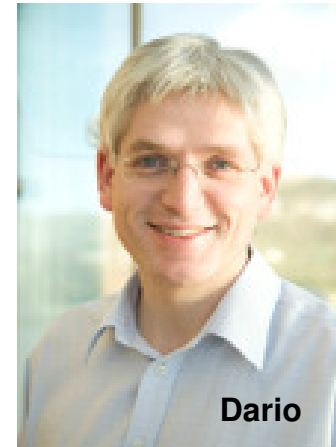


# Understanding the role of the Fbxo7 gene in Parkinson's



## Project information

Lead researcher	Professor Dario Alessi
Location	University of Dundee
Cost	£145,600 over three years
Start date	October 2011
Type of project	Studentship
Project code	H-1101

## Project background

In order to develop better treatments and ultimately a cure for Parkinson's, we need to understand what happens when a nerve cell starts to die. This will allow us to identify ways to block this from happening and slow down or halt the death of the specific nerve cells that occurs in Parkinson's. A small number of people – probably less than 5% – have an inherited form of Parkinson's. But by examining the genes involved, we can get vital clues as to what is going on within a nerve cell when it starts to die. One of these genes is called Fbxo7.

- **Changes (mutations) in the Fbxo7 gene, which is also called PARK 15, have been associated with the development of the early onset form of Parkinson's.** So understanding what Fbxo7 does will provide vital information about why specific nerve die in Parkinson's.
- **Research suggests that Fbxo7 may play a role in marking unwanted proteins to be recycled by the cell.** Protein recycling is crucial for removing damaged proteins or

proteins that are no longer needed because they have carried out their job. Otherwise unwanted proteins build up inside the cell and this can cause nerve cells to die.

### What the researchers are doing

This research will be carried out by a postgraduate student in Professor Alessi's lab. The main aim of the project will be to identify which proteins Fbxo7 interacts with inside the cell. This will give us vital information about what job it does and how it is involved in tasks such as protein recycling. The researchers then want to determine how mutations in the Fbxo7 gene may stop it from working properly and how this may lead to the nerve cell death that causes Parkinson's. The next stage of the project will be to check their findings in an animal model that has been especially created to contain a mutant form of the Fbxo7 gene. This model will also help them to establish whether the animals develop symptoms of Parkinson's because of this mutation. The final part of the project will involve checking their findings in human cells grown in the lab that have been derived from people with Parkinson's that have the Fbxo7 mutation.

### How the research will help people with Parkinson's

At the end of this project we will know more about what Fbxo7 does and how mutations affect the nerve cells that die in Parkinson's. We can then use this vital information to develop drugs that could overcome the effects of these mutations and perhaps the other genes that have been associated with the development of Parkinson's. And these could ultimately slow down or even stop the progression of the condition.

### For more information, please talk to the Research Team

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