

## Hypothermic Spinning for Cell and Tissue Storage

Initiative: zukunft.niedersachsen (nur ausgewählte Ausschreibungen)

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Preservation of cells, cellular therapeutics and constructs is an integral step in any cell therapy procedure. It allows storage and transport to ensure their on-demand availability for clinical application and regenerative therapy. There are two primary modes of cell preservation: hypothermic preservation (short-term storage) and cryogenic preservation (long-term storage). In this project, the scientists focus on a new method for low-cost and efficient hypothermic preservation of cells. They consider cells that can be encapsulated in fiber meshes (inter-fiber) and within single fibers (intra fibers). For this, they are using know-how in polymer processing (electrospinning), polymer physics and cryo-engineering. The validation of the novel approach is carried out by using different cell types, e.g. human umbilical vein endothelial cells (sensitive) and osteosarcoma cell line (robust). By closely surrounding the living cells with fibers, shall mimic the in vivo environment. The research team hypothesize, that this strategy will prolong the cell longevity. Finding the optimal hypothermic preservation parameters (at refrigeration temperature 4°C) holds great potential because of the availability and simplicity. Above all, the approach is promising for regions with limited energy supply and could eliminate the need for costly and climate affecting production of liquid nitrogen.

### Projektbeteiligte

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