Supporting Information

Equilibrium water content

Specimens were immersed in PBS solution for 1 day at 37 ℃, after which the surfaces of the scaffolds were gently blotted dry with tissue paper (n=5), and then weighed. Afterwards, the wet scaffolds were dried completely by lyophilization, and then reweighed. The total equilibrium water content (W_e) of scaffolds were calculated according to the following formula, where W_3 and W_4 are the wet weight and the dry weight of the scaffolds, respectively. NC and APCM were a control.

$$We \quad (\%) = \frac{W_3 - W_4}{W_4} \times 100 \qquad (1)$$

Results and discussion

The water content of scaffolds (W_e) decreased with the increase in the concentrations of EDC (Fig. S1). W_e is 85.69±2.57% at EDC of 0.5% (w/v) which is the most similar to that of NC (We = 85.5±1.76%), while We of APCM (91.7±3.42) is significantly bigger than NC.

This can be explained by the fact that EDC can react carboxyl groups and amino functions, hydrophilic groups, on the collagen to zero length, what's more, EDC crosslinking is immensely propitious to formation of collagen fibers' tight junction and results in stabilization of the triple helix structure. While the increased pore size of APCM may be the reason for the increase of W_e.

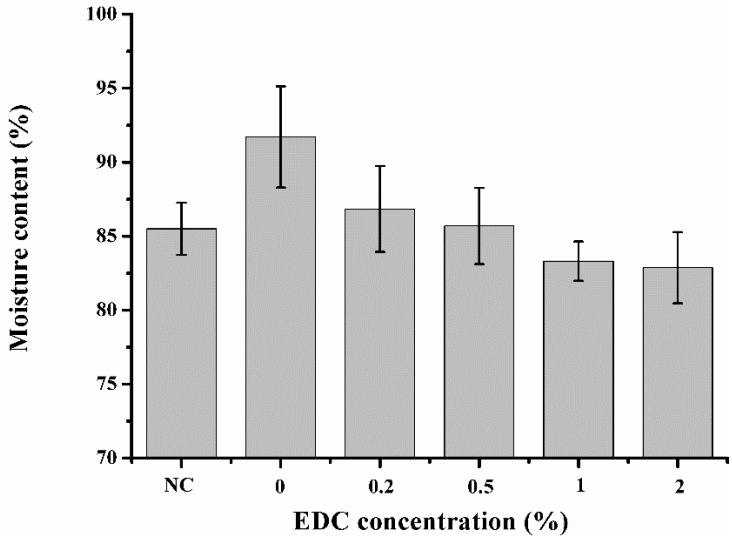

Figure S1. The water content of MAPCM.