

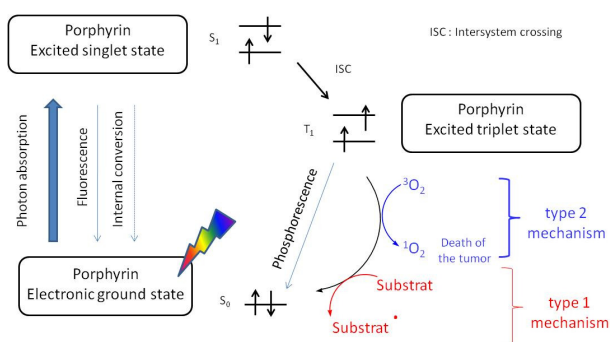
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## Introduction :

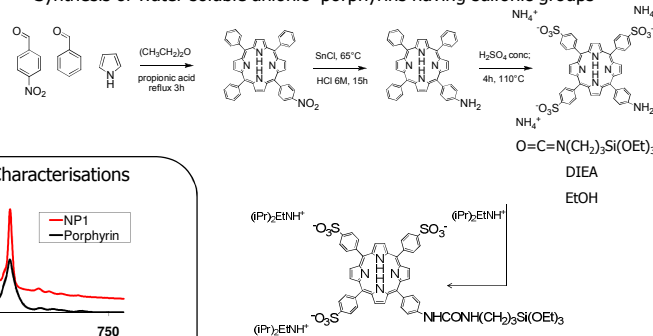
Photodynamic therapy (PDT) has emerged as an alternative to chemo and radiotherapy for the treatment of cancer. Among the variety of nanoparticles (NPs), Mesoporous Silica Nanoparticles (MSN) have very recently become promising vectors for PDT applications. We present here the synthesis of novel MSN combining covalent anchoring of the photosensitizer in the mesoporous silica matrix and targeting of cancer cells with mannose attached on the surface of MSN.

## Photodynamic Therapy

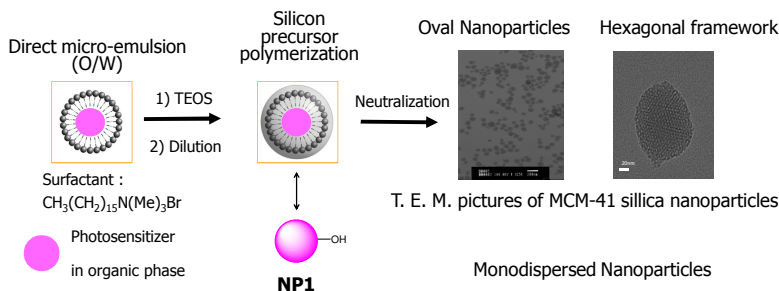


## Photosensitizer

Synthesis of water soluble anionic porphyrins having sulfonic groups

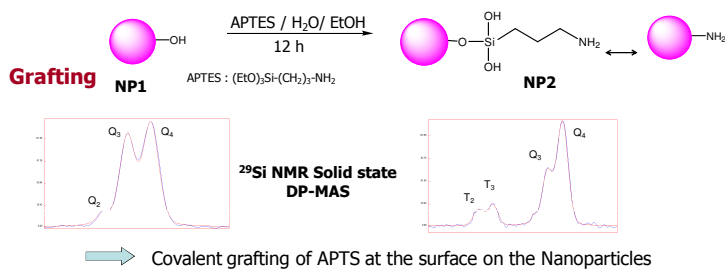


## Nanoparticle synthesis



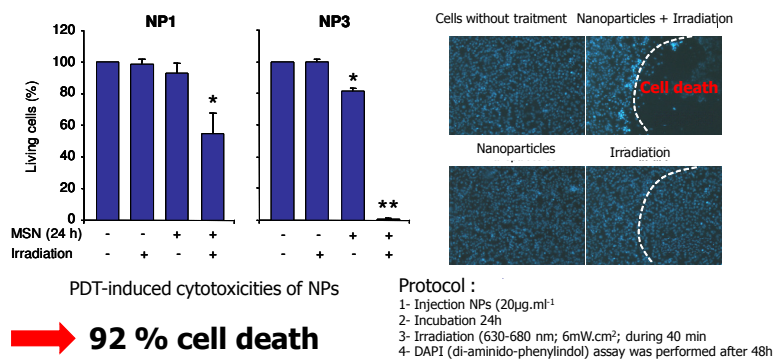
## Functionalisation of MSN with Mannose

As specific bioreceptors are overexpressed at the surface of cancer cells in many tumors, functionalizing the nanoparticles would enhance the uptake of the nanoparticle by the cells.



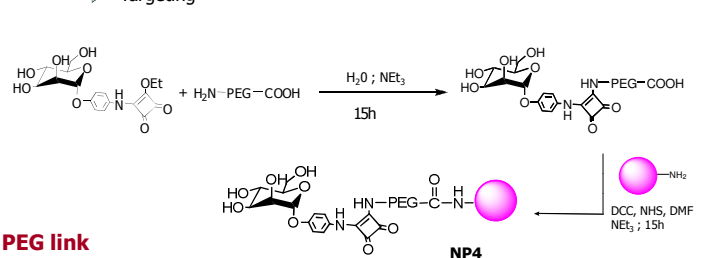
## Cytotoxicity tests

The efficiency of these nanoparticles for monophotonic PDT was studied with human breast cancer cells (MDA-MB-231)



## Squarate link

Targeting



Reference: Chem. Commun., (2009), 1475-1477.