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A scFv antibody targeting common oligomeric epitope has potential for treating several amyloidoses

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Overproduction or poor clearance of amyloids lead to amyloid aggregation and even amyloidosis development. Different amyloids may interact synergistically to promote their aggregation and accelerate pathology in amyloidoses. Amyloid oligomers assembled from different amyloids share common structures and epitopes, and are considered the most toxic species in the pathologic processes of amyloidoses, which suggests that an agent targeting the common epitope of toxic oligomers could provide benefit to several amyloidoses. Here we firstly showed that an oligomer-specific single-chain variable fragment antibody, W20 simultaneously attenuated motor and cognitive decline in Parkinson's disease and Huntington's disease mouse models, and ameliorated neuropathology by reducing α-synuclein and mutant huntingtin protein aggregate load and preventing synaptic degeneration. Neuroinflammation and oxidative stress *in vivo* were also markedly attenuated. The proposed strategy targeting the common epitopes of amyloid oligomers presents promising potential for treating Parkinson's disease, Huntington's disease, Alzheimer's disease, and other amyloidoses.

Biography

Xiao-lin Yu has completed her PhD from Peking University Health Science Center and postdoctoral studies from National Institutes of Health, USA. She is an associate professor of biotechnological drug engineering in Institute of Process Engineering. She has published more than 10 papers in reputed journals.

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