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| Title | Elucidating the degradation mechanism of a self-degradable dextran-based medical adhesive |
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| Citation | Carbohydrate Polymers, 278: 118949 |
| Issue Date | 2021-12-03 |
| Type | Journal Article |
| Text version | author |
| URL | http://hdl.handle.net/10119/18767 |
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| Description | |

Supplementary data

Elucidating the degradation mechanism of a self-degradable dextran-based medical adhesive

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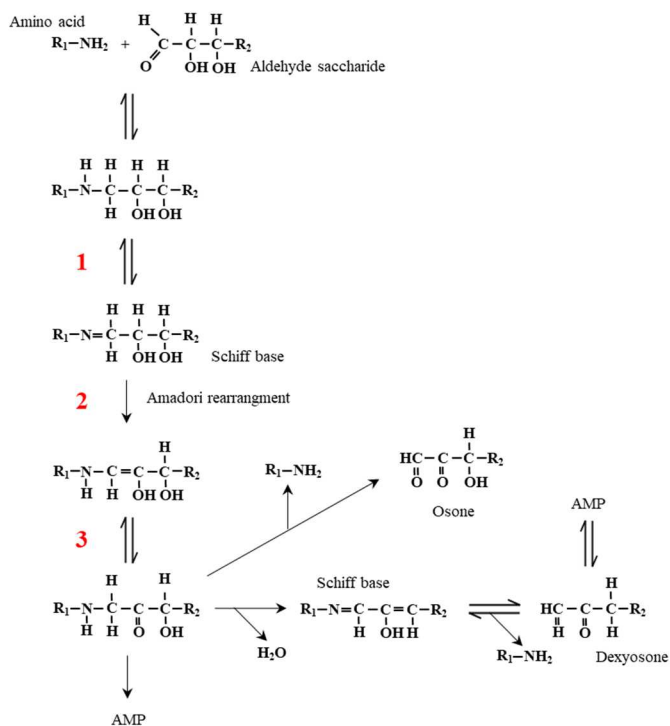
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(A)



(B)

Aldehyde Dextran

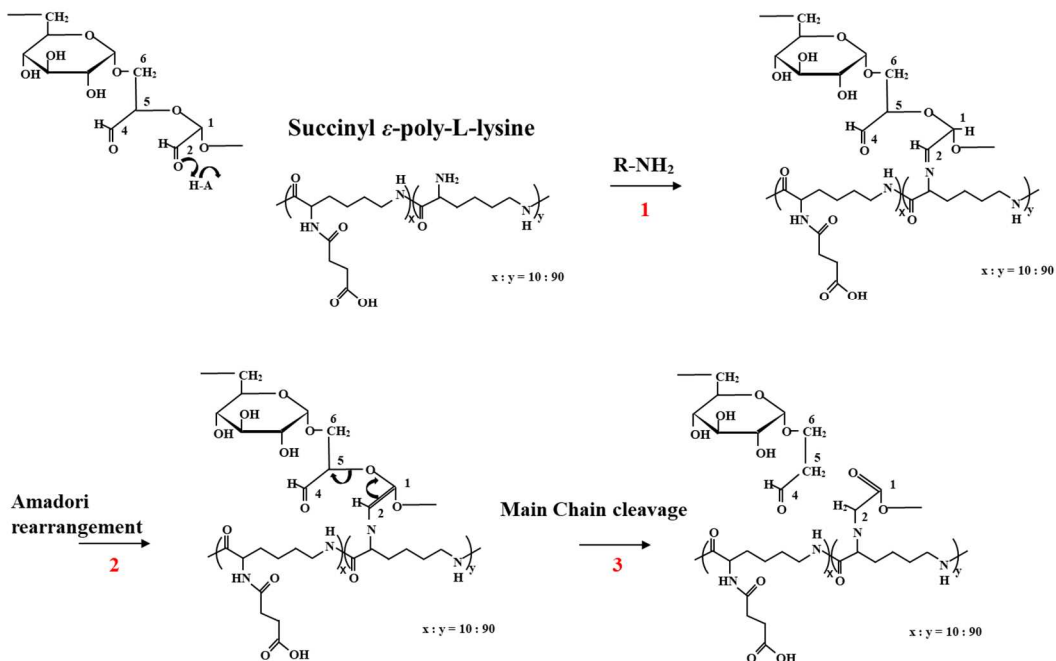


Figure S1. (A) Maillard reaction pathway of aldehyde saccharides with amino acids. (B) Molecular scission mechanism of oxidized dextran via reaction with an amine.

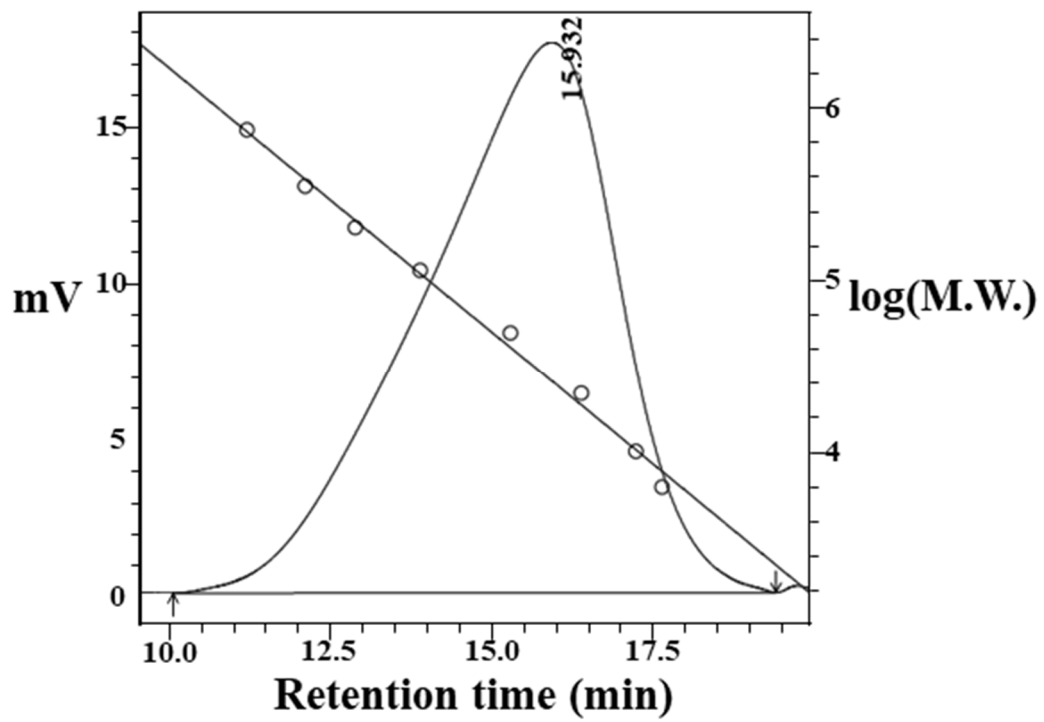


Figure S2. Differential refractometry profile of aldehyde-functionalized dextran using a G4000PW_{XL} column. M.W., molecular weight. mV, millivolt.

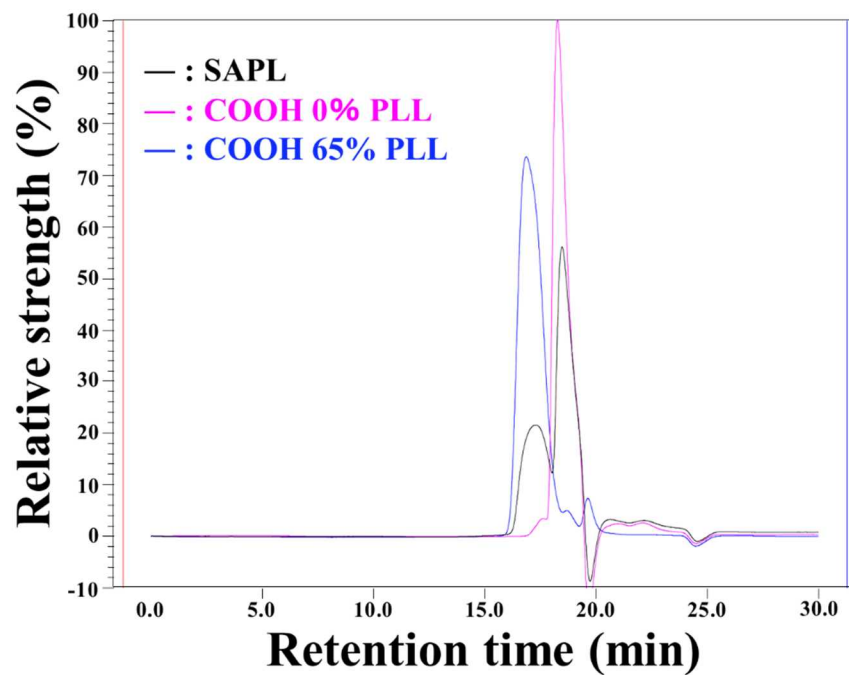


Figure S3. Refractive index spectra of succinic anhydride-treated poly-L-lysine (SAPL), poly-L-lysine (COOH 0% PLL), and 65 % carboxylated poly-L-lysine (COOH 65% PLL), obtained using a G4000PW_{XL} column.

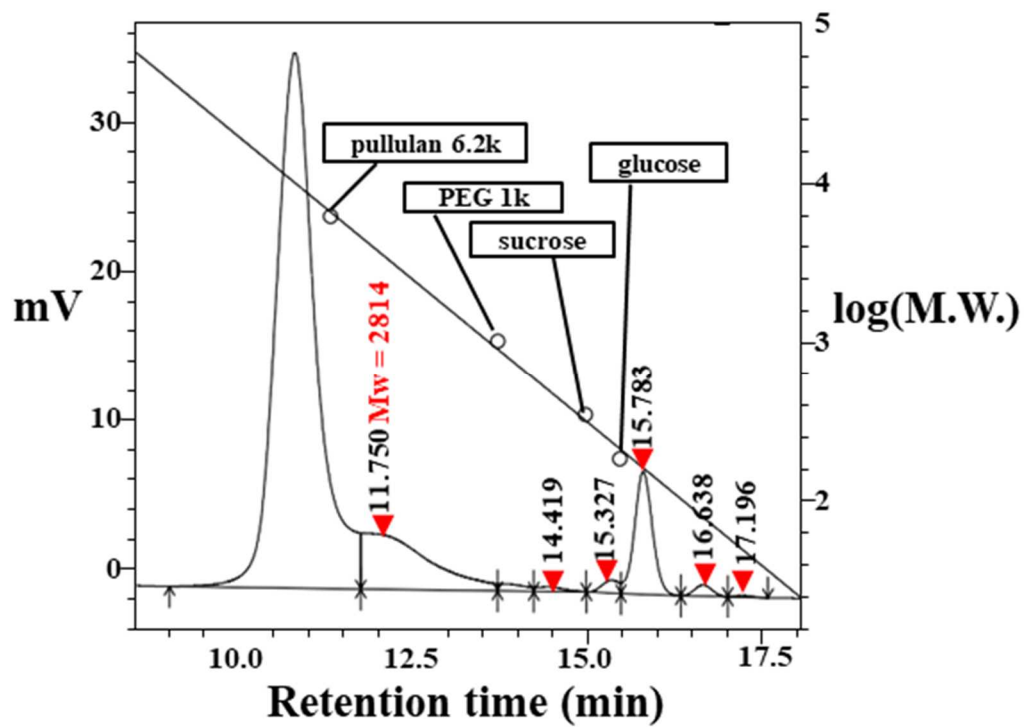


Figure S4. Gel permeation chromatogram of degradation solution (1 wk), obtained using a G2500PW_{XL} column. Mw, molecular weight; PEG, polyethylene glycol.

Table S1. Changes in the molecular weight distribution (weight-average molecular weight (M_w) / number-average molecular weight (M_n)) of the major gel permeation chromatography peaks of LYDEX gel over time.

| | | <i>Peak 1</i> | <i>Peak 2</i> | <i>Peak 3</i> | <i>Peak 4</i> | <i>Peak 5</i> | <i>Peak 6</i> |
|------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1 d | M_w / M_n | 1.06 | 2.24 | 1.35 | 1.05 | 1.22 | 1.01 |
| 3 d | M_w / M_n | 1.06 | 2.36 | 1.35 | 1.04 | 1.24 | 1.01 |
| 1 wk | M_w / M_n | 1.03 | 2.45 | 1.35 | 1.04 | 1.34 | 1.01 |
| 2 wk | M_w / M_n | — | 2.69 | 1.35 | 1.03 | 1.23 | 1.01 |
| 1 mo | M_w / M_n | — | 2.26 | 1.36 | 1.04 | 1.22 | 1.01 |

G4000PW_{XL} and G2500PW_{XL} columns were used for peaks 1–4 and peaks 5 and 6, respectively.