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Stem cell generation and manipulation by nanoparticle mediated gene transfer for the safe clinical application of gene-modified cells (NanoGene)

The NanoGene project aims to offer an alternative for the risky use of viral vectors in gene therapy. To this end, we will develop an innovative gene-transfer system based on nanoparticles for genetic modification of cells and their safe clinical application. The novel system will be used for cancer treatment by means of delivery of anti-tumor genes into mesenchymal stem cells, which possess an innate ability to migrate specifically to tumors. In addition, the novel gene transfer system will be used to generate induced pluripotent stem cells from somatic cells for future application in cell therapy.

