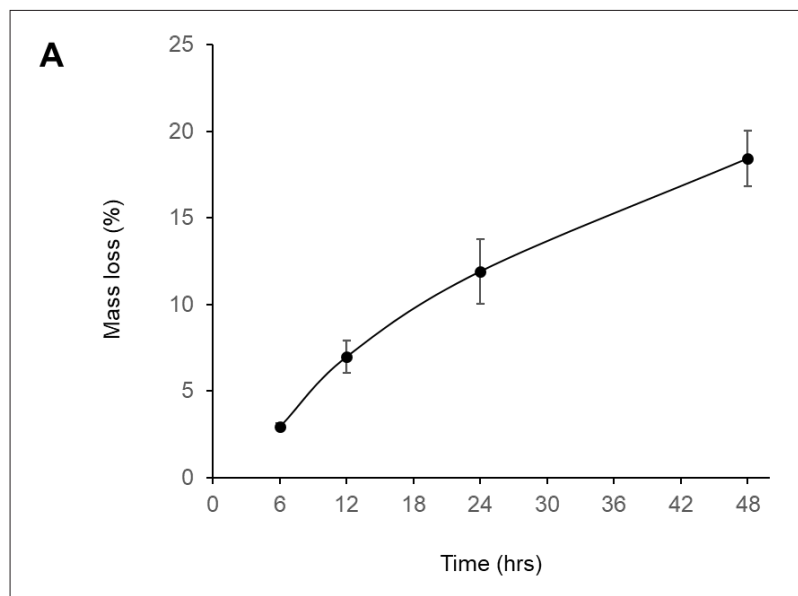


RESEARCH ARTICLE

Therapeutic effects of 3D-bioprinted mesenchymal stem cell-based artificial lymph nodes on lymphedema

Supplementary File

(A) Supplementary figure



**Figure S1.** Mass loss of 3D-bioprinted scaffolds over time. (A) The average percentage mass loss of scaffolds incubated in 0.1 M NaOH at 37 °C was measured at 6, 12, 24, and 48 h. Data represent mean ± standard deviation (*n* = 6).

(B) Supplementary materials and methods

S1. Scaffold degradation assay

To evaluate the hydrolytic degradation behavior of the bioprinted scaffolds, an accelerated degradation assay was conducted. Cylindrical scaffolds (5 mm in diameter, 5 mm in height) were prepared as described and weighed to determine their initial mass ( $W_0$ ). Each scaffold ( $n = 6$  per time point) was incubated in 5 mL of 0.1 M sodium hydroxide (NaOH) solution at 37°C under static conditions. At predefined time intervals (6, 12, 24, and 48 h), the scaffolds were removed, washed thoroughly with deionized water, and dried at room temperature for 24 h before reweighing ( $W_t$ ). The percentage of mass loss was calculated using the formula below:

$$Mass\ loss(\%) = \frac{(W_0 - W_t)}{W_t} \times 100$$

(C) Supplementary videos

- Video S1.** Indocyanine green imaging using Fluotics System (Fluobeam®, Fluoptics, France).
- Video S2.** Indocyanine green imaging in Group 1.
- Video S3.** Indocyanine green imaging in Group 2.
- Video S4.** Indocyanine green imaging in Group 3.
- Video S5.** Indocyanine green imaging in Group 4.