

1 *Electronic Supplementary Information*

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3 **Ultra-thin, transparent, porous substrates as 3D culture**  
4 **scaffolds for engineering ASC spheroids for high-**  
5 **magnification imaging**

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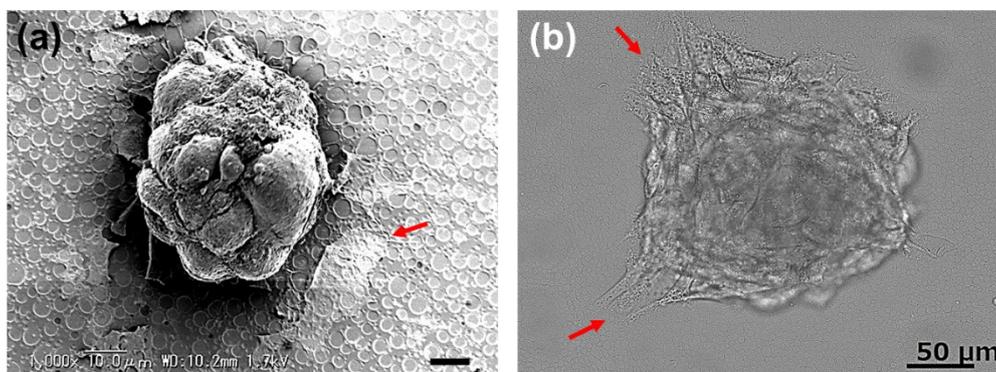
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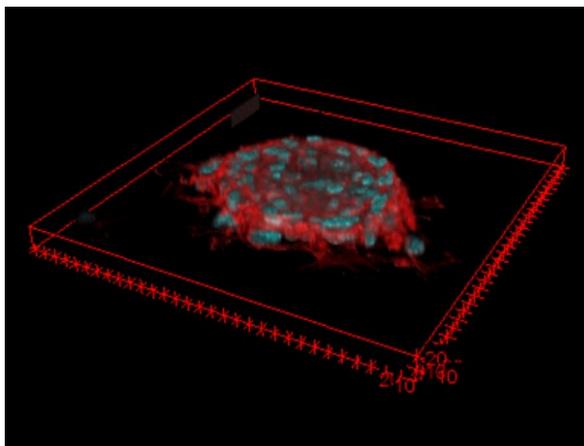
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## 1 Supporting Figure



2  
3 **Figure S1.** (a) SEM image of an adherent spheroid on the porous nanosheet (the arrow  
4 indicates the extended cellular filopodia, scale bar: 10  $\mu\text{m}$ ). (b) Phase contrast image of  
5 an adherent spheroid on the porous nanosheet (the arrows indicate the extended cellular  
6 filopodia, scale bar: 50  $\mu\text{m}$ ).

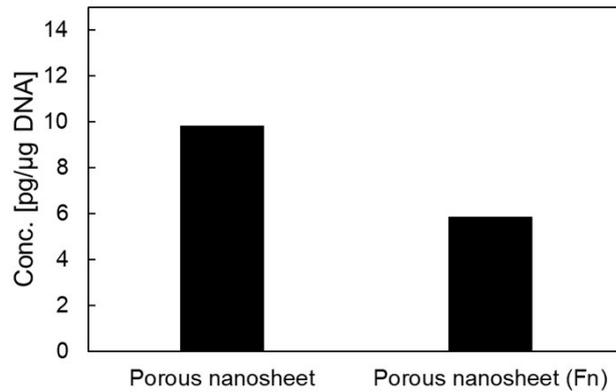
7



8

9 **Figure S2.** 3D model of a spheroid formed on the porous nanosheet reconstructed from  
10 the fluorescent images of Figure 6d by using ImageJ.

11

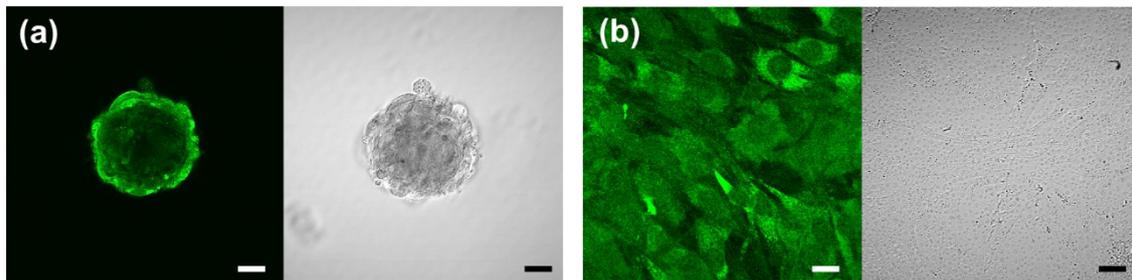


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2 **Figure S3.** Quantification of secreted FGF-2 from spheroids and monolayer cells. The

3 data represent the average ( $n = 2$ ).

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5

6 **Figure S4.** Fluorescence and phase contrast images of immunostained collagen IV

7 secreted from ASCs cultured on the (a) porous nanosheet and (b) porous nanosheet (FN)

8 (scale bars: 20  $\mu\text{m}$ ).

9

## 10 **Supporting Movies**

11 **Movie S1:** The morphology of ASCs migrating on the porous nanosheet captured with

12 40 $\times$  magnification every 30 s for 2 h.

- 1 **Movie S2:** The morphology of ASCs migrating on the flat nanosheet captured with 40×
- 2 magnification every 30 s for 2 h.
- 3 **Movie S3:** The morphology of ASCs migrating on NanoCulture Dish captured with 10×
- 4 magnification every 60 s for 6 h.
- 5 **Movie S4:** The morphology of ASCs migrating on the porous nanosheet captured with
- 6 10× magnification every 60 s for 6 h.