

## Multifunctional iron oxide/silk-fibroin ( $\text{Fe}_3\text{O}_4$ -SF) composite microspheres for the delivery of cancer therapeutics

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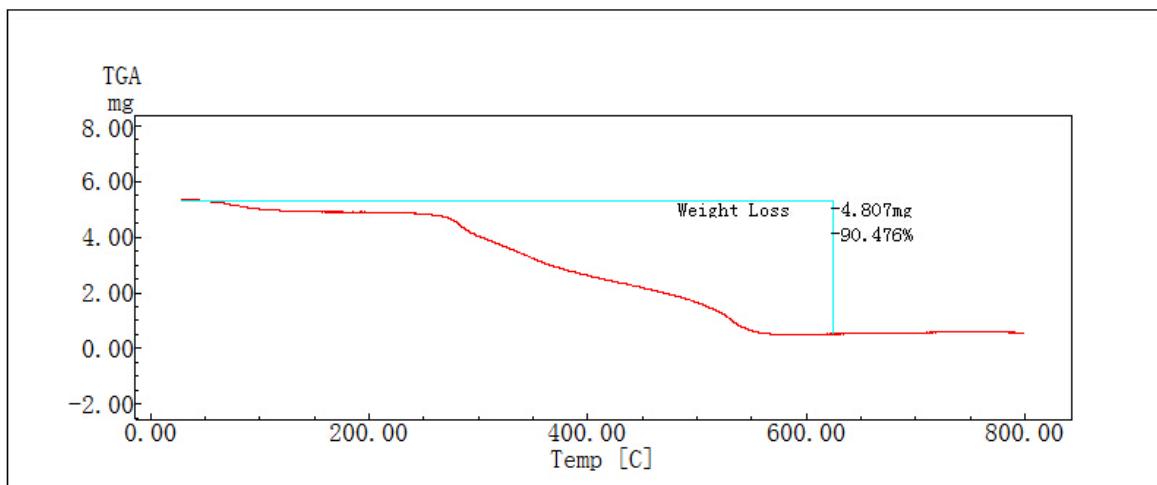
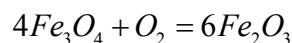


Fig.S1 TGA image of  $\text{Fe}_3\text{O}_4$ -SF composite microspheres at 800°C under the air atmosphere (5.313mg).

In order to calculate iron oxide particles content, TGA test was studied under the air atmosphere. From fig.S1, the silk was completely lost at ~630°C and the residuum was  $\text{Fe}_2\text{O}_3$ . According to the chemical equation, we can calculate that the quality percentage of  $\text{Fe}_3\text{O}_4$  is ~9.2%.



In the process of preparation, 0.5wt% SF solution and 0.5wt%  $\text{Fe}_3\text{O}_4$  solution were mixed in a volume ratio of 40:1. The  $\text{Fe}_3\text{O}_4$  content should be 2.5% theoretically. However, not all the silks were precipitated in the salting out process and part of them were lost. Then the  $\text{Fe}_3\text{O}_4$  content was increased and the quality percentage of  $\text{Fe}_3\text{O}_4$  is ~9.2%.