

Emergence of new research that could lead to new Alzheimer drug development



Background

Prof David O'Connell, from the School of Biomolecular and Biomedical Science at University College Dublin, reports to have had a breakthrough in his research which focuses on the development of new 'collections of protein molecules', that target toxic protein build up in the brain which over time forms and causes Alzheimer's disease to develop in people.

Prof O'Connell has been working closely with Prof Sara Linse of Lund University, Sweden and Prof Pietro Sormanni of Cambridge University on this research, which at this time is still ongoing.

What work was done

As we already know, Alzheimer's is caused by a build up of toxic proteins sticking together in the brain. At Prof O'Connell's lab in UCD, they have developed new 'collections of protein molecules' which can be used to stop and potentially revert this process.

They are also doing work on what they are calling 'secondary nucleation', looking at a point in which the disease speeds up rapidly. If these new protein molecules can slow down or stop toxic proteins sticking together, this will be critically important. To date, this hasn't been successfully targeted before.

What was found

Findings from this research show that these protein libraries could potentially block proteins in the brain from sticking together, which is a breakthrough in Alzheimer's research. Only toxic proteins in the brain are targeted, therefore this slows down and stops the process of the development of Alzheimer's disease.

These findings were published [here](#) in Proceedings for the National Academy of Sciences at the end of May 2022.

What this means

It is hoped that these emerging research findings could lead to the development of drugs which could help treat the symptoms of Alzheimer's.

When speaking to the Irish Independent recently, Prof O'Connell noted:

“Some think if we can design the right drugs, people could be taking them from their 30s forwards, as it's a very slow-moving disease”

Prof O'Connell also spoke with Ray D'Arcy on his show on RTE recently to share his research update and also his own father's experience of Alzheimer's.

You can listen back [here](#).

It is hoped that these emerging research findings will be used as a basis for drug development and clinical trial testing over the coming years.

What happens next

- Prof O'Connell and his team are continuing their work to develop more effective blockers that could be used in more ways pharmaceutically.

- Prof O Connell has also filed a patent, with help from NovaUCD..
- There is scope that with pharmaceutical interest, this could see a new class of Alzheimer's therapeutics emerging.