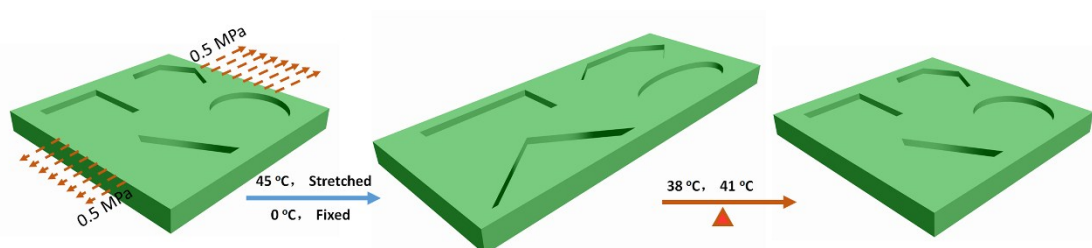


Supporting Information:

Dynamically tunable polymer microwells for directing mesenchymal stem cells differentiation

Tao Gong, Liuxuan Lu, Xian Liu, Dian Liu, Kun Zhao, Yuping Chen, Shaobing Zhou*



Scheme S1. Schematic representation of shape fixing processes. The surface microwells on c-6A PEGPCL substrate were stretched 100% and deformed at 45 °C with a tensile stress of 0.5 MPa, and cooled to 0 °C to fix the deformed shape.

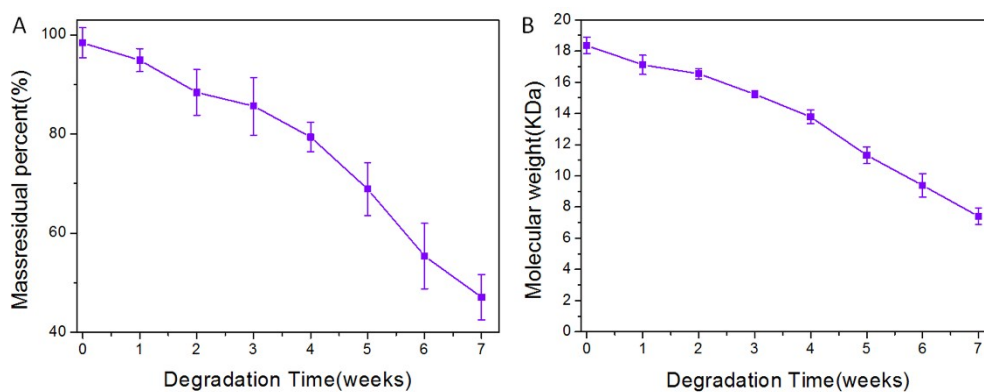


Figure S1. In vitro degradation of c-6A PEG-PCL meshes in PBS (pH 7.4) at 37 °C. Here, represent the curves of mass residual percent and molecular weight (Mw), respectively.

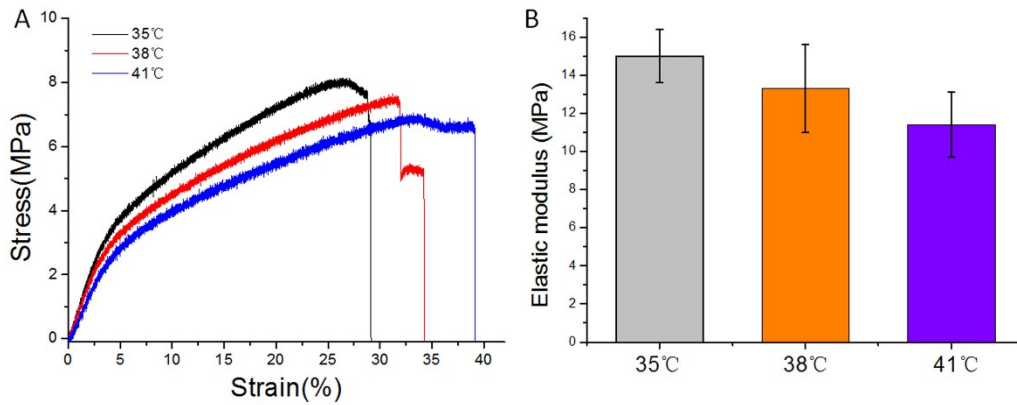


Figure S2. Mechanical properties of c-6 A PEG-PCL: a) and b) represent the Stress-strain curve and the Young's modulus.

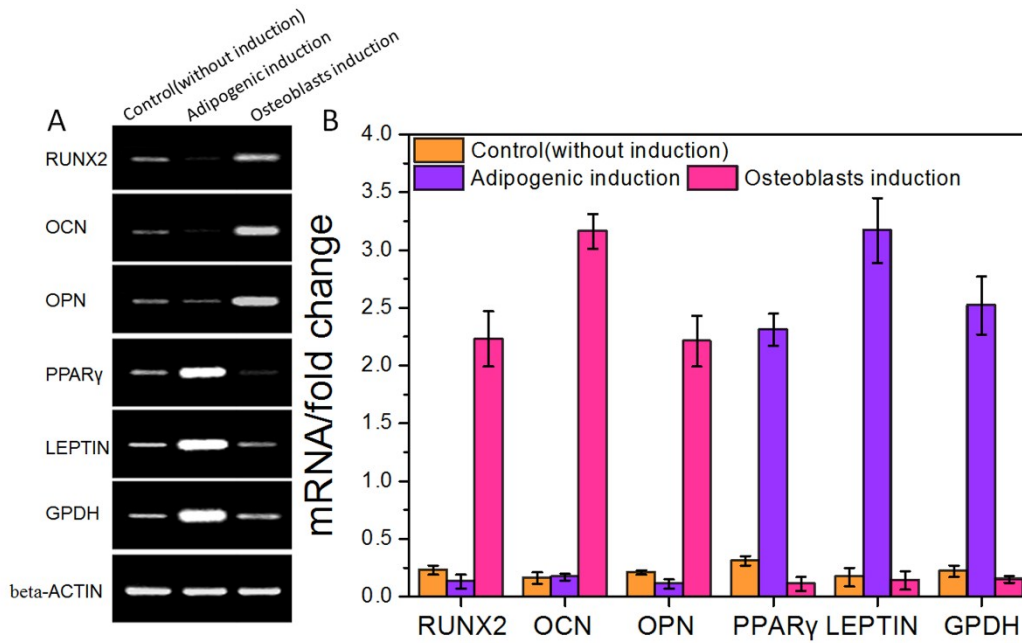


Figure S3. (A) and (B) Relative gene level expression analyses of osteogenic (RUNX2, OCN and OPN), and adipogenesis (PPAR γ , LEPTIN, and GPDH) markers, and the MSCs cultured on tissue culture polystyrene with traditional induction media (Adipogenic induction and Osteoblasts induction).

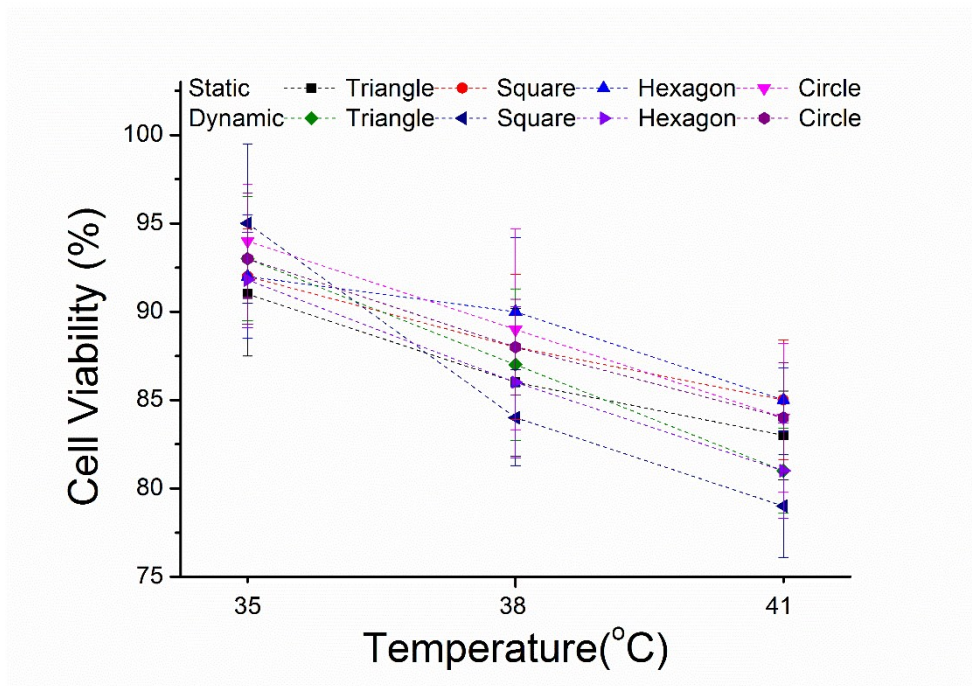


Figure S4. Cell viability (%) of rBMSCs on static surface (static-T, dtatic-S, static-H, and static-C) and dynamic surfaces including dynamic-T, dynamic-S, dynamic-H, and dynamic-C surfaces after 6 d culture.

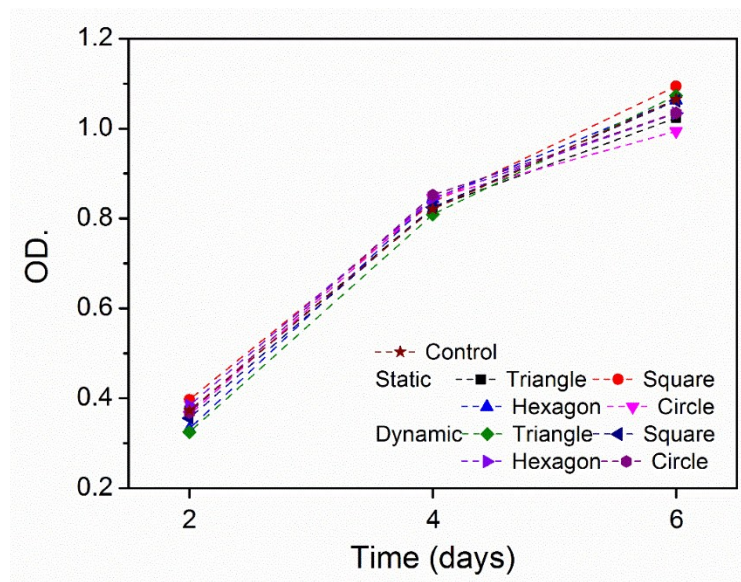


Figure S5. The data of CCK8 for MSCs cultured on the different microwells at days 2,4 and 6 post seeding, respectively.

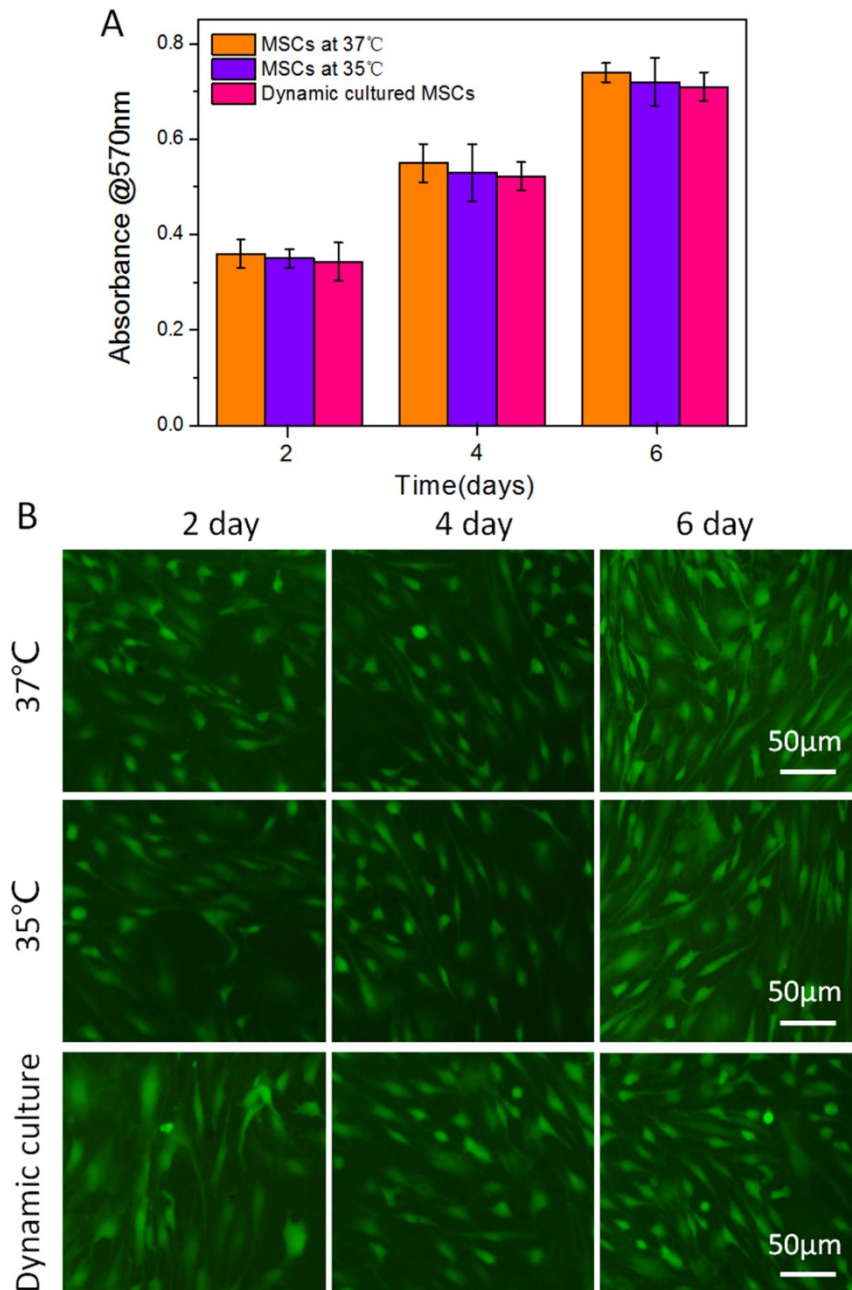


Figure S6. The cell viability (%) (A) and (B) Fluorescence images of rBMSCs stained with calcein AM for MSCs cultured on the tissue culture polystyrene for different culture temperatures at days 2,4 and 6 post seeding, respectively.

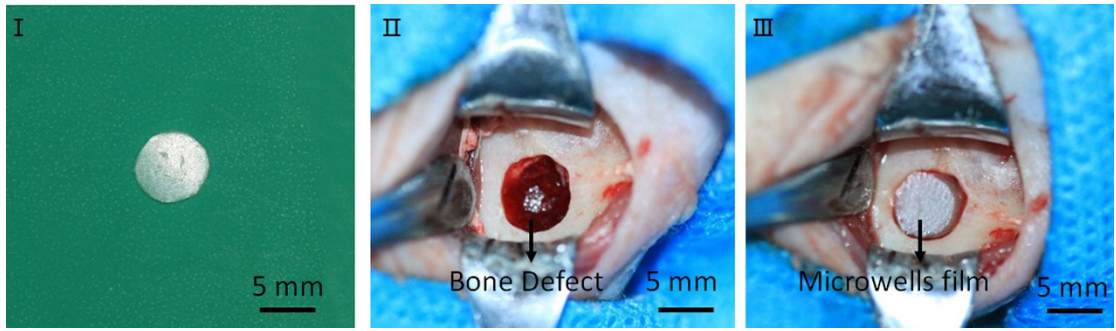


Figure S7. Dynamic tunable geometric patches implanted in the rabbit mandibular bone defect.