

Discovering Parkinson's cell mechanism

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A new doctoral thesis from University of Stavanger suggests possible explanations of how a specific protein associated with Parkinson's disease (DJ-1) might be implicated in the onset of the disease.

Parkinson's disease (PD) is a [neurodegenerative disorder](#) which can only be diagnosed after symptoms have appeared. At that point, 50-60 per cent of the nerve cells are already damaged.

The available drugs only target the motor symptoms and no treatment strategies that halt disease progression are available.

Dysfunctions of the protein DJ-1 are a rare cause of a specific form of Parkinson's disease.

Therefore, understanding the protein's function in the brain might lead to the establishment of the protein as a biomarker for early disease diagnosis and enable new treatment strategies.

Cell mechanism

In a new thesis, doctoral fellow Dominik Piston has analysed the function of DJ-1.

Specifically, he identified which other proteins interact with DJ-1 under stress conditions and a potential functional mechanism for DJ-1 which might explain the functional role this protein fulfils inside the cell.

High stress

This mechanism includes the regulation of the production of a lot of other proteins when the oxidative stress gets too high. When DJ-1 is mutated this mechanism does not work, which might cause the disease.

Understanding the function of this [protein](#) might result in the establishment of DJ-1 as a biomarker for early disease diagnosis. Potentially, it could also result in the development of new treatment strategies for Parkinson's disease patients.

More information: Piston defended his doctoral thesis at University of Stavanger on November 20. His thesis is titled "Interaction partners and oxidation dependent complex formation of the Parkinson's disease associated protein DJ-1".

Provided by University of Stavanger

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