

Supporting information

Functional injectable hydrogel with spatiotemporal sequential release for recruitment of endogenous stem cells and *in situ* cartilage regeneration

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Table S1 ICRS macroscopic score standard

Cartilage Repair Assessment ICRS	Score
I. Degree of defect repair	
In level with surrounding cartilage	4
75% repair of defect depth	3
50% repair of defect depth	2
25% repair of defect depth	1
0% repair of defect depth	0
II. Integration to border zone	
Complete integration with surrounding cartilage	4
Demarcating border < 1 mm	3
Three-quarters of graft integrated, one-quarter with a notable border > 1mm width	2
One-half of graft integrated with surrounding cartilage, one-half with a notable border > 1mm	1
From no contact to one-quarter of graft integrated with surrounding cartilage	0
III. Macroscopic appearance	
Intact smooth surface	4
Fibrillated surface	3
Small, scattered fissures or cracks	2
Several, small or few but large fissures	1
Total degeneration of grafted area	0
IV. Overall repair assessment	
Grade I: normal	12
Grade II: nearly normal	11-8
Grade III: abnormal	7-4
Grade IV: severely abnormal	3-1

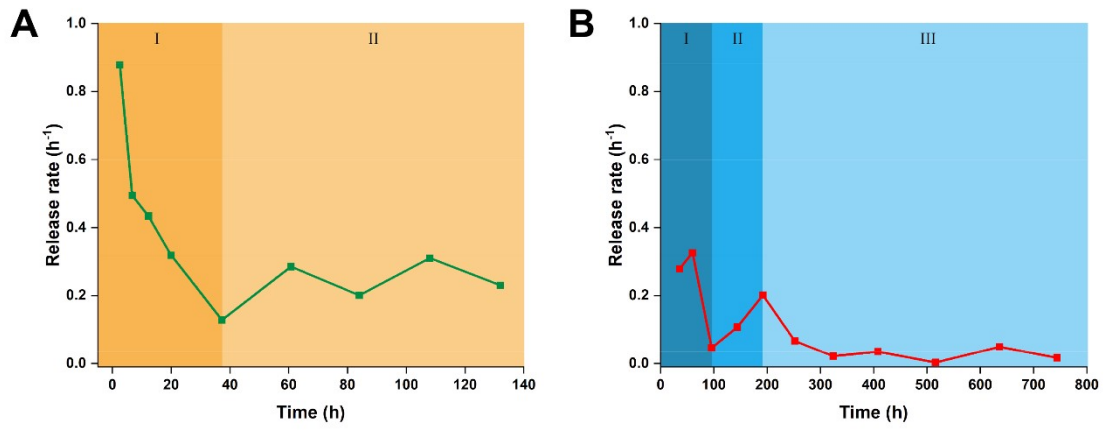


Fig. S1 The release rate profile of Apt19S (A) and KGN (B).

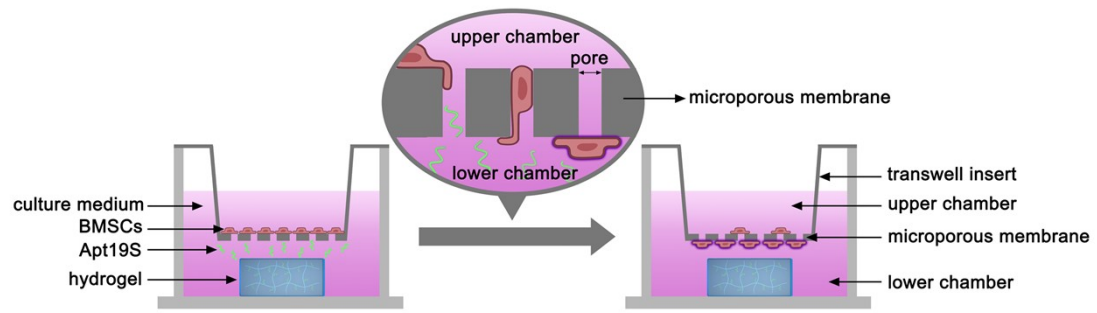


Fig. S2 The schematic of transwell system to detect BMSCs transmembrane migration affected by the release of Apt19S from Col-Apt hydrogel.