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Antibiotic hope for Parkinson's

An antibiotic used to treat leprosy and tuberculosis is showing promise as a therapy for Parkinson's disease.

In laboratory tests, rifampicin was found to prevent the formation of protein fibrils associated with the death of brain cells in Parkinson's.



Could a simple pill ward off Parkinson's?

Researchers from the University of California, Santa Cruz, also found the drug dissolved existing fibrils.

The research, which is still at an early stage, is published in the journal *Chemistry and Biology*.

The researchers studied the effects of rifampicin in test-tube experiments and are currently doing studies with cell cultures and mice to see if the same effects occur in living cells.

“ If it works in people, that would really open up the possibility of stopping the progression of Parkinson's disease when it is first diagnosed. ”

Professor Anthony Fink

Researcher Professor Anthony Fink said: "Clearly more work is needed to determine if this would work therapeutically, but if it does it would probably be most useful as a prophylactic therapy used in the early stages of the disease, before there is general neurological damage.

"The disaggregation of existing fibrils is probably the most interesting and novel finding in this study.

"If it works in people, that would really open up the possibility of stopping the progression of Parkinson's disease when it is first diagnosed."

Parkinson's is a progressive movement disorder resulting from the death of nerve cells in the brain which produce a key chemical called dopamine.

Toxic clumps

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It is thought a critical step in the development of the condition is the collection of a protein, known as alpha-synuclein, into insoluble fibrils.

Certainly, deposits called Lewy bodies, composed mostly of alpha-synuclein fibrils, appear in affected nerve cells.

Some people believe the fibrils themselves are toxic and cause brain cells to die, others that the toxic agents are smaller component parts formed earlier in the process.

Previous research has found that rifampicin may also prevent the formation of the protein deposits associated with Alzheimer's disease.

The Parkinson's Disease Society welcomed the research as "very interesting".

Spokesman Robert Meadowcroft said: "The findings by the researchers studying the effects of rifampicin are currently at a very early stage but do seem quite positive.

"However, it is important to remember that more work in the lab is needed to determine how much real potential there is for rifampicin as a drug in the prevention of Parkinson's.

"If all goes well after further tests have been completed, including using animal models, then we could be looking at the possibility of patient trials in the future."

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