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| Paper Title: | Improvement of the donut-shaped cultured muscle actuator's contraction force |
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Abstract

We have fabricated a donut-shaped actuator that contracts pores. We are trying to improve the contraction force by controlling the orientation of muscle fibers during the process of culturing muscle cells. We have focused on the seeding concentration of muscle cells to improve the contraction force further. However, when cells are seeded at high concentrations, they aggregate, making it impossible to maintain the actuator shape. In this study, an outer frame was placed around the circumference of the actuator to prevent aggregation. Also, the outer frame was coated to improve cell adhesion, and the contraction rate was measured by electrical stimulation. Based on the above, this study aims to investigate the cell seeding concentration and fabricate a cultured muscle actuator with a higher contraction force.
