Supporting Information

High-performance, Command-degradable, Antibacterial Schiff Base Epoxy Thermosets: Synthesis and Properties

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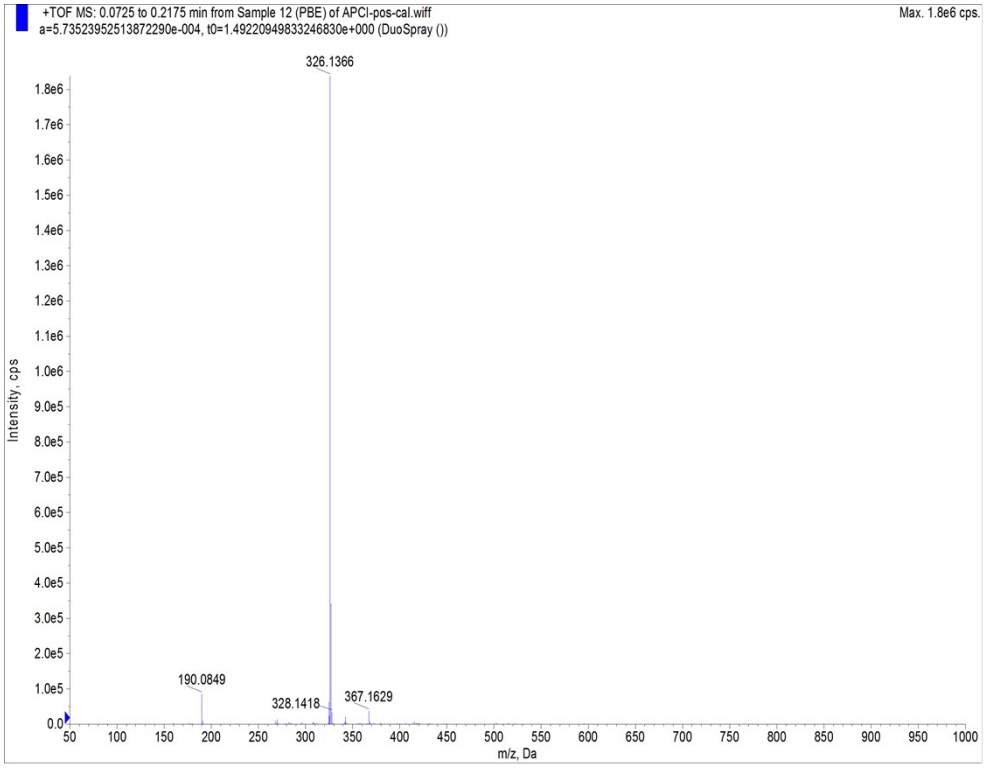

Fig. S1 TOF-MS spectrum of PBE.

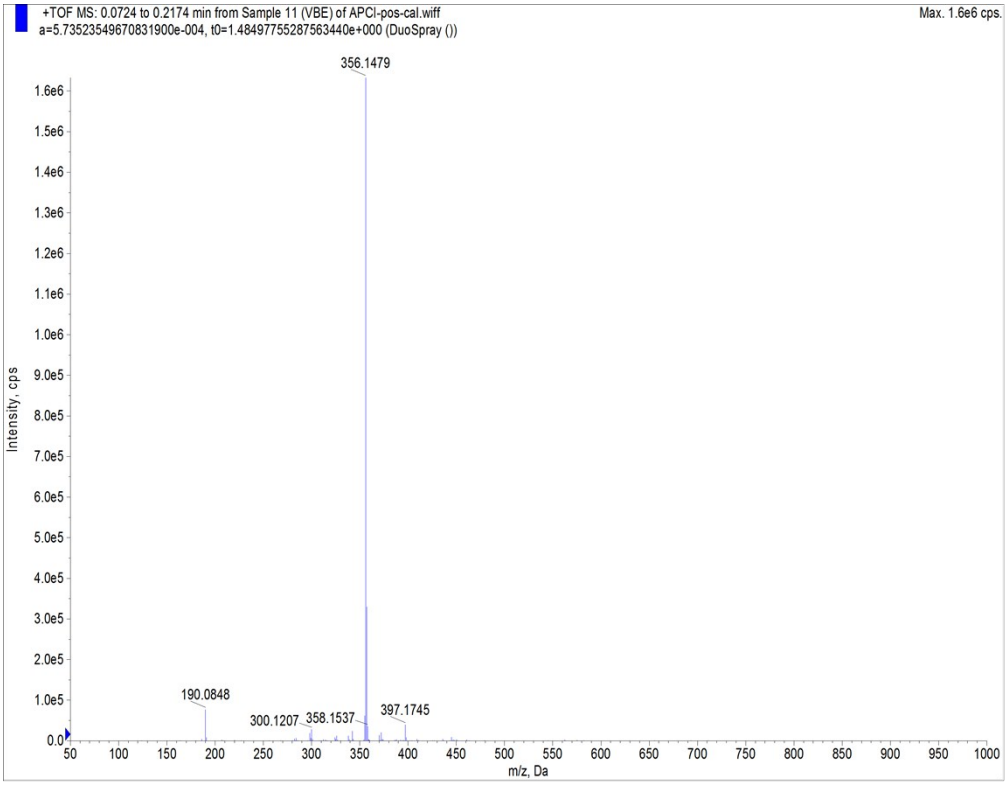

Fig. S2 TOF-MS spectrum of VBE.

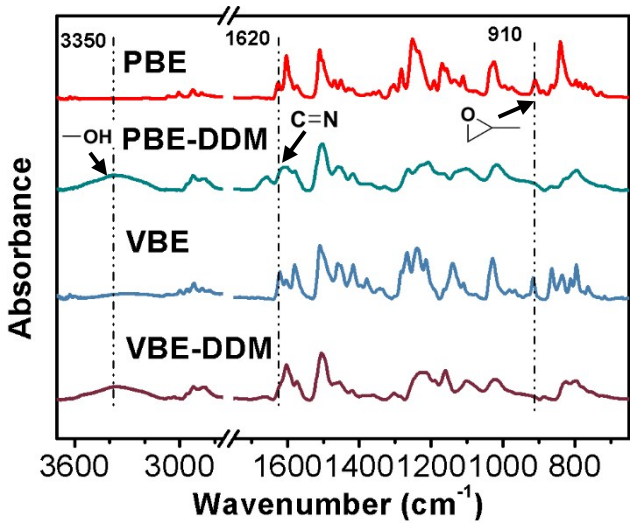

Fig. S3 FT IR spectra of PBE, PBE-DDM, VBE and VBE-DDM.

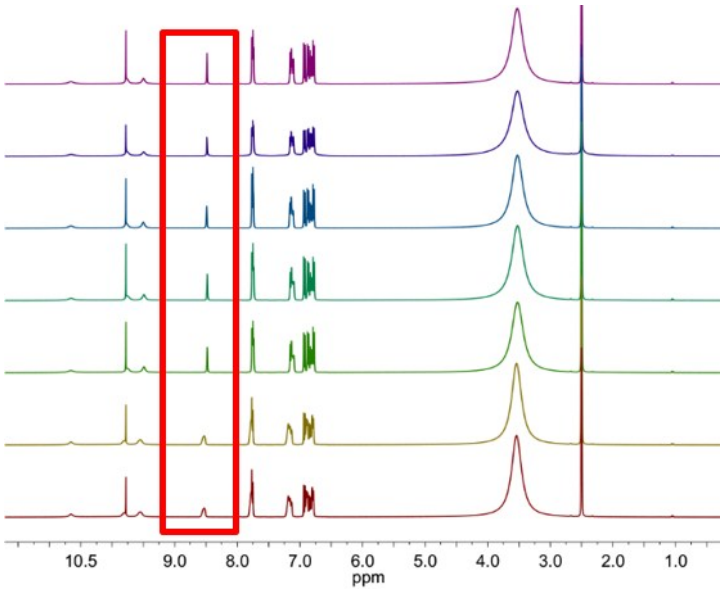

Fig. S4 ^{1}H NMR spectra of about 10 mg PBP dissolved in 10 μL 0.01 M HCl solution (water: DMSO-d_6 (v/v) = 2:8) after 270 s, 380 s, 520 s, 1320 s, 2020 s, 2720 s, 4500 s.

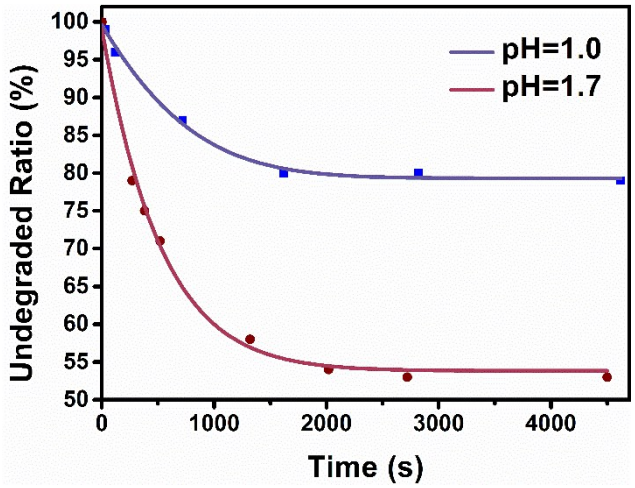

Fig. S5 Undegraded ratio of about 10 mg PBP dissolved in 10 μL 0.01 M HCl solution (DMSO: water (v/v) = 8:2) and 0.05 M HCl solution (DMSO: water (v/v) = 8:2)

Table S1 Degradation rate of PBE-DDM and VBE-DDM at different conditions

Sample	Main solution	Solution ratio (water : main solution)	Temperature (°C)	Acid	Acid concentration (mol L)	Degradation rate (mg mL^{-1} h^{-1})
PBE-DDM	THF	1:9	50	H_2SO_4	0.1	0.105
VBE-DDM	THF	1:9	50	H_2SO_4	0.1	0.17
PBE-DDM	THF	2:8	50	H_2SO_4	0.1	0.117
VBE-DDM	THF	2:8	50	H_2SO_4	0.1	0.191
PBE-DDM	THF	3:7	50	H_2SO_4	0.1	0.102
VBE-DDM	THF	3:7	50	H_2SO_4	0.1	0.161
PBE-DDM	THF	4:6	50	H_2SO_4	0.1	0.089
VBE-DDM	THF	4:6	50	H_2SO_4	0.1	0.132
PBE-DDM	THF	5:5	50	H_2SO_4	0.1	0.077
VBE-DDM	THF	5:5	50	H_2SO_4	0.1	0.096
PBE-	THF	2:8	23	H_2SO_4	0.1	0.00029

DDM						
VBE-DDM	THF	2:8	23	H_2SO_4	0.1	0.00029
PBE-DDM	THF	2:8	50	H_2SO_4	0.01	0.021
VBE-DDM	THF	2:8	50	H_2SO_4	0.01	0.023
PBE-DDM	THF	2:8	50	H_2SO_4	0.05	0.046
VBE-DDM	THF	2:8	50	H_2SO_4	0.05	0.054
PBE-DDM	THF	2:8	50	HCl	0.1	0.067
VBE-DDM	THF	2:8	50	HCl	0.1	0.09
PBE-DDM	THF	2:8	50	H_3PO_4	0.1	0.023
VBE-DDM	THF	2:8	50	H_3PO_4	0.1	0.082
PBE-DDM	THF	2:8	50	CH_3COOH	0.1	0.0097
VBE-DDM	THF	2:8	50	CH_3COOH	0.1	0.023
PBE-DDM	Methanol	2:8	50	H_2SO_4	0.1	0.066
VBE-DDM	Methanol	2:8	50	H_2SO_4	0.1	0.039
PBE-DDM	Ethanol	2:8	50	H_2SO_4	0.1	0.0056
VBE-DDM	Ethanol	2:8	50	H_2SO_4	0.1	0.0014
PBE-DDM	DMF	2:8	50	H_2SO_4	0.1	0.018
VBE-DDM	DMF	2:8	50	H_2SO_4	0.1	0.024
PBE-DDM	Acetone	2:8	50	H_2SO_4	0.1	0.0056
VBE-DDM	Acetone	2:8	50	H_2SO_4	0.1	0.019
PBE-DDM	water	2:8	50	H_2SO_4	0.1	0.026
VBE-DDM	water	2:8	50	H_2SO_4	0.1	0.0012

Table S2 Swelling rate of PBE-DDM and VBE-DDM (about 20 mg) after soaking in different solvents (about 10 mL) at 23 °C and 50 °C for 24 h

Sample	Solvent	Temperature (°C)	Swelling Rate (%)
PBE-DDM	Water	23 °C	0.2
VBE-DDM			0.3
PBE-DDM	Ethanol		0.5
VBE-DDM			0.5
PBE-DDM	Acetone		0.7
VBE-DDM			0.8
PBE-DDM	THF		5.1
VBE-DDM			4.2
PBE-DDM	Methanol		3.9
VBE-DDM			3.8
PBE-DDM	DMF		2.6
VBE-DDM			2.4
PBE-DDM	Water	50 °C	0.3
VBE-DDM			0.3
PBE-DDM	Ethanol		0.8
VBE-DDM			0.9
PBE-DDM	Acetone		1.1
VBE-DDM			1.3
PBE-DDM	Methanol		3.3
VBE-DDM			4.2
PBE-DDM	THF		5.8
VBE-DDM			4.9
PBE-DDM	DMF		2.9
VBE-DDM			2.7

Table S3 The weight loss of PBE-DDM and VBE-DDM after immersing in water/THF (v/v=2/8) or 0.1 M NaOH aqueous solution at 50 °C for 48 h

Sample	Solution	Weight Loss (%)
PBE-DDM	0.1 mol L NaOH aqueous solution	0.395
PBE-DDM	Water/THF（v/v=2/8）	0.464
VBE-DDM	0.1 mol L NaOH aqueous solution	0.829
VBE-DDM	Water/THF（v/v=2/8）	0.386