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Figure S1 ¹H NMR spectrum of metformin in DMSO-d6 and D₂O



Figure S2 Brightfield image of RAW264.7 on TCPS without additives (negative control) (scalebar: $50 \ \mu m$)



Figure S3 % swelling (A) of PSucMA hydrogels with additives and SEM images of single (B) and dual (C) loaded PSucMA hydrogels



Figure S4 IL6 level induced by RAW 264.7 seeded on PSucMA hydrogels loaded with additives Values shown represent the mean \pm SD (n=3).



Figure S5 MTT proliferative assay of hydrogels loaded with THY and CUR Values shown represent the mean \pm SD (n=3).

Additives	Concentration	No. of cell clusters	No. of cell clusters allocated to each bin centre			Max size of
			0-100 μm²	100-200 μm²	200-300µm²	clusters (µm²)
МН	10mg/ml	156	114	34	5	327.153
	50mg/ml	375	282	81	8	311.488
EH1	10mg/ml	74	40	28	4	373.746
	50mg/ml	290	227	45	10	767.575
MET	10mg/ml	55	48	6	0	419.937
	50mg/ml	125	90	31	2	674.59
THY	100µg/ml	166	74	70	13	852.124
	250µg/ml	227	149	56	16	327.756
	500µg/ml	406	270	98	23	581.806
CUR	100µg/ml	212	169	28	9	691.861
	250µg/ml	123	104	15	2	606.709
	500µg/ml	54	41	10	3	174.522
NO ADD		19	13	4	1	311.89

Table S1 Number and size of the clusters formed on each hydrogel determined using particle

 size analyser in Image J software