

Supporting information for

In-situ cross-linked and highly carboxylated poly(vinyl alcohol) nanofibrous membranes for efficient adsorption of proteins

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Table S1 Solution properties and diameter of the resultant nanofibers

MAH to PVA molar ratio (%)	Viscosity (mPa.S)	Conductivity (mS cm ⁻¹)	Average fiber diameter (nm)
0	425	0.57	320
5	472	20.5	284
10	493	23.6	265
15	507	27.3	248
20	522	31.2	233
30	569	34.7	226
40	584	37.6	223

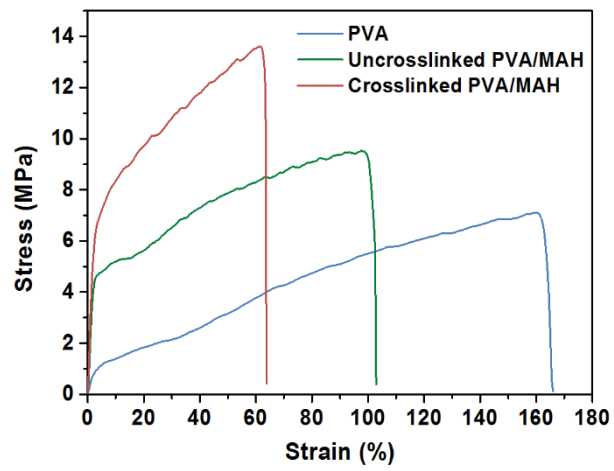


Fig. S1 Stress–strain curves for the relevant pristine PVA, uncross-linked PVA/MAH, and cross-linked PVA/MAH nanofibrous membranes.

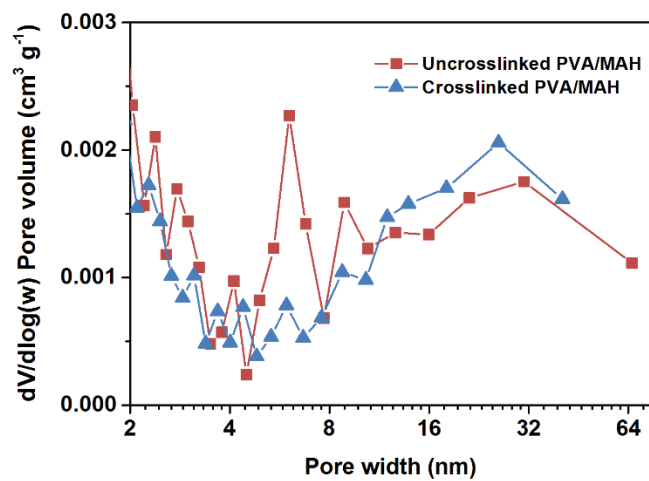


Fig. S2 Pore distribution of uncross-linked and cross-linked PVA/MAH nanofibrous membranes using the BJH method.

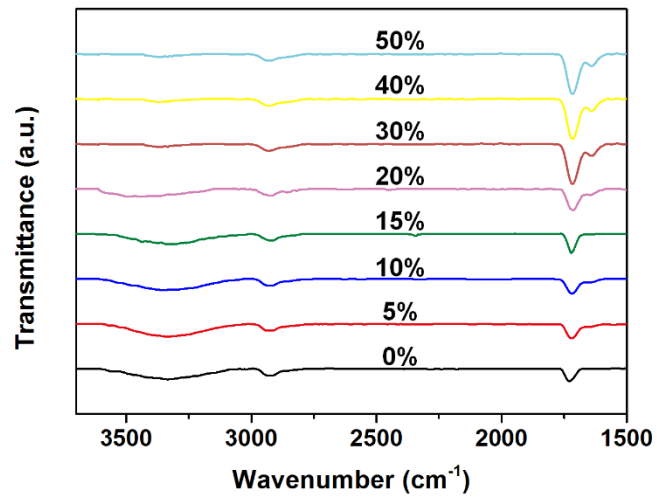


Fig. S3 FT-IR spectra of PVA/MAH nanofibrous membranes at different MAH to PVA molar ratio.

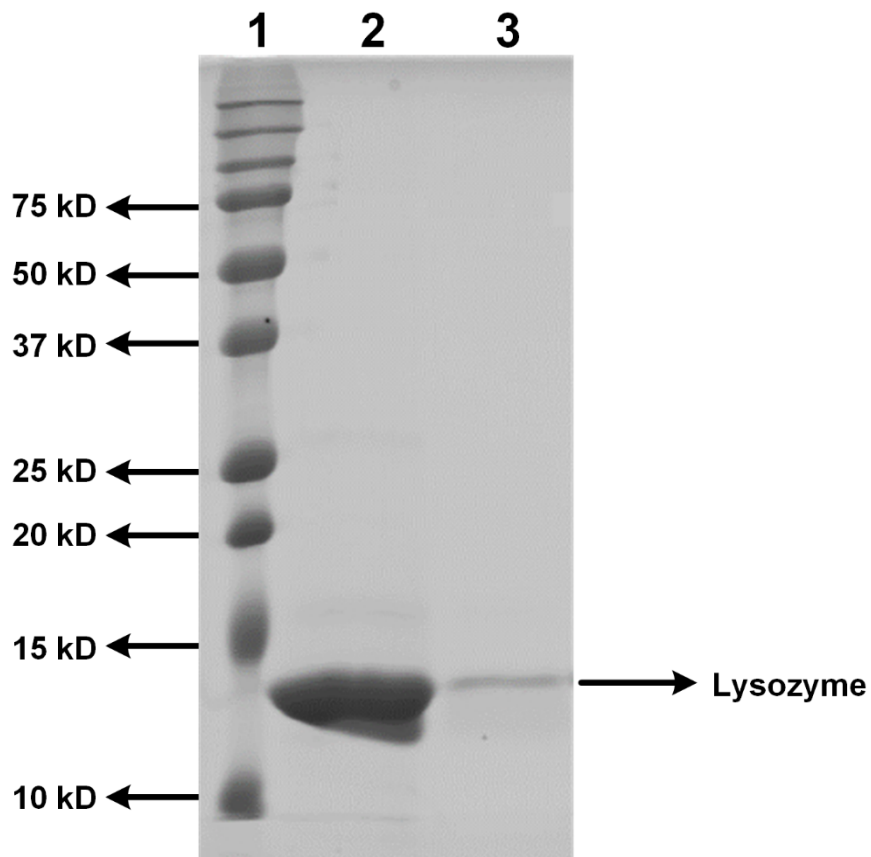


Fig. S4 SDS-PAGE analysis (Coomassie blue staining) showing the adsorption performance towards lysozyme: lane 1, a protein ladder; lane 2, the pristine protein solution; lane 3, the protein solution after adsorption by PVA/MAH nanofibrous membranes.

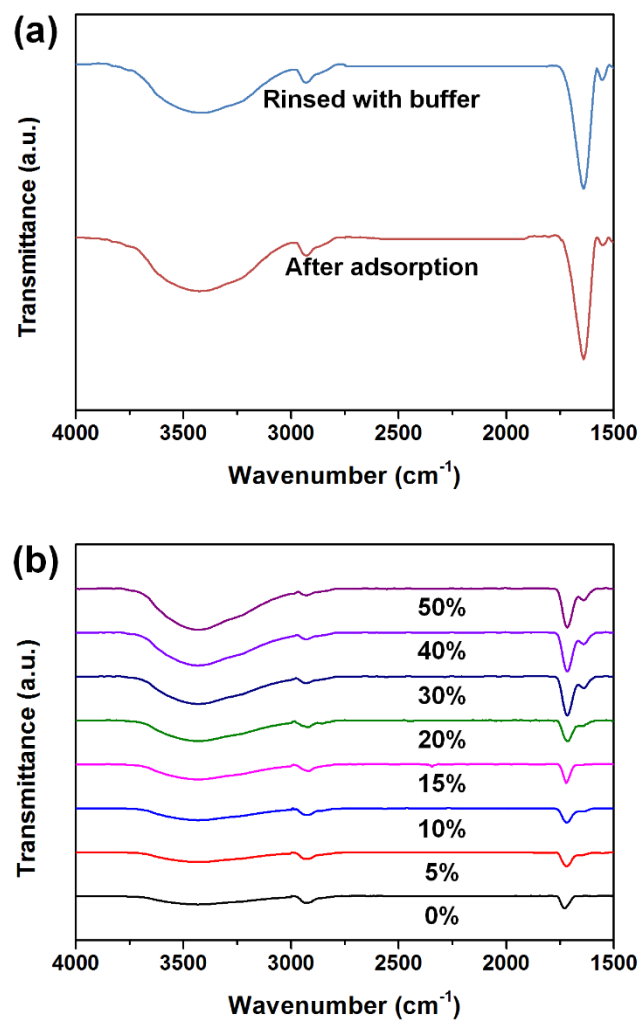


Fig. S5 (a) FT-IR spectra of PVA/MAH nanofibrous membranes after adsorption lysozyme and after rinsing with phosphate buffer. (b) FT-IR spectra of PVA/MAH nanofibrous membranes with different MAH to PVA molar ratio after adsorption lysozyme and rinsing with phosphate buffer.

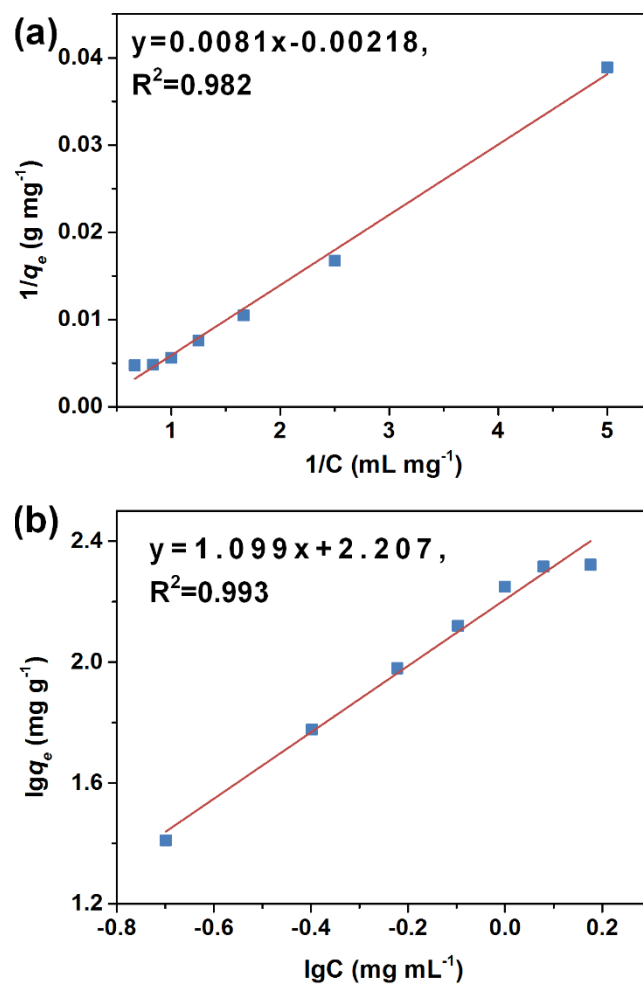


Fig. S7 The fitting curves of (a) Langmuir and (b) Freundlich isotherm models for lysozyme adsorption on PVA/MAH nanofibrous membranes.