



Universiteit
Leiden
The Netherlands

Parkinson's protein α -synuclein : membrane interactions and fibril structure

Kumar, P.

Citation

Kumar, P. (2017, June 27). *Parkinson's protein α -synuclein : membrane interactions and fibril structure*. *Casimir PhD Series*. Retrieved from <https://hdl.handle.net/1887/50076>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/50076>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/50076> holds various files of this Leiden University dissertation

Author: Kumar, Pravin

Title: Parkinson's protein α -synuclein : membrane interactions and fibril structure

Issue Date: 2017-06-27

Stellingen

behorende bij het proefschrift

Parkinson's Protein α -Synuclein: Membrane Interactions and Fibril Structure

1. The conical shape of Cardiolipin and not its charge is the decisive factor for α -Synuclein (α S) binding to the inner mitochondrial membrane. [Chapter 2]
2. Neither a model membrane with a charge density $\rho = 1$ nor one with a low charge density ($\rho \leq 0.3$) is suitable to investigate the effect of phosphorylation on α S-membrane binding. [Chapter 3]
3. The biggest obstacle to study the intrinsic fold of α S in fibrils is the polymorphism of the fibrils. [Chapter 4 and 5]
4. A single technique is not sufficient to obtain a realistic picture of the fibril-fold of α S. [chapter 5]
5. The abundant occurrence in Lewy bodies of α S phosphorylated at position S129 may be a result of phosphorylation of aggregated α S at position S129 rather than phosphorylation of monomeric α S. [Oueslati A.J. Parkinsons Dis. 2016;6:39-51, Paleologou K. et al. J. Neurochem. 2010;30:3184-3198]
6. The approach using lipid nanodiscs to study membrane-protein interactions described by Schuler et al. can be applied to investigate membrane fusion in vitro. [Schuler M.A. et al. Methods Mol. Biol. 2013;974:415-433]
7. The sulfhydryl modification of the styrene-maleic acid copolymer (SMA-SH) described by Lindhoud et al. makes SMA-SH a potential target for spin labelling, which can be

used in the biophysical characterization of membrane proteins by EPR. [Lindhoud S. et al. Biomacromolecules 2016;17:1516-1522]

8. The O-GlcNAcylation (addition of a single monosaccharide N-acetyl-glucosamine) of α S surprisingly inhibits the phosphorylation at position S129 but not at position S87. [Marotta N.P. et al. Nat.Chem. 2015;7:913-920]
9. Ignorance creates an illusion of confidence that knowledge does not.

Pravin Kumar

27-06-2017