

# Towards a unifying theory of Parkinson's disease: Investigation of the biochemical and genetic role of Rab GTPases

<https://www.neurodegenerationresearch.eu/survey/towards-a-unifying-theory-of-parkinson%20s-disease-investigation-of-the-biochemical-and-genetic-role-of-rab-gtpases-3/>

## Principal Investigators

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## Institution

Multiple

## Contact information of lead PI

### Country

Germany|UK

## Title of project or programme

Towards a unifying theory of Parkinson's disease: Investigation of the biochemical and genetic role of Rab GTPases

## Source of funding information

CoEN

## Total sum awarded (Euro)

527,508

## Start date of award

01/06/2015

## Total duration of award in years

2

## The project/programme is most relevant to:

Parkinson's disease & PD related disorders

## Keywords

### Research Abstract

Mutations in the LRRK2 and PINK1 genes can be inherited in patients with familial forms of Parkinson's. LRRK2 and PINK1 function as a special class of enzymes known as protein

kinases whose job is to label target proteins with a chemical phosphate group (in a process known as phosphorylation). Our laboratories have previously made significant advances in understanding the function of LRRK2 and PINK1 and recently identified that these enzymes target a different class of enzymes known as Rab GTPases. We now wish to better understand how LRRK2 and PINK1 controls Rabs and how mutations in these enzymes impact on Rab functioning in cells. Towards this goal we aim to identify the key Rabs controlled by LRRK2 and PINK1 and discover the molecules that Rabs bind to in order to execute downstream communications in the cell. To complement our analysis we will collaborate with genetics researchers to determine if Rabs themselves are mutated in families with Parkinson's. This project will lead to a fundamental understanding of the cellular pathways controlled by LRRK2 and PINK1 and improve our understanding of the critical pathways affected in Parkinson's.

### **Lay Summary**

**Further information available at:**

#### **Types:**

Investments > €500k

#### **Member States:**

Germany, United Kingdom

#### **Diseases:**

Parkinson's disease & PD-related disorders

#### **Years:**

2016

#### **Database Categories:**

N/A

#### **Database Tags:**

N/A