

Protein sheds insight into vCJD

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A protein linked to the immune system could play a key role in helping scientists understand how vCJD spreads throughout the body.

The disease occurs after corrupted proteins - known as prions - accumulate in the spleen, [lymph nodes](#) and tonsils.

The prions then spread to the brain where the disease destroys [nerve cells](#).

Prions

Researchers at The Roslin Institute found that they could thwart the spread of prions by preventing production of a [protein](#) in just one type of immune cell.

Stopping these cells from expressing this protein did not affect the regular function of the immune system.

"If we can find a way of stopping this protein from being expressed by specific [immune cells](#) then we could potentially block the spread of the disease to the brain," said Dr. Neil Mabbott, The Roslin Institute.

Preventing spread of vCJD to the brain

The study could lead to treatments to stop [vCJD](#) spreading to the brain and causing disease.

However, any treatments would be viable only if scientists are able to find a way to diagnose the condition in its early stages.

The research was funded by the Biotechnology and Biological Sciences Research Council (BBSRC).

The Roslin Institute receives strategic funding from the BBSRC.

Protein production

The study looked at production of a protein - called PrPC - in specific immune cells.

These cells - follicular dendritic cells - act like spider's webs, attracting foreign particles, which can then be disposed of by the body's immune system.

The researchers found that when the cells expressed PrPC, prions, were able to replicate on the surface of their surface and spread throughout the body.

However, when only these cells were prevented from producing PrPC, the prions were not able to multiply and were destroyed by other cells.

"We also want to understand how cells are infected with vCJD in the first place, so that we can look at ways of stopping this from happening and find ways to diagnose the disease at its early stages," Dr. Mabbott added.

The study is published in the journal *PLoS Pathogens*.

More information: www.plospathogens.org/home.action

Provided by University of Edinburgh

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