



Appendix Figure A1. (A) The mean 540 nm OD absorbance values for the ELISA samples were increased with time, which means that the TGF- $\beta$ 1 in alginate scaffold was released continuously. (B) shows the absolute TGF- $\beta$ 1 values released. Graphs were acquired from the mean values of three samples.

Appendix Table A1. Comparison of the mode of failure after supraspinatus repair between groups

	Group 1	Group 2	Group 3	p value
Healing failure	4/15*	3/16 (p=0.598 <sup>a</sup> )	2/15* (p=0.361 <sup>b</sup> and 0.682 <sup>c</sup> )	0.661
Mode of failure (insertional failure : mid-substance failure)	11 : 4	9 : 7 (p=0.320 <sup>a</sup> )	5 : 10 (p=0.028 <sup>b</sup> and 0.200 <sup>c</sup> )	0.087

Group 1, supraspinatus repair only; Group 2, supraspinatus repair with TGF- $\beta$ 1 single injection; Group 3, supraspinatus repair with TGF- $\beta$ 1 sustained release in an alginate scaffold

\* One rabbit in group 1 and another rabbit in group 3 showed active infection with pus discharge at 12-week evaluation and were excluded from the study.

<sup>a</sup>Significant difference between the groups 1 and 2.

<sup>b</sup>Significant difference between the groups 1 and 3.

<sup>c</sup>Significant difference between the groups 2 and 3.

Appendix Table A2. The result of Mann-Whitney pot-hoc analysis for the biomechanical characteristics between groups

Cross-section area	Group 1	Group 2	Group 3
Group 1		0.968	0.417
Group 2	0.968		0.874
Group 3	0.417	0.874	
Ultimate failure load	Group 1	Group 2	Group 3
Group 1		0.782	0.003*
Group 2	0.782		0.044*
Group 3	0.003*	0.044*	
Ultimate stress	Group 1	Group 2	Group 3
Group 1		0.752	0.119
Group 2	0.752		0.235
Group 3	0.119	0.235	

Group 1, supraspinatus repair only; Group 2, supraspinatus repair with TGF- $\beta$ 1 single injection; Group 3, supraspinatus repair with TGF- $\beta$ 1 sustained release in an alginate scaffold

\*Statistically significant,  $p < 0.05$

Appendix Table A3. The result of Mann-Whitney pot-hoc analysis for the histological results according to the modified Bonar score between groups

Tenocyte	Group 1	Group 2	Group 3
Group 1		0.066	0.001*
Group 2	0.066		0.020*
Group 3	0.001*	0.020*	
Ground substance	Group 1	Group 2	Group 3
Group 1		0.041*	0.040*
Group 2	0.041*		0.667
Group 3	0.040*	0.667	
Collagen	Group 1	Group 2	Group 3
Group 1		0.381	0.034*
Group 2	0.381		0.059
Group 3	0.034*	0.059	
Vascularity	Group 1	Group 2	Group 3
Group 1		0.859	0.586
Group 2	0.859		0.759
Group 3	0.586	0.759	
Total score	Group 1	Group 2	Group 3
Group 1		0.051	<0.001*
Group 2	0.051		0.042*
Group 3	<0.001*	0.042*	

Group 1, supraspinatus repair only; Group 2, supraspinatus repair with TGF- $\beta$ 1 single injection; Group 3, supraspinatus repair with TGF- $\beta$ 1 sustained release in an alginate scaffold

\*Statistically significant,  $p < 0.05$