

## Supplementary material

### **Immunomodulatory Zymosan/I-carrageenan/ Agarose hydrogel for targeting M2 to M1 macrophages (antitumoral)**

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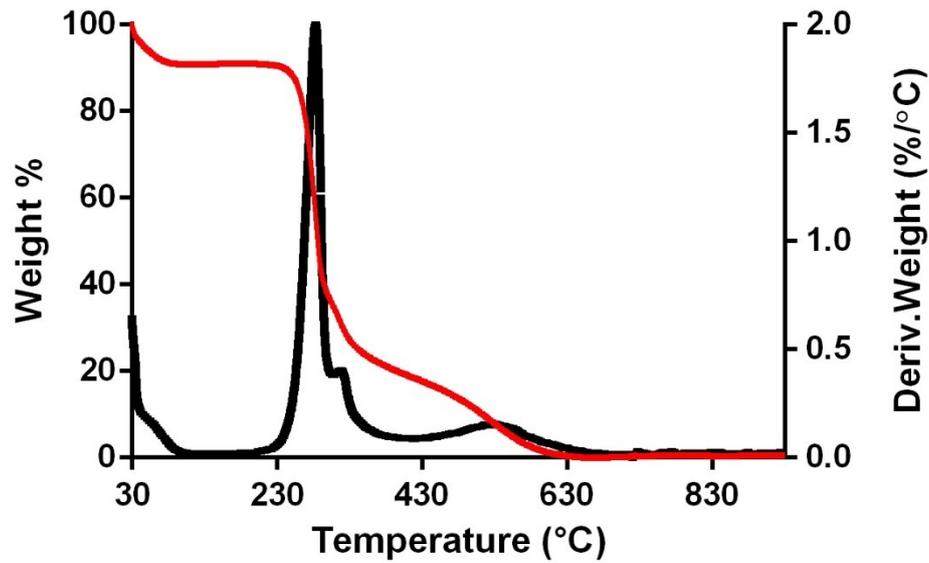


Fig. S1. Thermal gravimetric spectrum of native ZM.

**Table S1. M1 and M2 gene primers**

TNF $\alpha$

Forward 5'- CCCTGGTATGAGCCCATCTATC-3'  
Reverse 5'- AAAGTAGACCTGCCAGACTCG-3'

CXCL10

Forward 5'- GGCATTCAAGGAGTACCTCTCTC-3'  
Reverse 5'- GACAAAATTGGCTTGCAGGA-3'

CCL22

Forward 5'-TGC GCGTGGTGAAACACTT-3'  
Reverse 5'-TAGGCTCTTCATTGGCTCAGCT-3'

IL10

Forward 5'- TCAAGGCGCATGTGAACTCC-3'  
Reverse 5'- GATGTCAAACACTCATGGCT-3'

CCL18

Forward 5'-CTCTGCTGCCTCGTCTATACCT-3'  
Reverse 5'-CTTGGTTAGGAGGATGACACCT-3'

TLR2

Forward 5'-ACAGCACTGGTGTCTGGCAT- 3'

Reverse 5'-TGGGAGCTTTCCTGGGCTTC- 3'

GAPDH

Forward 5'- GTCTCCTCTGACTTCAACAGCG-3'

Reverse 5'- ACCACCCTGTTGCTGTAGCCAA-3'

**Table. S2. Different ratios of polymer and its characteristics**

Ratios of Polymer	Stiffness	Elasticity	Strength	Pore size	Biocompatibility	Biodegradation
C1	Low	Low	Average	Irregular	Good	Good
C2	Average	Low	Average	Not uniform	Good	Good
C3	Good	Good	Excellent	Uniform and Oval pores	Good	Excellent

### **S3. Video abstracts**

#### **Rho B-tagged ZM uptake by Raw cells, a live video clip from a Olympus Magcam DC 10 Microscopy.**

Raw 264.7 cells with a concentration of  $1 \times 10^5$  cells/mL were grown in 6 well plate and treated with  $100\mu\text{g/ml}$  of Rho B-tagged ZM particles for 4 h in a  $\text{CO}_2$  incubator. To check the particle uptake by the cells it was viewed under the Olympus Magcam DC 10 Microscopy. During the 4 h incubation the particle uptake by the cell were viewed directly and a video clip 1.34 minutes were taken which is a proof to confirm the ZM particles entry to Raw 264.7 cells. ZM could be a potential candidate for macrophage targeted drug delivery.

<https://drive.google.com/file/d/1BA0WBwGwotTYibnQ-EYeuDTHbj3aqTGS/view?usp=sharing>