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Self adjuvanting immunopeptides : design and synthesis

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Propositions

Accompanying the thesis

Self adjuvanting immunopeptides: Design and synthesis

1. For a successful application of TLR ligands in vaccine development it is needed that the details of the TLR signaling pathways are further uncovered.
Nat Rev Drug Discov. 2010;9(4):293-307
2. Azide substituents are not only valuable bio-orthogonal ligation handles but are also applicable to bio-orthogonal protection.
This thesis, Angew Chemie Int Ed. 2015;54:5628-5631
3. Bio-orthogonal chemical reactions have become important tools in the field of chemical biology.
J Am Chem Soc. 2005;127:2686-2695
4. Since many modern organic chemists do embrace the azide moiety, the so-called “azidophobia” is hardly wide-spread in the scientific community.
Org Lett. 2007;9:3797-3800
5. Despite the development of a multitude of strain promoted cycloadditions the use of copper salts in bio-orthogonal transformations is still “necessary evil”.
Nat.Chem.Biol. 2005;1:13-21
6. A major challenge in the synthesis of Pam₃Cys-based constructs labelled with fluorophores is obtaining sufficient solubility.
This thesis, Chapter 2
7. The discovery that simplified Pam₃Cys analogues with only a single fatty chain retain the ability to activate human TLR2 while losing it for the mouse version of this receptor is unexpected.
J. Med. Chem. 2013; 56:5885-5900, This thesis, chapter 3
8. Care has to be taken in developing synthetic vaccines that contain a TLR-agonist covalently linked to a peptide antigen, as the immunostimulatory properties of these agonists are not always preserved.
This thesis, chapter 4