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Ear Tissue Regeneration Using Human Cells and Novel Nano-Cellulose Scaffolds (EAREG)

Auricular reconstruction remains one of the greatest challenges of reconstructive surgery. We propose using a novel nano-biomaterial, bacterial cellulose as a scaffold for ear tissue regeneration using a co-culture of human chondrocytes and stem cells. Our goal is to develop and evaluate the pre-clinical stages for auricle reconstruction therapy, and propose an entry-strategy for introducing this novel therapy to the clinic. The methods and results developed here will also be applicable for the regeneration of nose, trachea, spine and articular joint tissues.

