

Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

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## **Supporting Information**

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### **3 Extended Chain Conformation of $\beta$ -Glucan and Its 4 Effect on Antitumor Activity**

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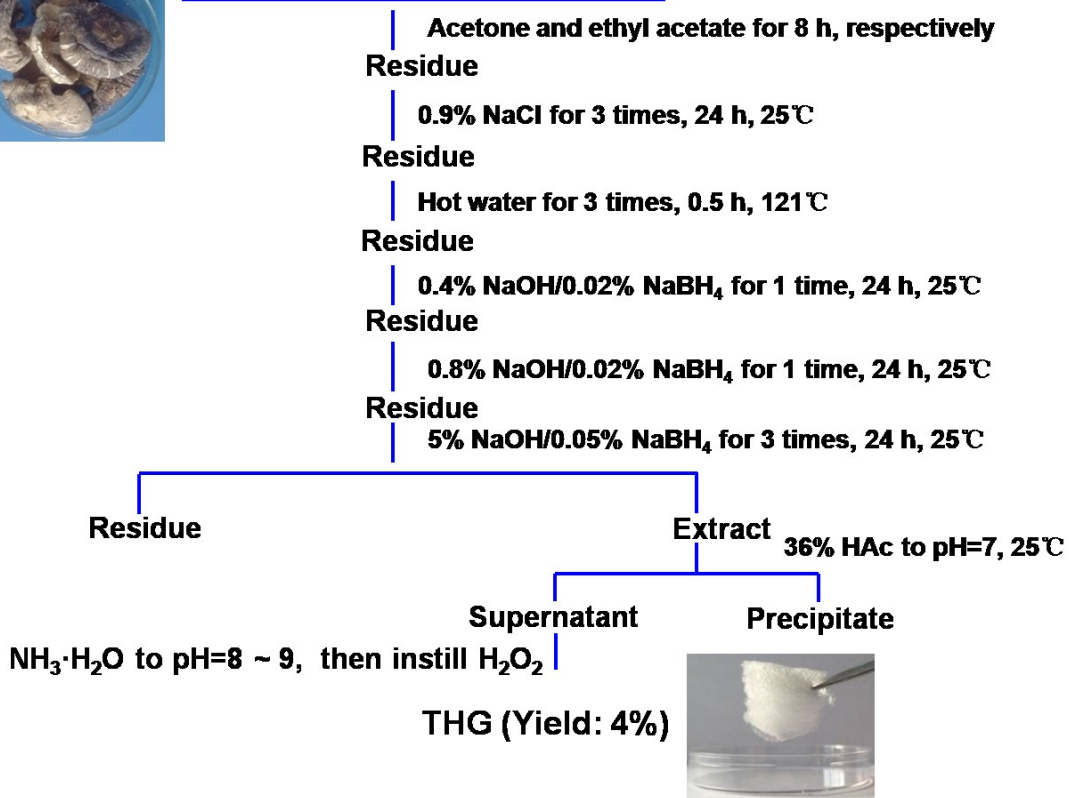
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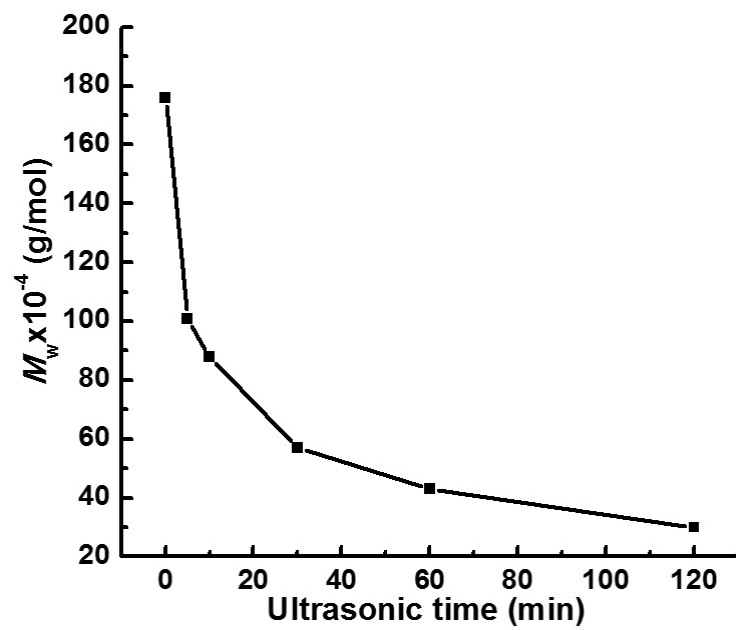


**Fruiting Body of *Lentinus edodes***



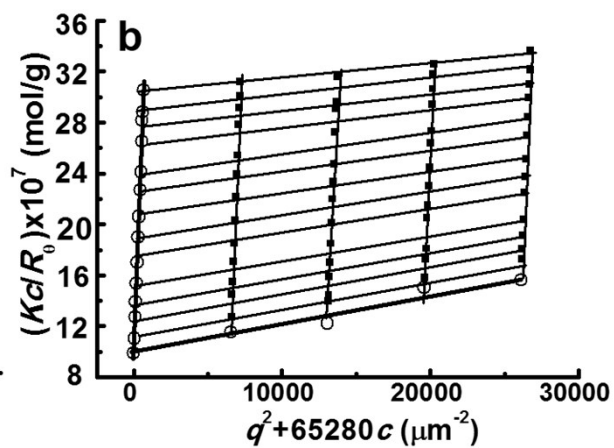
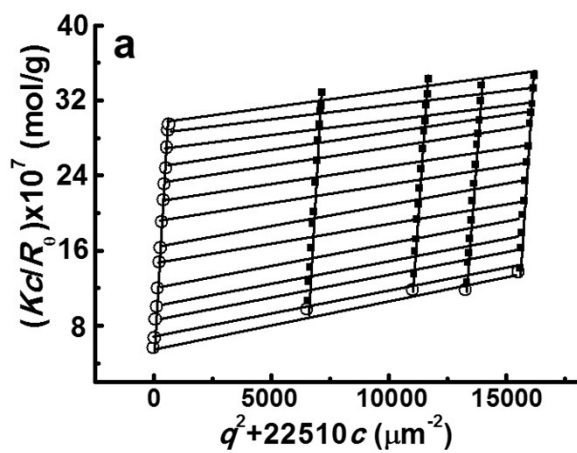
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20 Fig. S1 Isolation of THG from *Lentinus edodes*.



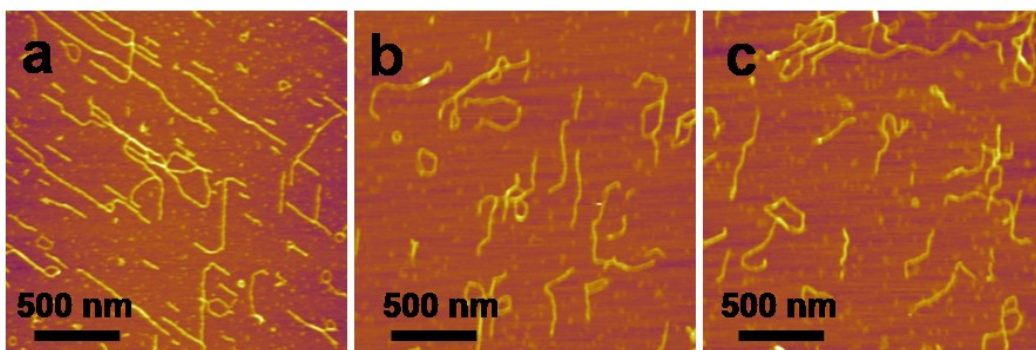
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23 **Fig. S2** The ultrasonic time dependence of  $M_w$  for THG fractions in water.



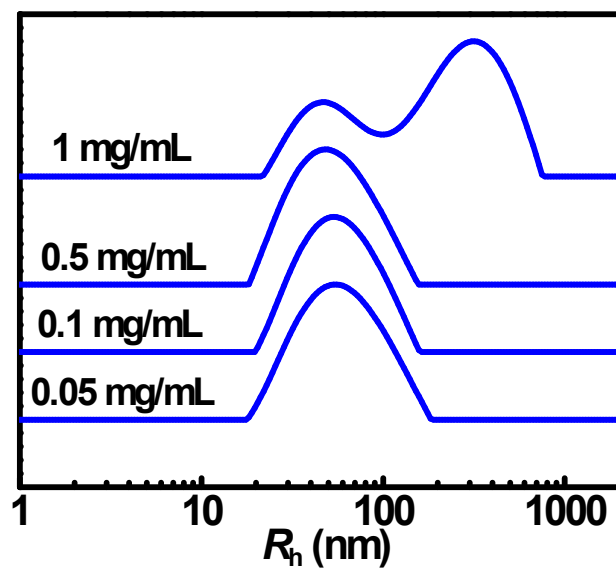
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26 Fig. S3 Zimm Plots of THG2 (a) and THG4 (b).



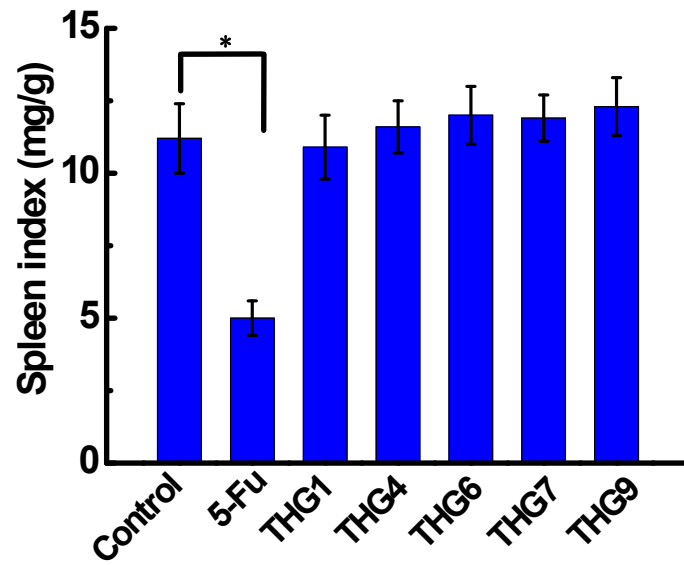
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29 **Fig. S4** AFM images of THG2 (a), THG4 (b), THG6 (c) in water with a concentration of 2  $\mu\text{g/mL}$ .



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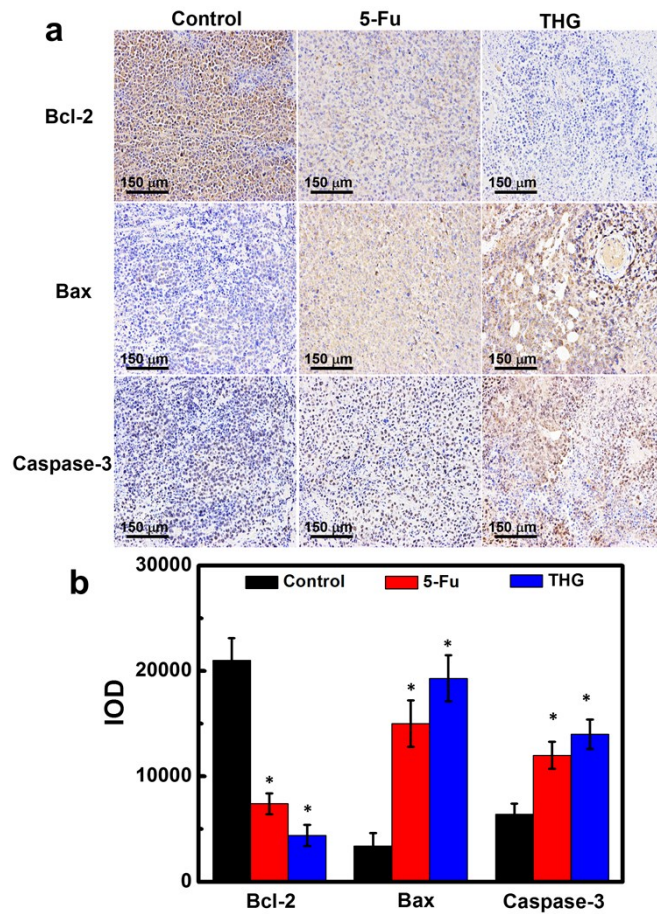
32 **Fig. S5** The apparent hydrodynamic radius distributions ( $f(R_h)$ ) of THG in water with different  
33 concentrations at 25 °C (scattering angle  $\theta=60^\circ$ ).



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35 **Fig. S6** The spleen index of tumor-bearing mice after 20 days treatment with THG fractions (5  
36 mg/kg per day). The bars represent the S.E., \*p < 0.05.





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39 **Fig. S7** Effects of THG on apoptosis-associated protein level in H22 tumor tissues. (a)  
 40 Immunohistochemistry of tumor tissue, stained with antibody against Bcl-2, Bax and caspase-3  
 41 (brown). (b) Quantification (IOD) of Bcl-2, Bax and caspase-3 per 100 mm<sup>2</sup> of (a), The bars  
 42 represent the S.E., \* p < 0.05 v.s. control.