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Membrane fusion studies with solid state NMR : a new structural perspective on the interplay between biomimetic lipids and De Novo designed synthetic peptides

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Propositions

Belonging to the thesis entitled,
“Membrane Fusion Studies with Solid State NMR”

1. Membrane fusion is a collective phenomenon which is triggered by active molecules and propagated by the lipids.
Chapter 3 of this thesis
2. A high purity of a peptide can be a disadvantage for functional studies.
Chapter 2 of this thesis
3. The complex behavior of a biological system can be easily understood.
This thesis
4. A single lipid model system has severe limitations for functional studies.
Chapter 3 of this thesis
5. The observation of the stalk structure, by Huey W. Huang *et. al.*, in a stable phase, redefined the thinking of the scientists proposing the membrane fusion mechanism.
“Observation of a Membrane Fusion Intermediate Structure,” L. Yang, and H.W. Huang, Science 2002, 297, 1877-1879.
6. The dry steric zipper model of the fibrils involved in Alzheimer's, Parkinson's and mad cow disease represents a major breakthrough in the understanding of the onset of the disease.
“Structural biology: Prying into prions” Christopher M. Dobson, Nature, 2005, 435, 747-749.
7. The heat of chili peppers is actually not a flavor, but a response of pain receptors on the tongue.
Science of Cooking
8. Materials scientists and biochemical scientists should communicate better to facilitate the understanding of how nature works.
9. Open communication not always leads towards better insights.

10. Writing a thesis in Leiden provides a certain level of ambiguity regarding the field of graduation.
11. The level of complaints of Dutch citizens about the transport infrastructure is in strong disagreement with its quality.
12. The expression “by appointment only” has a special meaning in the Netherlands.

Leiden, March 1st 2007

Prashant Agrawal