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F29

Design of cancer vaccines based on the use of non-natural glycopeptides with β-amino acids

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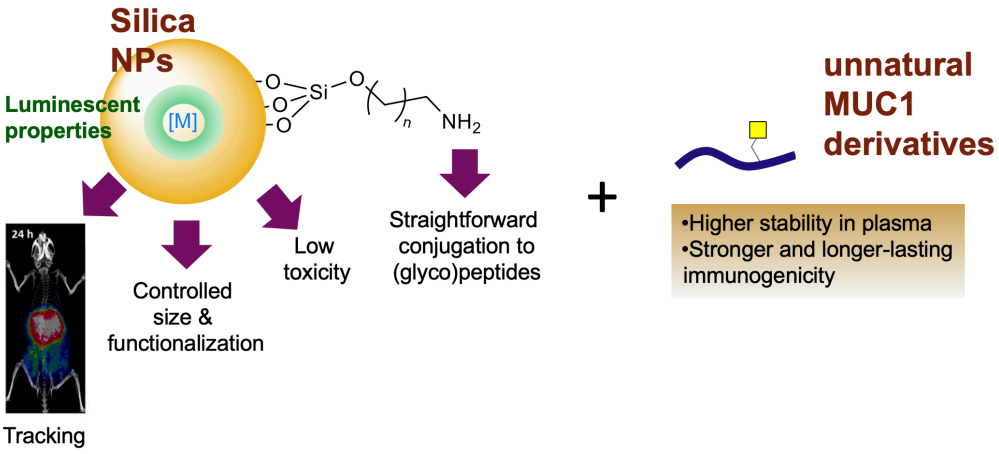
The Tn antigen (GalNAc-α-1-*O*-Thr) is a well-known tumor-associated carbohydrate determinant. The use of glycopeptides that incorporate this structure (such as the mucin 1, MUC1) has become a promising research niche owing to their potential use as cancer vaccines [1]. Nevertheless, the current vaccine candidates have, in general, weak immune response *in vivo* due to their poor stability and inmunogenicity [2]. To tackle this issue, we will modify several residues in the peptide sequence of MUC1 by unnatural amino acids and conjugate them to silica nanoparticles (SiNP), which have luminescent properties and low toxicity.

In a first approximation, several natural amino acids of MUC1 will be replaced by their β-amino acids analogous [3] and the arginine residue by another surrogate bearing a fluorine atom.

In this communication, the synthetic routes, and challenges in obtaining the surrogates will be described. A library of glycopeptides containing β-amino acids and the affinity of the glycopeptides for the SM3 antibody will be presented. These preliminary results will be discussed along with future prospects.



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