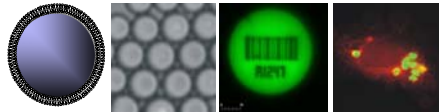


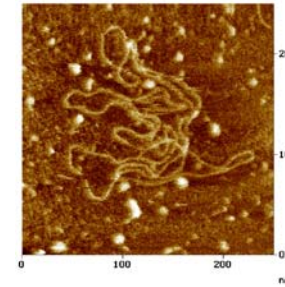
## Ghent Research Group on Nanomedicines

Light Microscopy Methods to Study Intracellular Fate of Nanoparticulate Systems

Helsinki Drug Research 2008

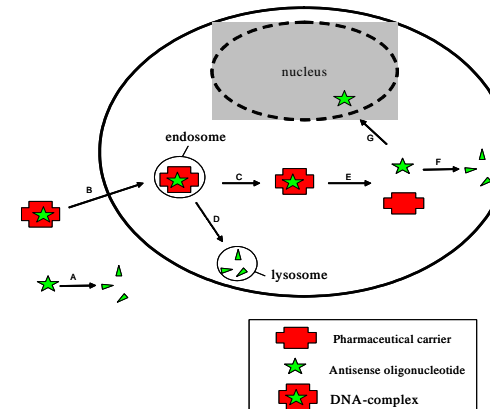
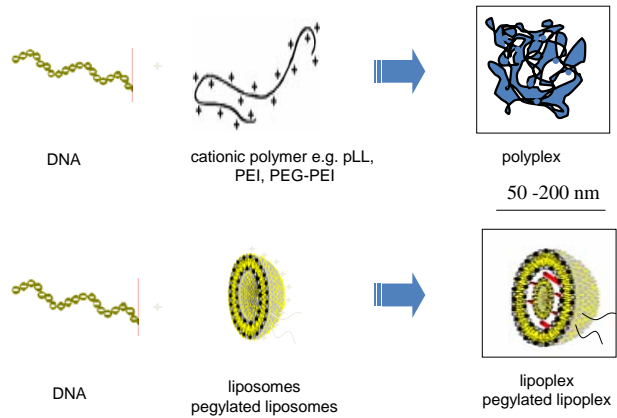


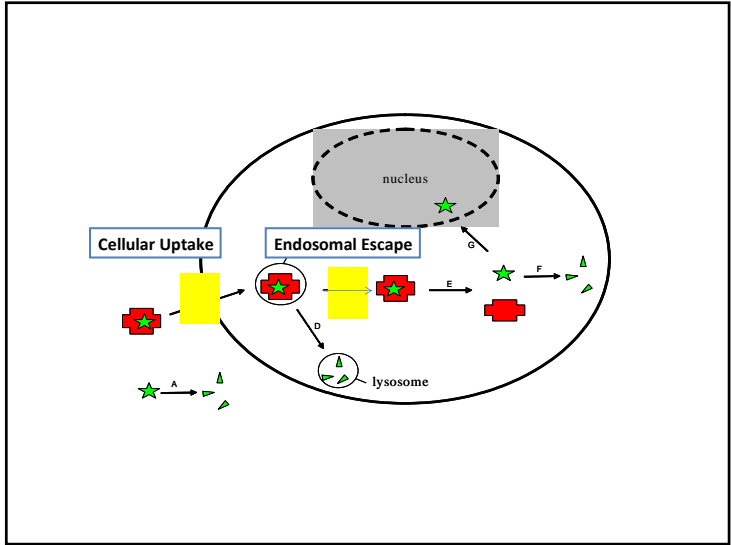
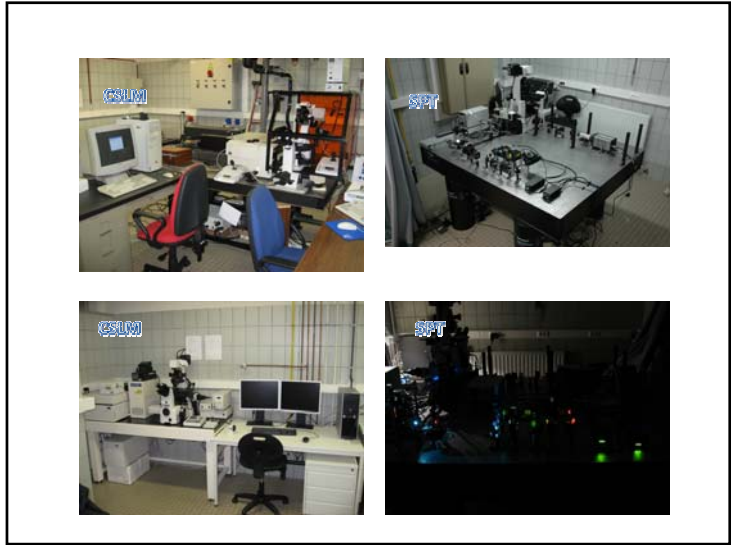
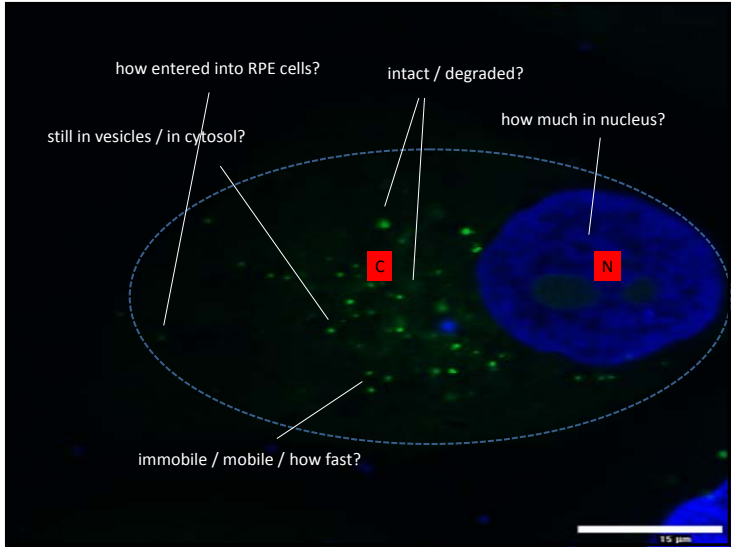
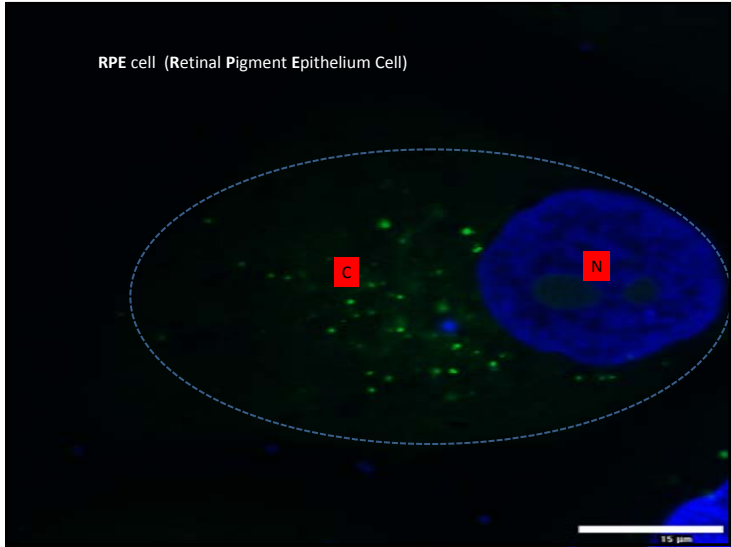
Department of Pharmaceutics, Ghent University, Belgium

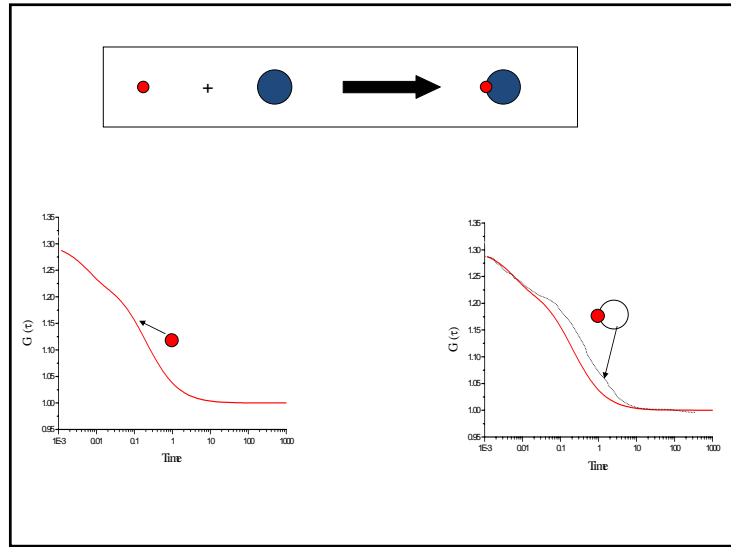
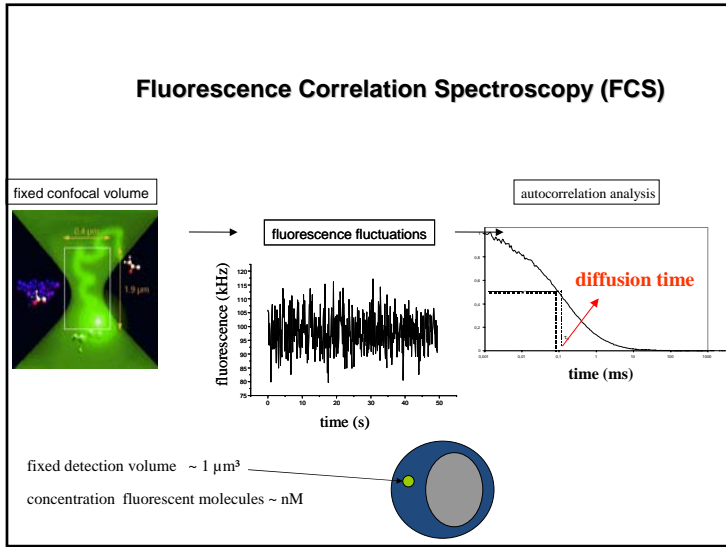
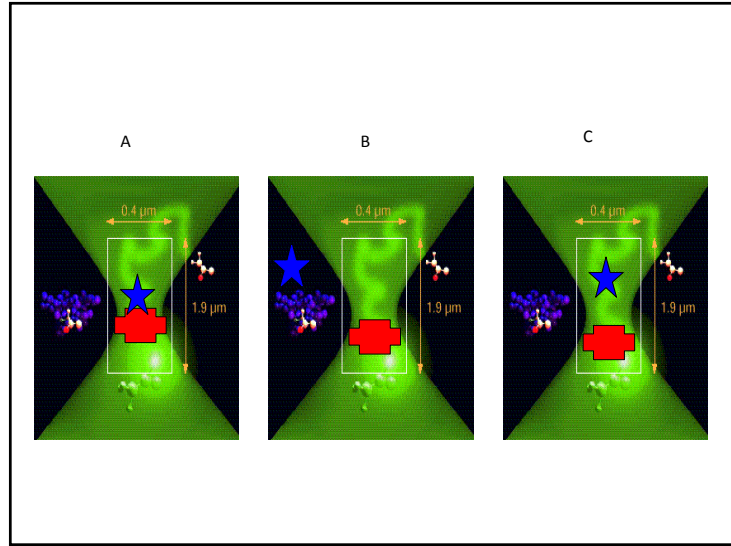
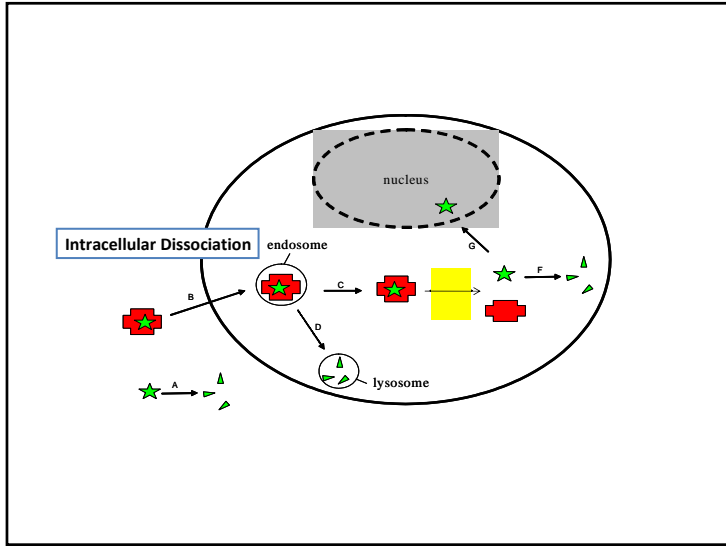


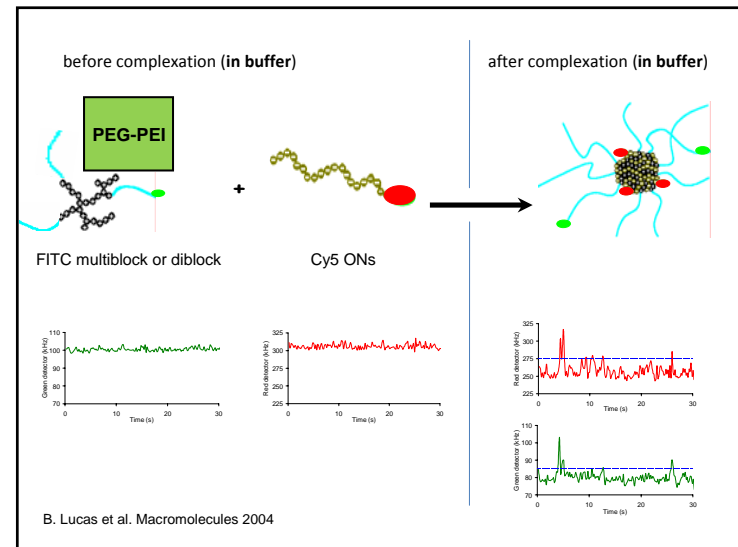
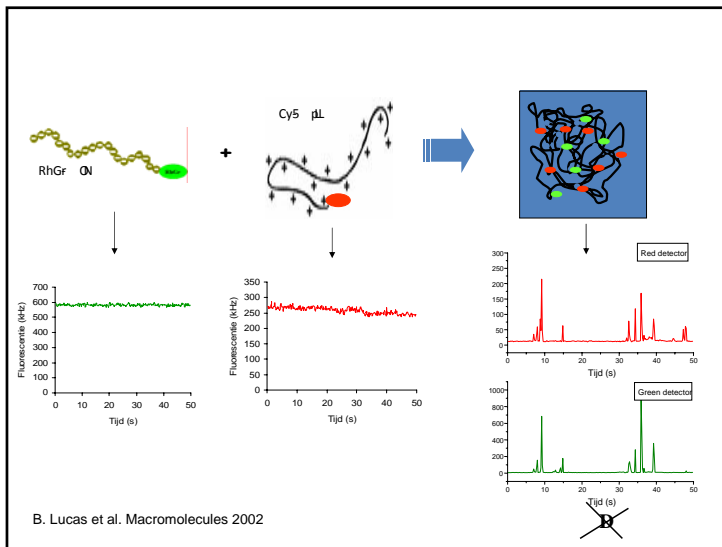
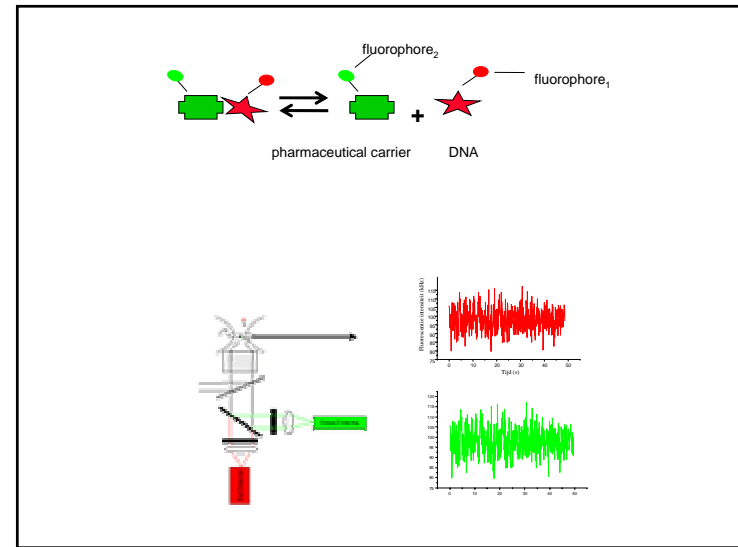
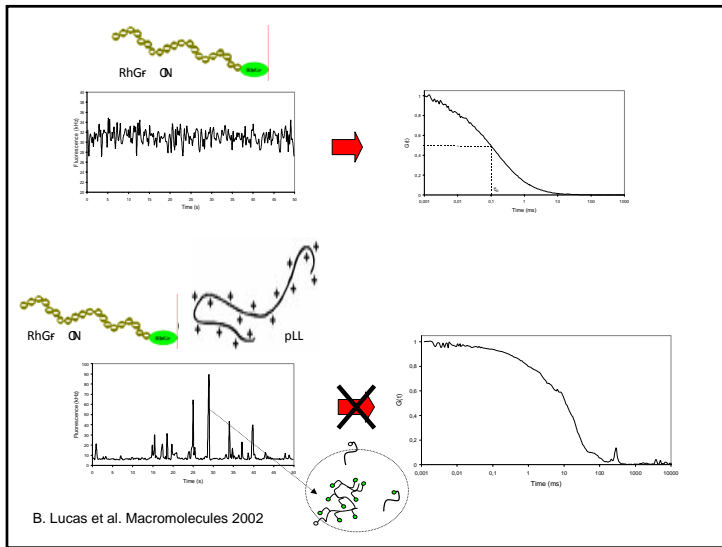
plasmid DNA (Atomic Force Microscopy)

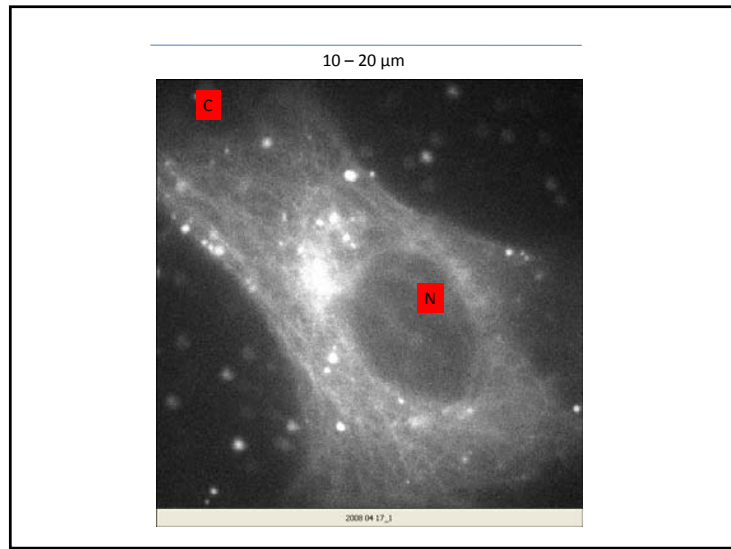
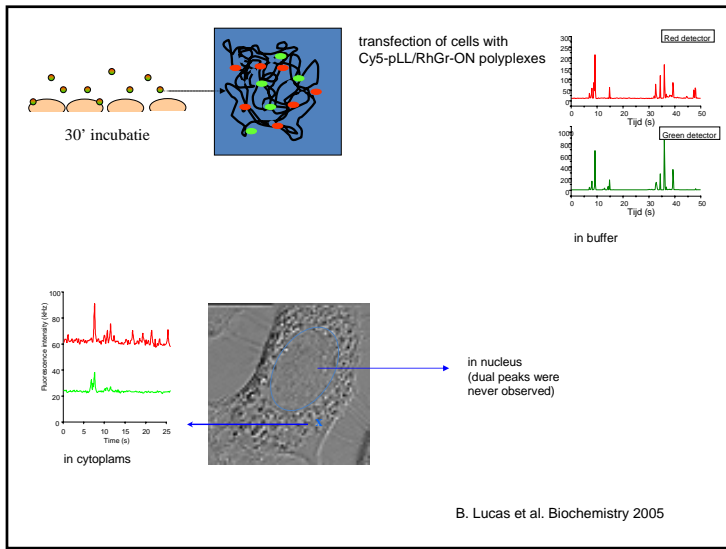
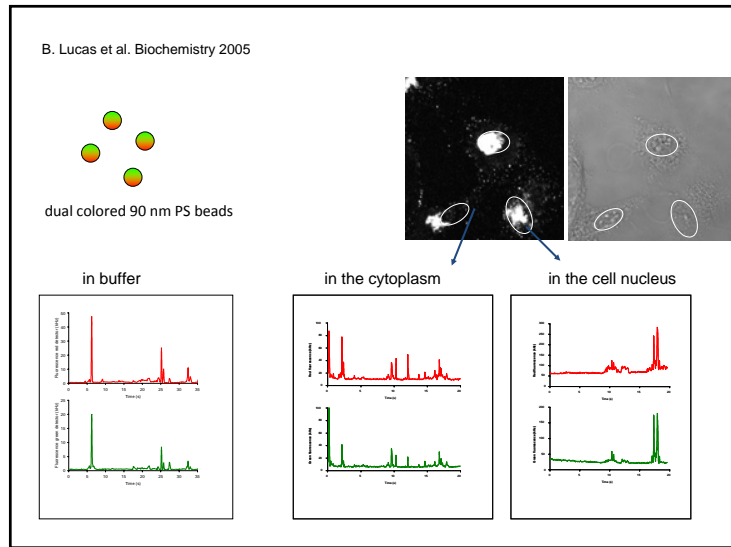
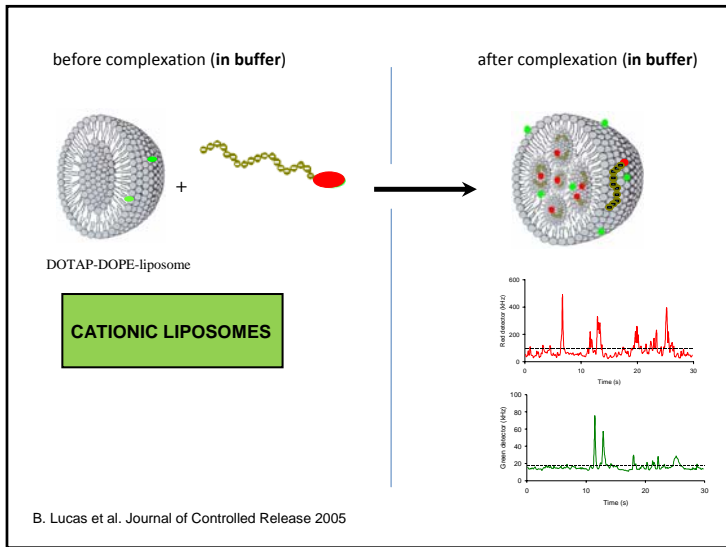
## non-viral carriers for DNA therapy

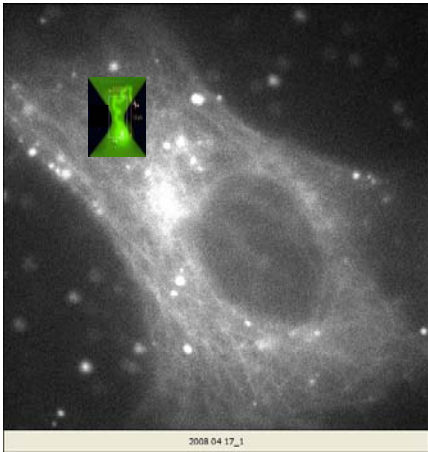










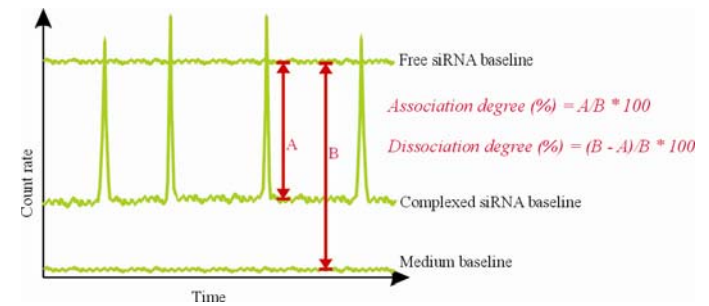


Gel Electrophoresis (*polyacrylamide, agarose*)

- Relatively high siRNA-concentrations required (*100-500 nM*)
- Time consuming (*loading, running, staining, photography*)
- Poor serum compatibility (*siRNA degradation, smear formation*)
- Difficult and inaccurate quantification (*densitometry*)

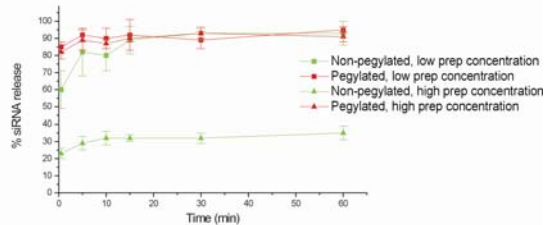


Fluorescence

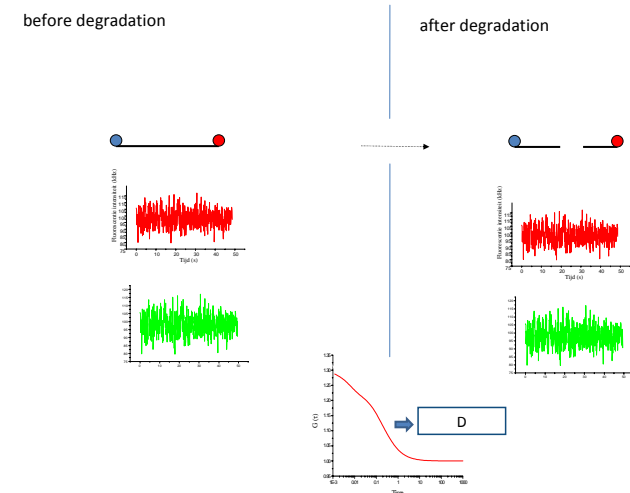
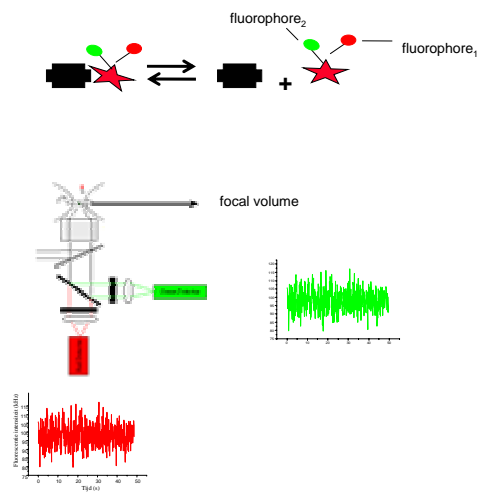
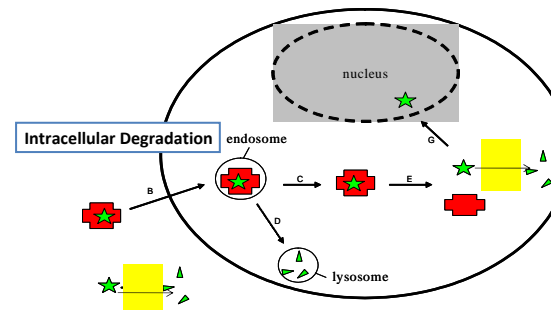


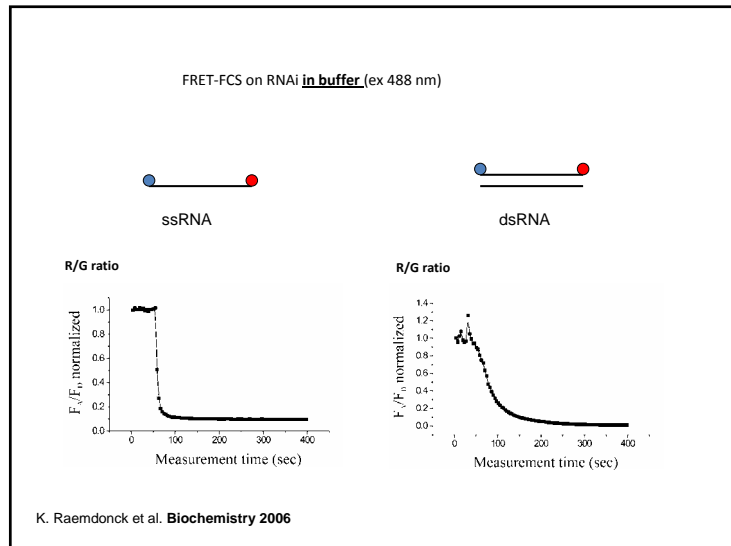
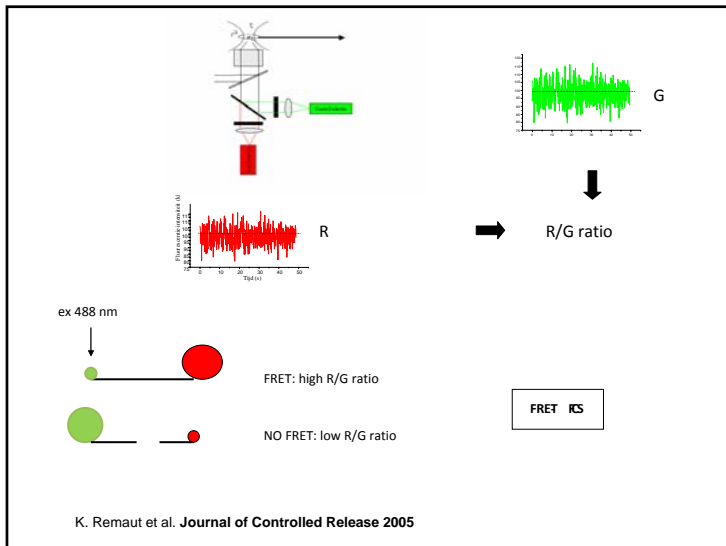
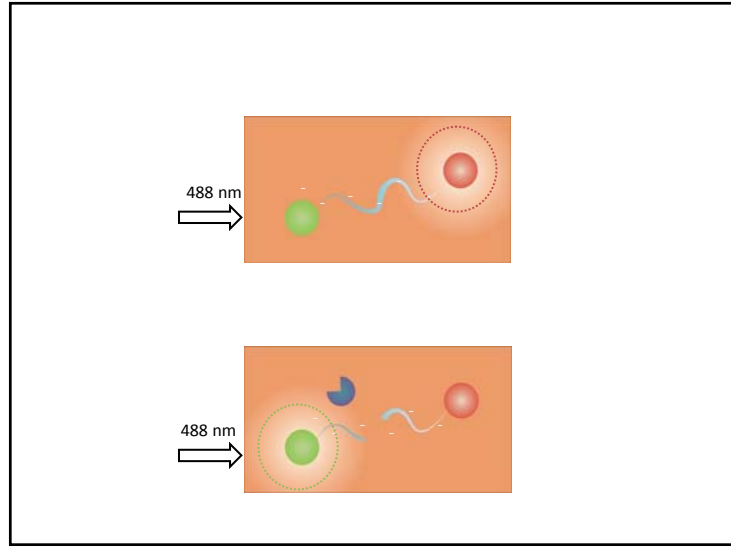
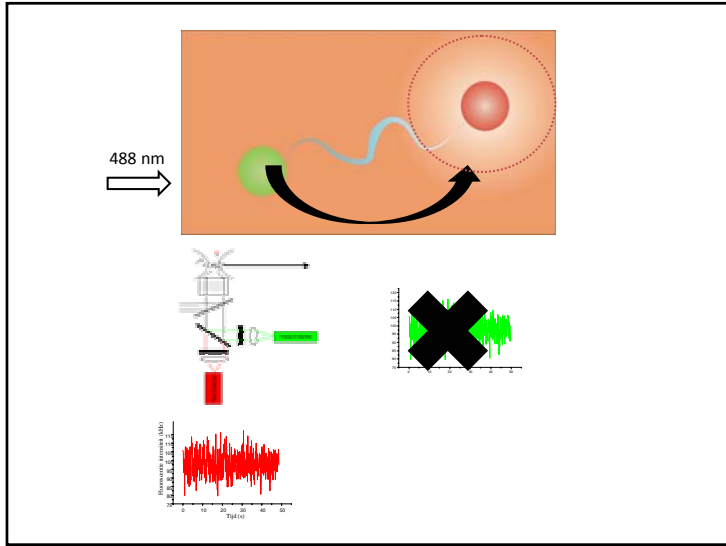
K. Buyens et al. *Journal of Controlled Release* 2008

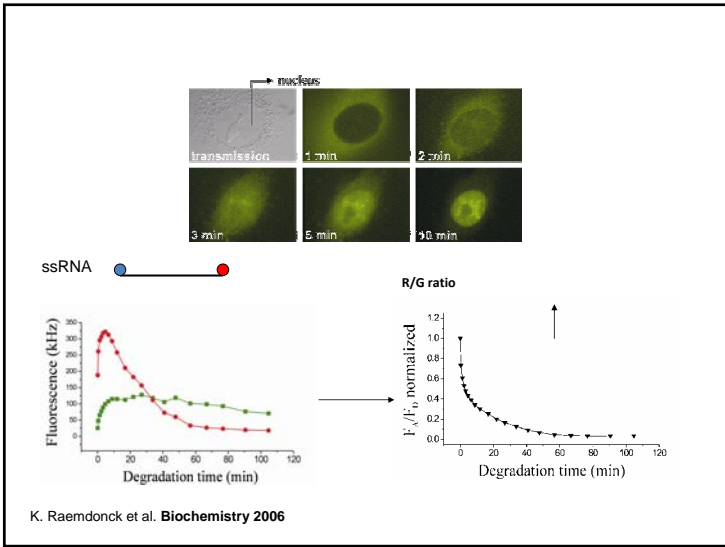
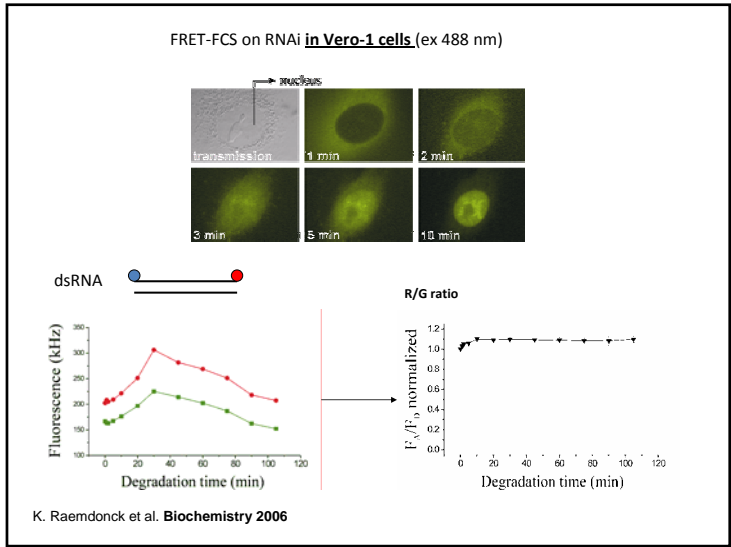
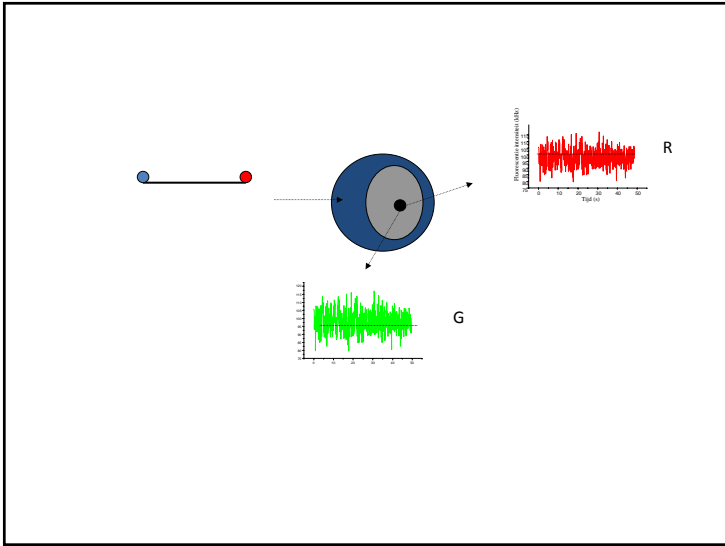
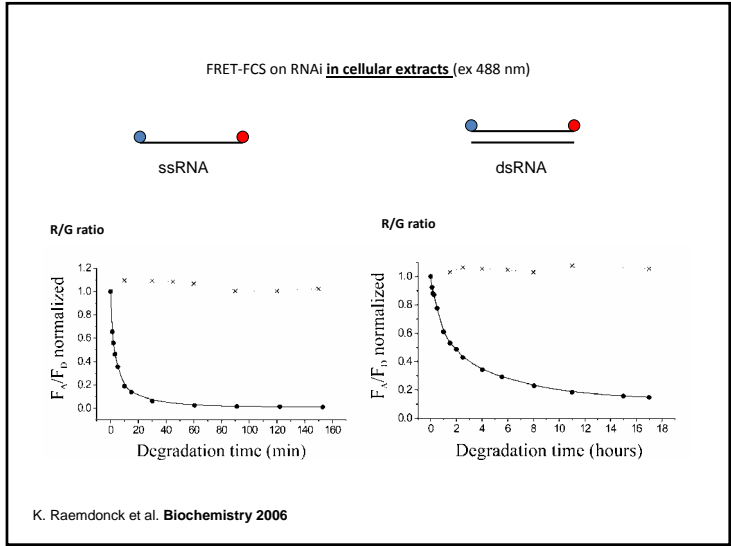
siRNA – cationic liposome complexes in full (90 %) human serum

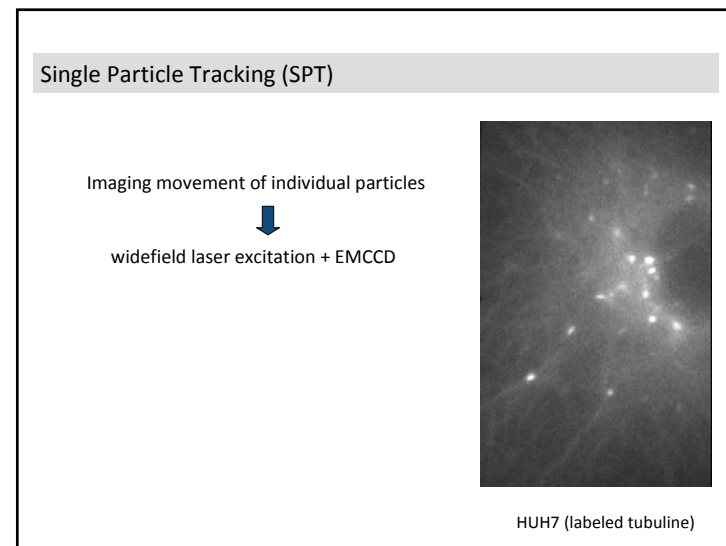
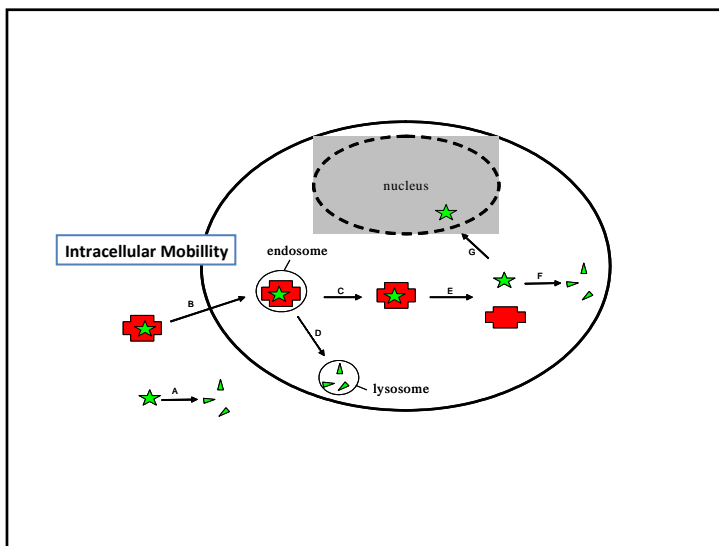
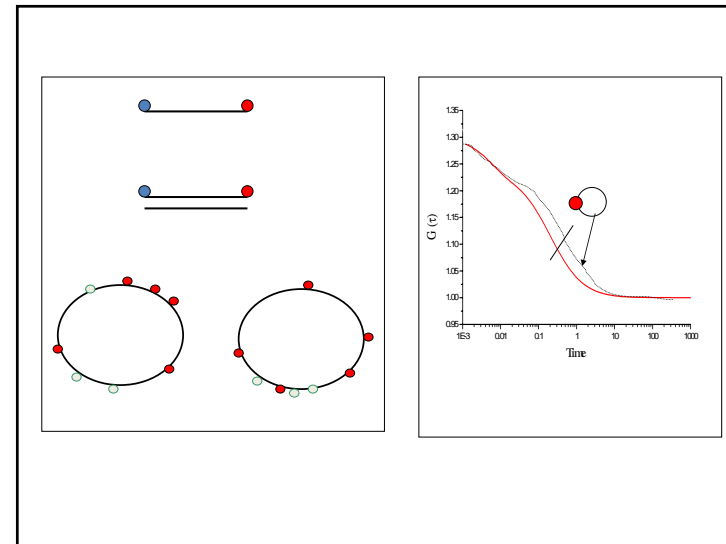
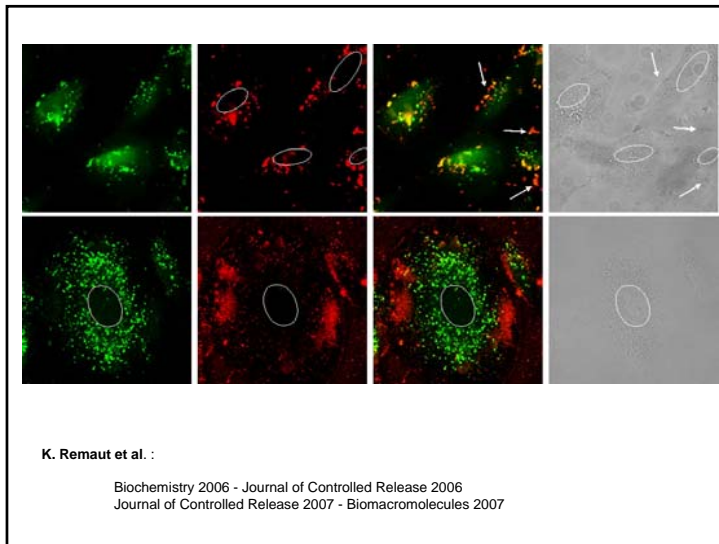


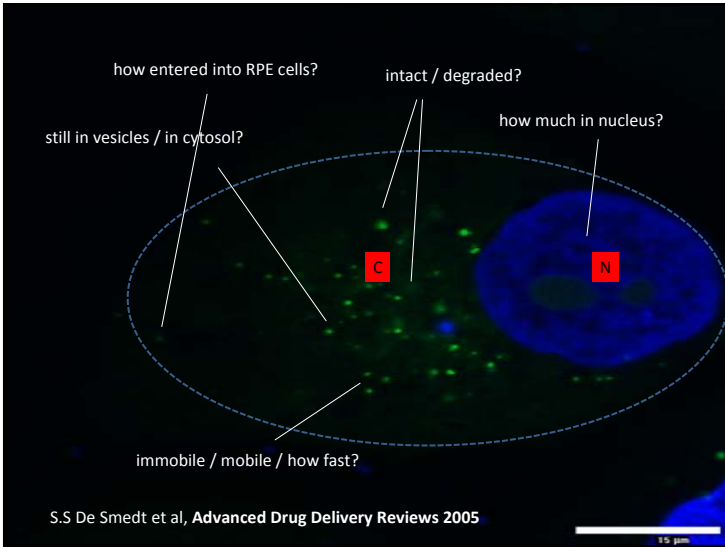
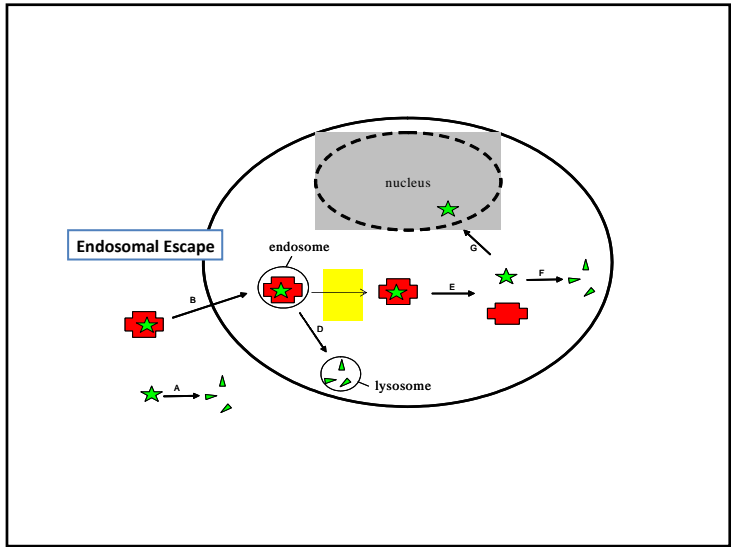
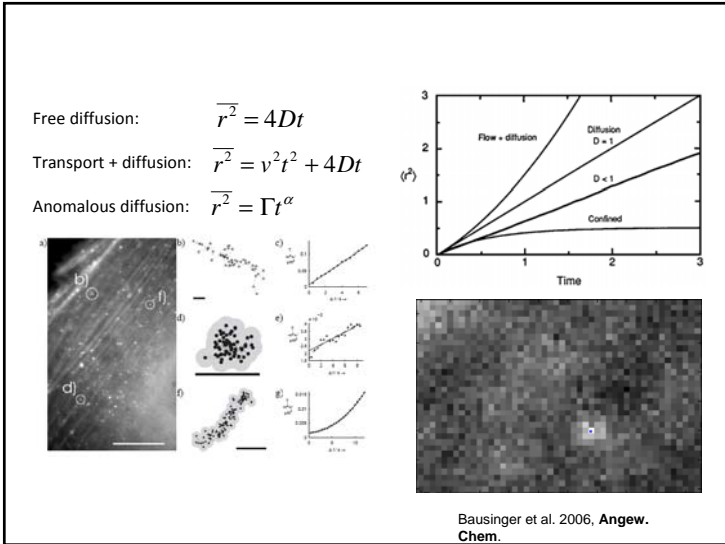
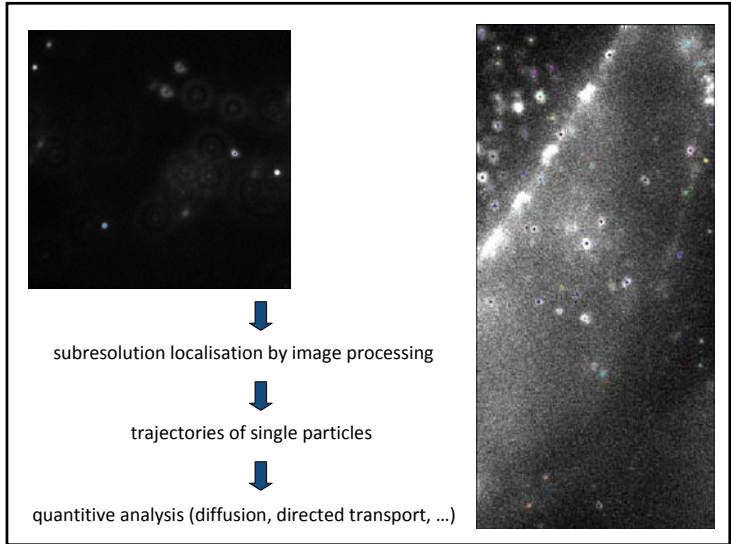
- Low siRNA concentrations (typically ~20 nM)
- Fast (~30 seconds/measurement)
- No sample preparation (in sample measurement)
- Compatible with complex media (including full serum!)
- Accurate quantification (established algorithm)

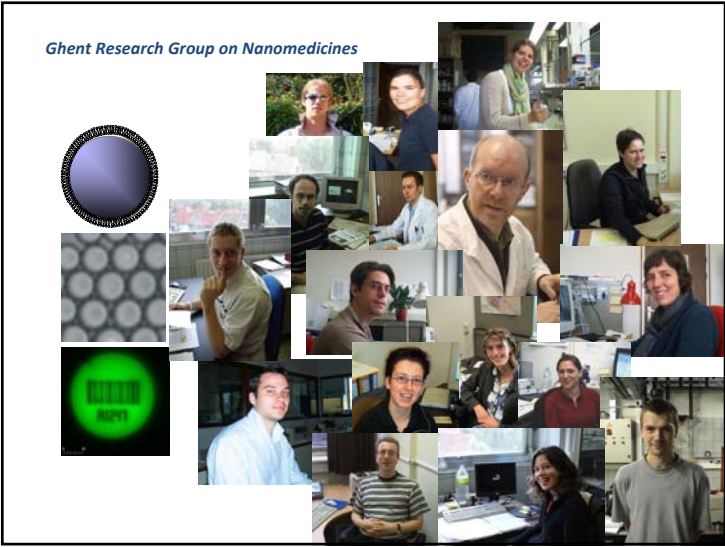
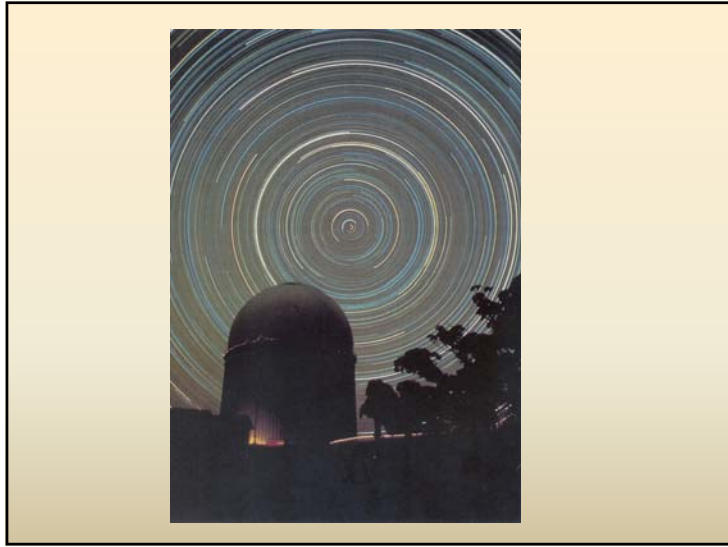
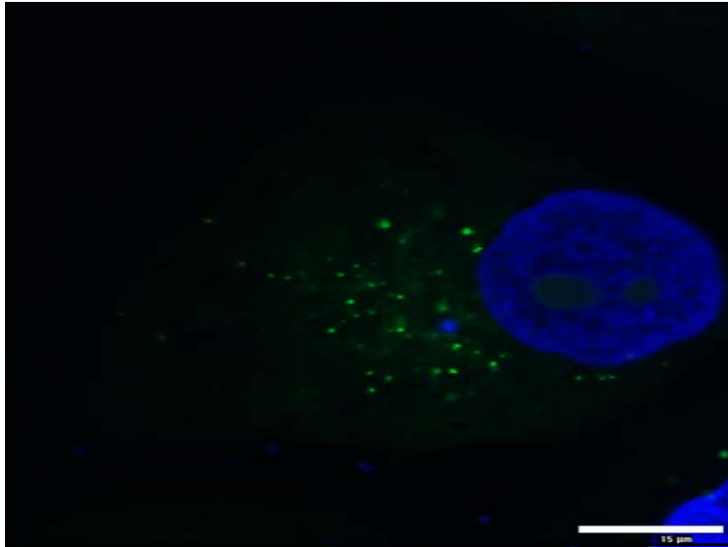




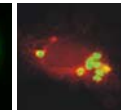
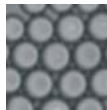








*Ghent Research Group on Nanomedicines*



*Department of Pharmaceutics, Ghent University, Belgium*