

## University of Groningen

### Myelin biogenesis

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# Stellingen

Behorende bij het proefschrift

## 'Myelin Biogenesis: Dynamics of MBP, PLP and galactolipids'

van Hande Ozgen (2014)

1. Smith et al show that the 21.5-kDa nuclear MBP isoform enhances oligodendrocyte proliferation when it localizes to the nucleus; however it is not clear whether the nuclear localization of the MBP isoform is a cause or consequence of oligodendrocyte proliferation. (Smith et al., 2013, J. Neurosci. Res.)

2. Even though Kenworthy et al claim that membrane microdomain association is not the dominant factor that governs long-range protein mobility at the cell surface at steady state conditions as determined by fluorescent recovery after photobleaching (FRAP), one should consider applying multiple biophysical techniques to measure mobility of membrane proteins before drawing such conclusions. (Kenworthy et al., JCB, 2004)

3. Gratton et al show that methyl- $\beta$ -cyclodextrin (M $\beta$ CD) preferentially removes cholesterol from the liquid disordered phase in giant unilamellar vesicles; this finding raises questions as to the effect of M $\beta$ CD on eukaryotic cell membranes. (Sanchez et al., J Membr Biol., 2011).

4. Baumgart et al provide evidence that giant plasma membrane vesicles serve as an effective tool to study phase separation in eukaryotic cell membranes; however one should evaluate the results of such studies with great caution as these vesicles are isolated from the cells by chemical vesiculants (Baumgart et al., PNAS, 2006)

5. Even though oligodendrocyte progenitor cell lines cannot undergo the entire differentiation time line, they can be still most useful tools for myelin research, given the possibility to selectively overexpress myelin specific molecules in these cells that is otherwise precluded in primary cells or tissue slices (e.g. this thesis).

6. Seeing is believing; however sometimes indirect evidence might also make one believe of the existence of entities (e.g. lipid rafts), which cannot be resolved by the human eye or even optical microscopy.

Our lives are not our own. From womb to tomb, we are bound to others, past and present. (Cloud Atlas, 2012).

Home is not just a place where you sleep; it is a place where you stand. (Pico Lyer, TED talks, 2013)