Identification and Characterization of Novel Anti-tau Antibodies that Inhibit Tau-seed Mediated Pathology in a P301S Tauopathy Mouse Model of Alzheimer’s Disease and Tauopathies

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INTRODUCTION

The current hypothesis for the progression of tau pathology in Alzheimer’s disease (AD) and tauopathies (for example, Progressive Supranuclear Palsy (PSP)) is based on mechanisms involving seeding and propagation of pathological tau, i.e., Alzheimer’s disease, tauopathies, including tau-nanoparticle propagation, a mechanism which provides the capacity for anti-tau therapy. An in vivo and in vitro study was conducted to test the hypothesis that anti-tau antibodies can inhibit tau pathology by preventing tau seeding and propagation. The study was conducted using a tauopathy mouse model that was generated by inducing abnormal tau pathology in the mouse model. The results of this study provide evidence that anti-tau antibodies can selectively inhibit tau pathology and prevent tau seeding and propagation.

SUMMARY

- Anti-tau antibodies were generated using a diverse starting pool of proprietary antibodies targeting pathological tau from human AD brain.
- Anti-tau antibodies were selected based on their biochemical and biophysical properties.
- Anti-tau antibodies were evaluated in vitro for their ability to inhibit tau pathology and prevent tau seeding.
- Anti-tau antibodies were tested in vivo for their efficacy in reducing tau pathology and preventing tau seeding.

CONCLUSION

We have generated a set of potent and specific anti-tau antibodies targeting a diverse set of phospho-tau epitopes that are candidates for the treatment of Alzheimer’s disease and other tauopathies.