

Bio 3D printing for tissue engineering using Silk fibroin

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Silk fibroin(SF) of silkworms has been used as cloths and simply suture materials in medical field before the very long time ago. But recently, SF has been widely studied as biomaterials and engineering fields. In the biomedical field, SF is being developed such as the dermal substitute, tympanic membrane, bone and drug delivery. As a new direction or a way for SF applications it is being developed electronics, photonics, MEMS and microfluidics in the engineering field. Recently, three-dimensional printing is a fast-growing trend in tissue engineering due to its ability to fabricate patient-specific scaffolds with well-controlled porous architecture and the capability of printing cells in 3D configurations. Nowadays, 3D printing is popularly used for tissue engineering and regenerative medicine. Because it is easy to make detail and customized structures. This presentation will focus on fabrication, characterization, and outcomes of SF biomaterials using 3D printer.