Synthesis of chemical tools to study the immune system

Graaff, M.J. van de

Propositions

accompanying the thesis

Synthesis of chemical tools to study the immune system

1. The residual activity seemingly always displayed by caged TLR2/6 ligands cannot be reduced through modification of the polar surface area or molecular volume of the cage.
   This thesis, Chapter 2

2. High-resolution structural data of receptor-ligand complexes are imperative for designing conditionally controlled ligands.
   This thesis, Chapter 2 and 3

3. The ability to doubly functionalize a cage prospers its usability in a wide variety of experiments, even those for which a singly functionalized cage would seem to suffice.
   This thesis, Chapter 2, 3, 4 and 5

4. Yields reported for large, insoluble, solid-phase derived molecules are often a reflection of unoptimized purification techniques rather than a reflection of the reaction efficiency.
   This thesis, Chapter 2 and 5

5. The field of photon-mediated uncaging would benefit from a detailed description of the deprotection conditions and photon sources employed.

6. The interdisciplinary nature of applying photo-protecting groups in a biological context implores scrutiny from all disciplines when performing root-cause-analysis of downstream hurdles.

7. Uncaging conditions should, aside from being bio-orthogonal, also be virtually chemo-orthogonal, when the cage cannot be incorporated in the final step of caged ligand synthesis.

8. The activity of some TLR ligands is inversely correlated to their aqueous solubility.

9. The tradition to bind Ph.D. experiments in a single booklet with a forced overarching theme can result in the neglection of important data that happens to fall outside the theme.

10. The drive towards obtaining interesting biological data is often not parallel with the drive towards obtaining interesting synthetic routes.