# New research focuses on prion diseases

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New research by Chongsuk Ryou, researcher at the UK Sanders-Brown Center on Aging and professor of microbiology, immunology and molecular genetics in the UK College of Medicine, may shed light on possible treatments for prion diseases.

Prion diseases, which include Creutzfeldt-Jakob disease in humans and bovine spongiform encephalopathy ("mad cow" disease) in cattle, are caused by prions — unconventional pathogens composed of infectious protein particles and resistant to conventional sterilization procedures. Presently there is no known agent or procedure that can halt or reverse damage caused by prion disease.

Ryou and colleagues, however, have demonstrated through recent work that polymers of amino acid lysine (polylysines) are able to block propagation of prions by targeting plasminogen - a substance that stimulates the multiplication of prions. In test tubes and cultured cells, polylysines halted the spread of prions.

Furthermore, in an animal model of prion disease, mice treated with polylysines displayed symptoms later, survived longer and showed lower levels of prions in their brains than did untreated mice.

"Our study suggests that polylysine is a potential anti-prion agent and validates plasminogen as a therapeutic target to combat prion disease," said Ryou.

Ryou's research appears in the latest issue of the journal *Biomaterials*.

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