Supplementary Information for

Nanocomposite injectable gels capable of self-replenishing regenerative extracellular microenvironments for *in vivo* tissue engineering

Koji Nagahama¹*, Naho Oyama¹, Kimika Ono¹, Atsushi Hotta², Keiko Kawauchi¹ and Takahito Nishikata¹

¹Department of Nanobiochemistry, Frontiers of Innovative Research in Science and Technology (FIRST), Konan University, 7-1-20 Minatojima-Minamimachi, Kobe 650-0047, JAPAN.

²Department of Mechanical Engineering, Keio University, 3-14-1 Hiyoshi, Yokohama 223-8522, JAPAN

Contents

Figure S1. Wide-scan XPS spectra of PLGA-PEG-PLGA/LAPONITE gels.

Figure S2. Schematic diagram of experimental procedure for muscle regeneration.

Figure S3. Photographs of femoral muscle injured nude mouse after transplantation of C2C12 cells with PLGA-PEG-PLGA/LAPONITE gels.



Figure S1. Wide-scan XPS spectra of PLGA-PEG-PLGA/LP hybrid gel (red), PLGA-PEG-PLGA gel (black), and collagen type-I (blue).



Figure S2. Schematic diagram of the experimental procedure, from the establishment of a femoral muscle injured mouse model to transplantation of C2C12 cells with PLGA-PEG-PLGA/LP hybrid injectable gel.



Figure S3. Representative photographs of femoral muscle injured nude mouse at days 1, 3, 7, 10, and 14 after transplantation of C2C12 cells with PLGA-PEG-PLGA/LP hybrid gels, PLGA-PEG-PLGA gel, Matrigel, and PBS.