

**P007** New promising CPP derived from human calcitonin: application and uptake mechanism

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Previously, it was found out that human calcitonin (hCT) and its C-terminal fragment hCT(9-32) are internalised by the nasal epithelium and various other cell lines by an endocytotic mechanism. Until now, several modified derivatives of hCT(9-32) optimised in their stability and internalisation ability were developed.

Recently, we could demonstrate the application of branched hCT-derived CPP as very promising transfection reagents. We investigated the intracellular delivery of plasmid DNA (encoding for eGFP) in primary and other cell lines and it turned out that the transfection efficiency was even better than that of the well characterised CPP Tat. Furthermore, we labelled one branched hCT analogue with quantum dots of different emission wavelengths and studied the uptake into several cell-lines by co-localization studies and time-dependent internalisation studies. In addition, we found out that these nanocrystal-peptide bioconjugates are still able to transport oligonucleotides like aptamers into cells. In the future, these new developed branched carrier peptides that show no cytotoxicity may function as very potential delivery vectors.