

**P028** Synthesis, application and quantitation of clamp-bioshuttle-carriers for plasmid delivery into nuclei of prostate cancer cells

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Efficient and safe delivery is required for genetic interventions. The breakthrough of this promising approach was hampered by the risk of inflammatory reactions, inefficient delivery strategies, and the unexplained specific local gene activation and its expression rate in the target tissue.

A non-viral gene delivery system for inactivated genes was developed, optimized to enter into cells without adverse reactions. After local activation, the gene expression rates and the intracellular distributions were measured by CLSM and quantified by use of mathematical analyses.

We observed a rapid and an almost 100% cellular uptake of the Clamp-BioShuttle-phNIS-EGFP and a consistent gene expression after 24 h. Further we observed that non-activated control cells did not show any fluorescence signal. Therefore 'BioShuttle' carriers can be considered as helpful tool and as an important step forward in the technology for gene transfer, gene therapeutic approaches and for molecular diagnostics. Applications to use it in "molecular imaging" of prostate cancer and brain tumors are ongoing.