

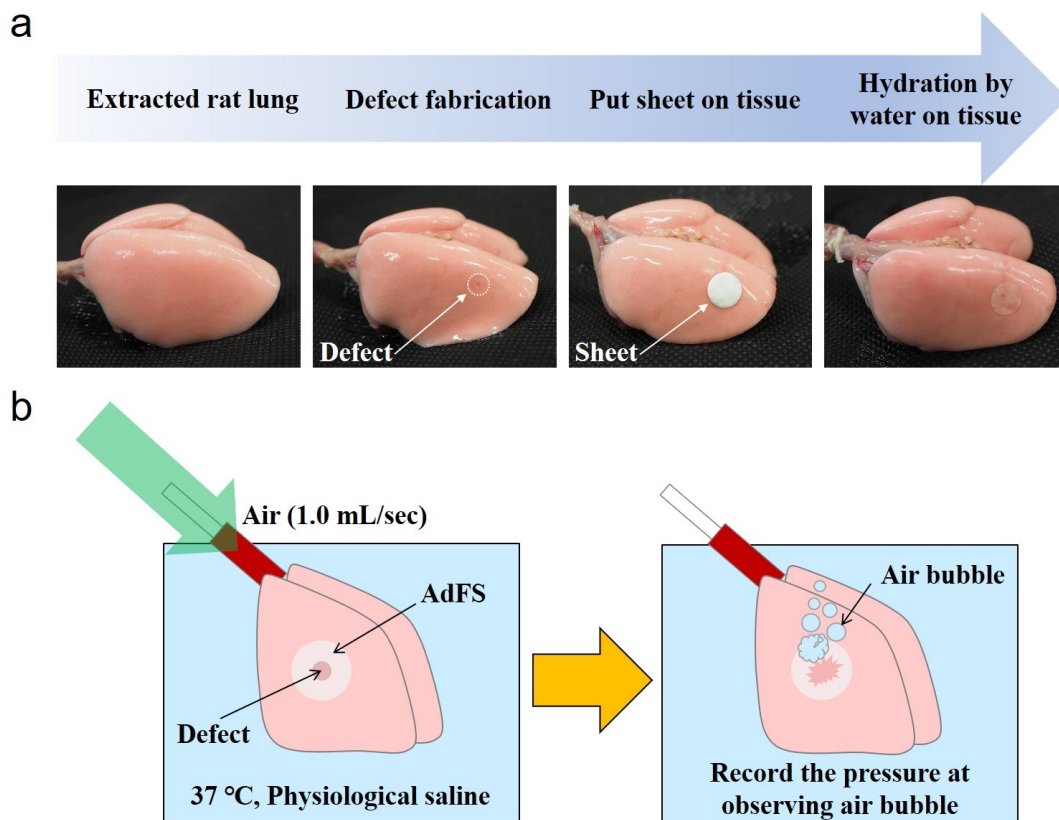
**Prevention of pulmonary air leaks using a biodegradable  
tissue-adhesive fiber sheet based on Alaska pollock gelatin  
modified with decanyl groups**

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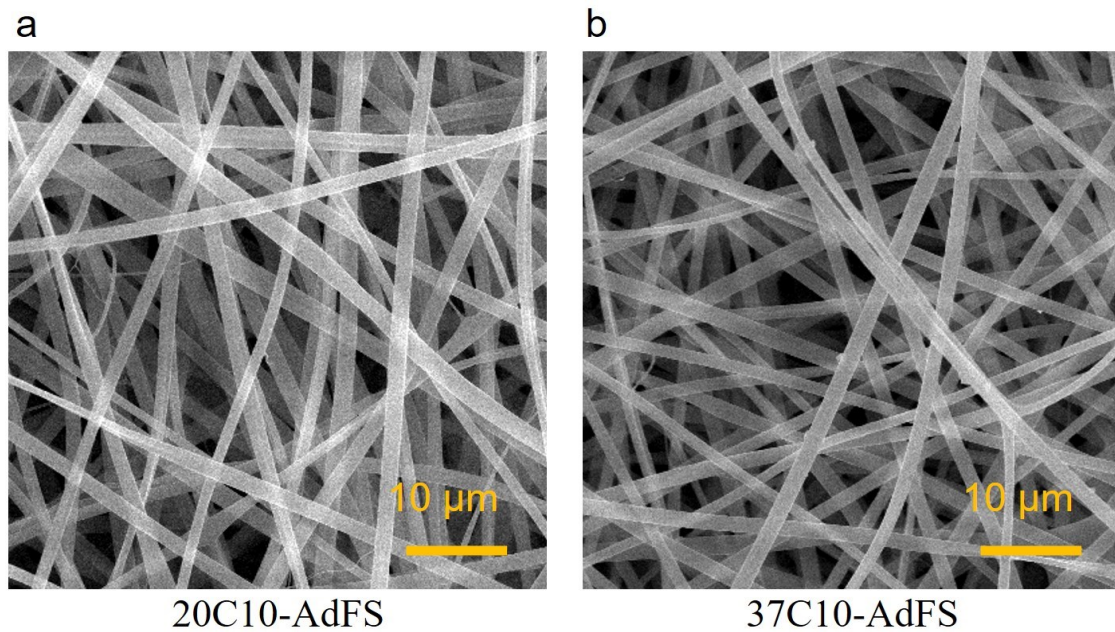
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**Supplementary Information**



**Fig. S1.** Schematic of burst strength measurements of AdFS on a fresh rat lung. **(a)** Photograph of a rat lung defect model and sample preparation. **(b)** Illustration of the system used to measure burst strength. The burst strength was identified as the pressure at which air bubbles were released from the defect site.



**Fig. S2.** SEM images of (a) 20C10-AdFS and (b) 37C10-AdFS.

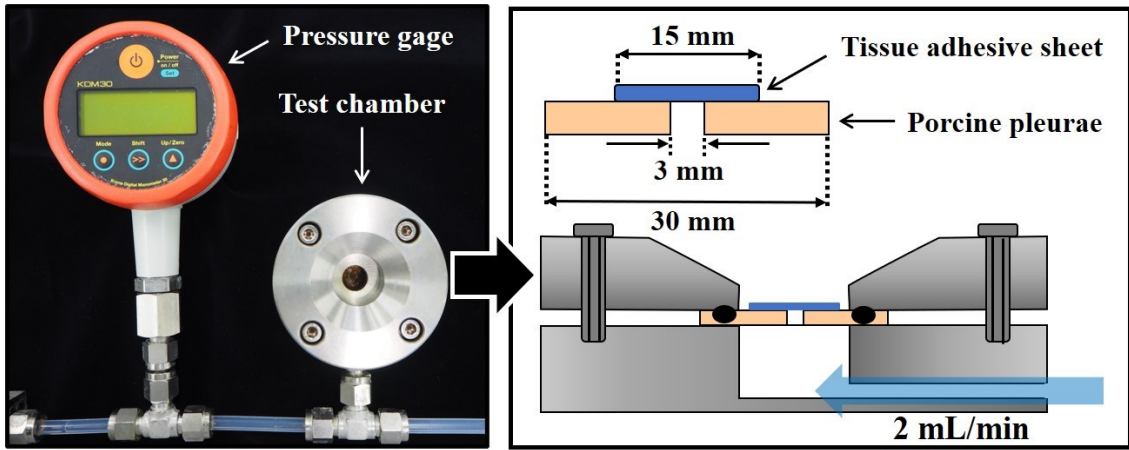
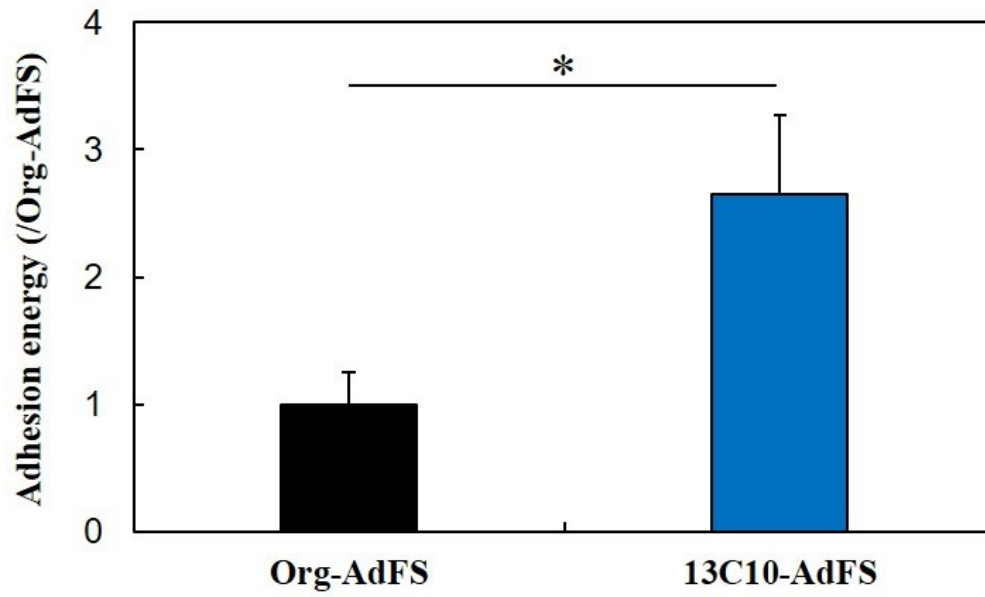
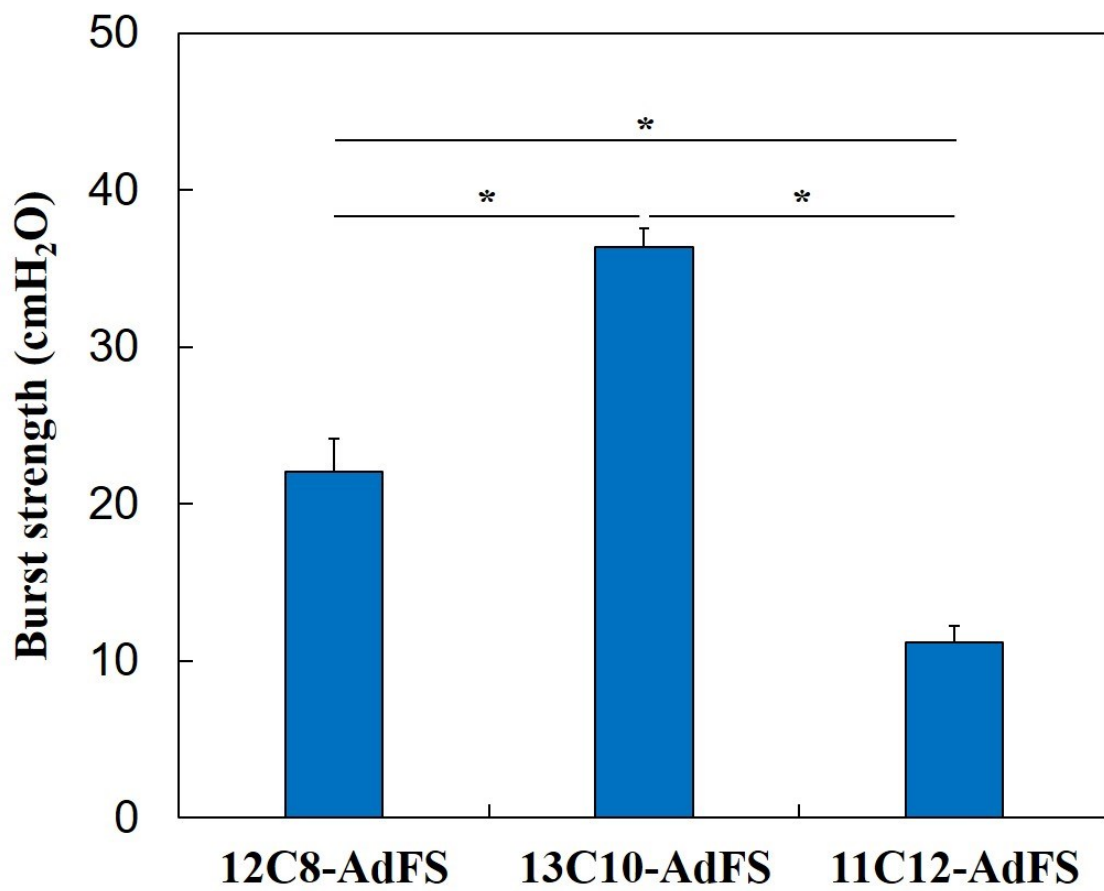


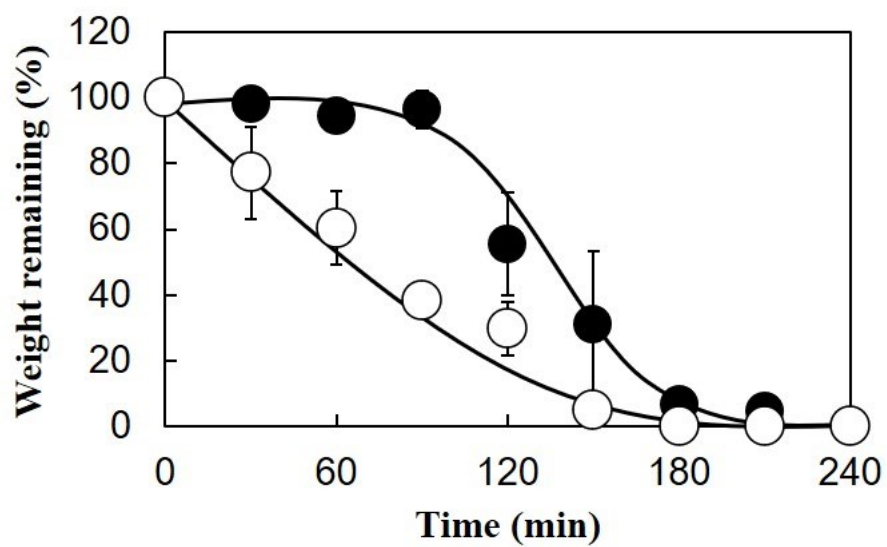
Fig. S3. ASTM F2392-04 system used for burst strength measurements.



**Fig. S4.** Adhesion energy of 13C10-AdFS compared with Org-AdFS. The data was calculated from burst strength measurement using porcine pleura. The data are the mean  $\pm$  S.E.M. of five samples ( $n = 5$ ). \* $p < 0.05$ .



**Fig. S5.** The effect of alkyl chain length of hydrophobic group in ApGln on the burst strength to porcine pleura. The data are the mean  $\pm$  S.E.M. of three samples ( $n = 3$ ). \* $p < 0.05$



**Fig. S6.** Degradation behavior of Org- and  $^{13}\text{C}10$ -AdFS in a collagenase-saline solution. The black and white circles indicate the Org- and  $^{13}\text{C}10$ -AdFS. The data are the mean  $\pm$  S.E.M. of three samples ( $n = 3$ ).