
Hybrid hydrogel (no additive)	4.8	37.7	37.6	0	0.13	0	0	0	99 : 1 : n.a.
Hybrid hydrogel (0.09 mM UPy-RCP)	5.68	37.7	37.5	0	0.13	0	0.09	0	99 : 1 : 1



**Fig. S1** The dECM components as determined by percentage of colorimetric assay. The weight percentage of sulphated glycosaminoglycans (GAGs) and proteins relative to the dry dECM weight before gelation in buffer, as determined by a 1,9-dimethylmethylene blue assay and Bicinchoninic acid assay, respectively. Data are represented as mean  $\pm$  s.d., N = 3 technical replicates.