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Supporting Information

A supramolecular approach to construct an artificial hydrolase with photo-switchable catalytic activity

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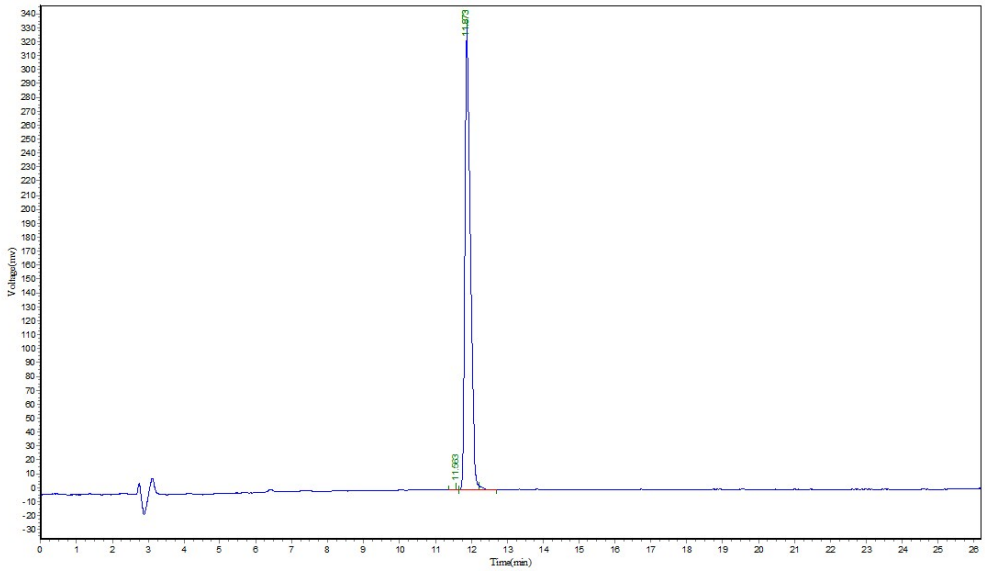

Fig. S1 HPLC analysis of Azo-GFGH

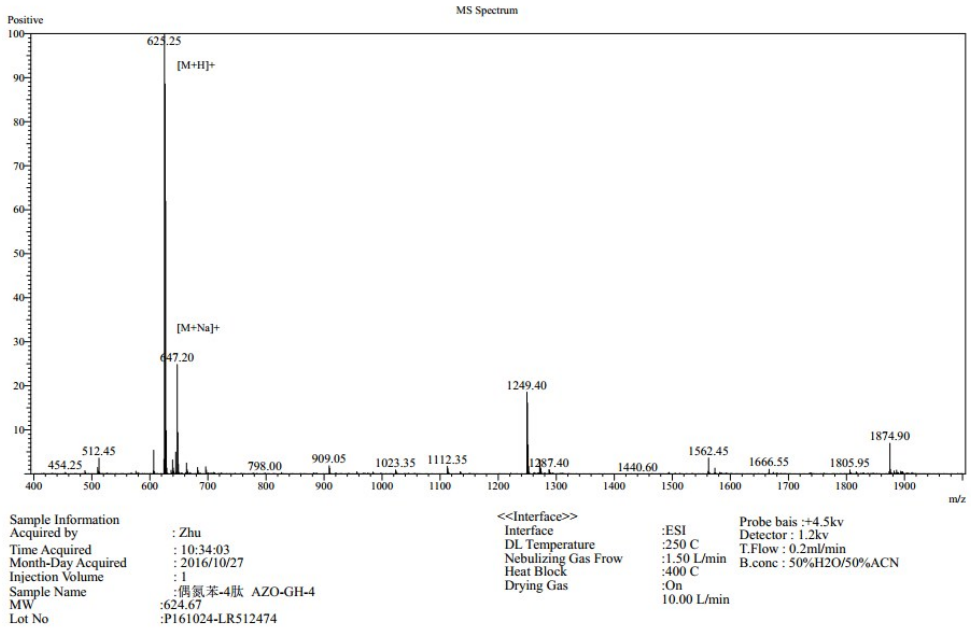

Fig. S2 MS analysis of Azo-GFGH

Table S1. Comparison of hydrolytic activity of some peptide-based artificial enzymes.

Peptide	Substrate	Conditions [a]	V_0 (μM/min) [a]	Reference
VK2H	*p*-NPA	Tris-HCl buffer pH 9.0 C_{pep}=0.32 mM C_{sub}=0.5 mM	16	Zhang *et al.*[1]
C_{10}-GSH-OH	*p*-NPA	PBS buffer pH 7.0, 25°C C_{pep}=2 mM C_{sub}=20 mM	34.3	Belieres *et al.* [2]
CoA-HSD	*p*-NPA	PBS buffer pH 7.5, 35°C C_{pep}=0.5 mM C_{sub}=5 mM	19.77	Wang *et al.* [3]
CP4-Aβ	*p*-NPA	PBS buffer pH 7.0, 25°C C_{pep}=0.1 mM C_{sub}= 0.5 mM	4.56	Maeda *et al.* [4]
Q11R/H	*p*-NPA	PBS buffer pH 7.4, room temp. C_{pep}=0.2 mM C_{sub}= 0.5 mM	0.85	Zhang *et al.* [5]
Azo-GFGH	*p*-NPA	PBS buffer pH 7.4, 25 °C C_{pep}=1 mM C_{sub}=10 mM	95.87	**This study**

[a] The reaction conditions and V_0 values are cited directly from the original reference.

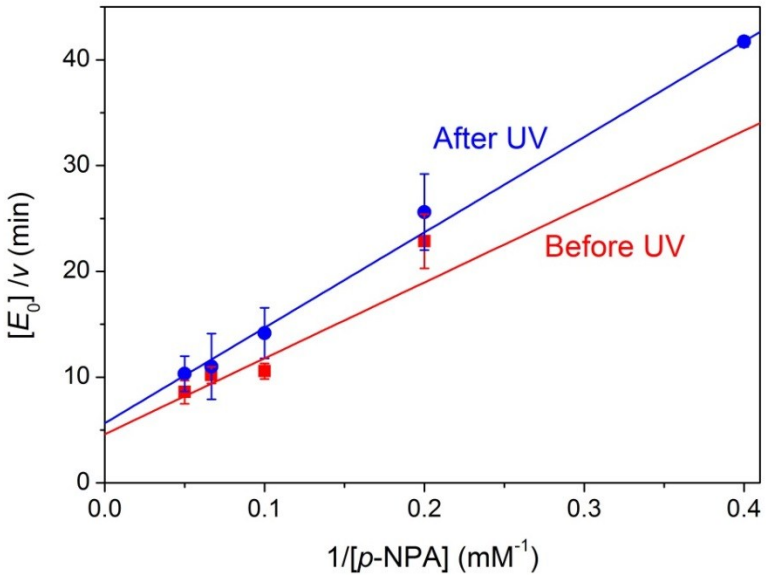

Fig. S3 Linear Lineweaver-Burk plots for the hydrolysis reaction catalyzed by Azo-GFGH

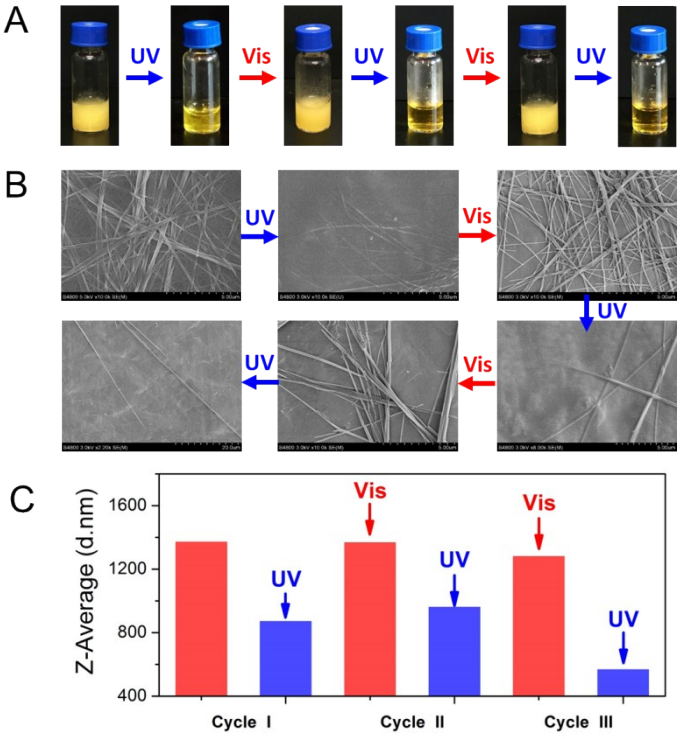

Fig. S4 Optical images (A), SEM (B) and average size results (C) of Azo-GFGH during the repeated UV/Vis light irradiations.

References

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5. C. Zhang, X. Xue, Q. Luo, Y. Li, K. Yang, X. Zhuang, Y. Jiang, J. Zhang, J. Liu, G. Zou and X.-J. Liang, *ACS Nano*, 2014, 8, 11715-11723.