

We may have got it wrong on Alzheimer's, say scientists

By Sarah Knapton SCIENCE EDITOR

THE sticky plaques in the brain which scientists believed cause Alzheimer's disease may in fact be fighting an underlying infection, a study suggests.

Researchers have discovered that clumps of beta-amyloid proteins, which are seen in the brains of people suffering dementia, actually form part of the immune system.

The protein appears to protect against lethal infections, such as salmonella.

Mice genetically engineered to produce the protein survived significantly longer than normal mice after their brains were infected by salmonella.

The discovery could help to explain why drugs that target the protein have never worked to reverse or slow down the progression of Alzheimer's disease.

Dr Robert Moir, from Massachusetts General Hospital, said: "Neurodegeneration in Alzheimer's disease has been thought to be caused by the abnormal behaviour of A-beta molecules, which are known to gather into tough fibril-like structures called amyloid plaques within patients' brains.

"This widely held view has guided therapeutic strategies and drug development for more than 30 years, but our findings suggest that this view is incomplete."

The new study is the first to investigate the anti-microbial action of human beta-amyloid in living animals.

Dr Moir added: "Our findings raise the intriguing possibility that Alzheimer's pathology may arise when the brain perceives itself to be under attack from invading pathogens."

The research is published in the journal *Science Translational Medicine*.