

B6-hTTR

Strain Name: B6/JGpt-*Ttr*^{em1Cin(hTTR)}/Gpt

For short: B6-hTTR

Strain Type: KI

Strain Number: T055186

Background: C57BL/6JGpt

Description

Transthyretin (TTR), also known as prealbumin and thyroid-binding prealbumin, is mainly synthesized by the liver and the choroid plexus of the brain and exists in the form of tetrameric protein in the plasma and cerebrospinal fluid. TTR is involved in the transport of thyroxine and retinol-binding protein and maintains the levels of thyroxine and retinol-binding protein. With aging or mutations in the TTR gene, the structure of the TTR protein can become unstable. The misfolding of TTR results in senile systemic amyloidosis, resulting in autosomal dominant hereditary amyloidosis, including familial amyloid polyneuropathy, familial amyloid cardiomyopathy and familial leptomeningeal amyloidosis. To date, more than 100 TTR gene mutations have been reported, of which TTR Val50Met is the most common mutation. At present, the therapy for transthyretin amyloidosis (ATTR) disease is the silencing of messenger RNA to block the production of TTR protein, and stabilize the TTR tetramer structure to slow down the formation of amyloid deposition, thereby delaying the progression of ATTR disease.

GemPharmatech established B6-hTTR model, human TTR can express in the heart, liver and pancreas. This model can be widely used to evaluate the efficacy of gene therapy and other drugs in vivo.

Application

1. Evaluating the efficacy of transthyretin amyloidosis disease drugs.
2. Studying the mechanism of transthyretin amyloidosis disease.

Data support

1. Human TTR expression in B6-hTTR mice

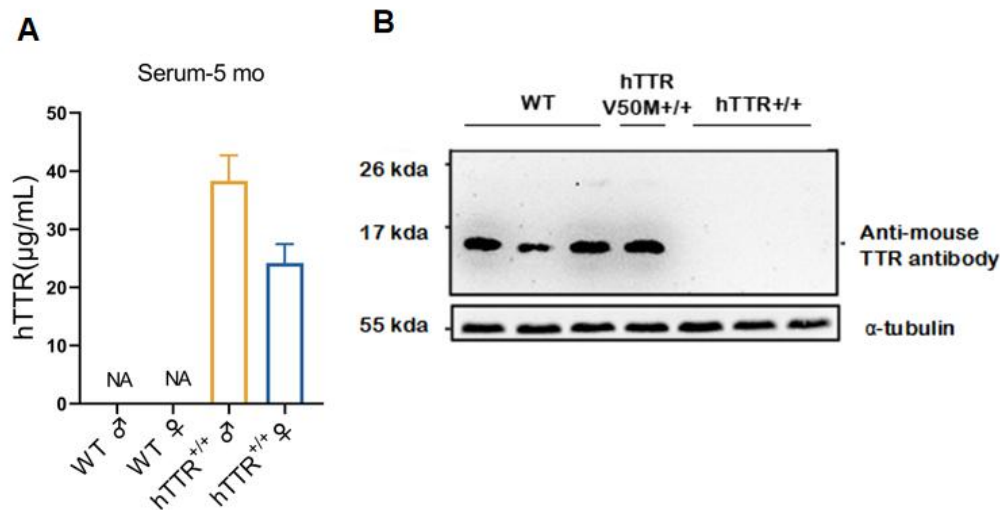


Figure 1 Detection of human TTR protein expression in B6-hTTR mice.

The serum was collected at 5 months of age and human TTR concentration in serum was assayed by ELISA. The expression of mouse TTR in liver was assayed by Western Blot. The results showed that human TTR protein was only detected in the serum of B6-hTTR mice, but not in WT mice. The mouse TTR expressed in WT mice liver, but not in B6-hTTR mice.

References

- 1 Ando, Yukio, et al. "Guideline of transthyretin-related hereditary amyloidosis for clinicians." *Orphanet journal of rare diseases* 8.1 (2013): 1-18.
- 2 Sekijima, Yoshiki. "Transthyretin (ATTR) amyloidosis: clinical spectrum, molecular pathogenesis and disease-modifying treatments." *Journal of Neurology, Neurosurgery & Psychiatry* 86.9 (2015): 1036-1043.
- 3 Ando, Yukio, et al. "Guideline of transthyretin-related hereditary amyloidosis for clinicians." *Orphanet journal of rare diseases* 8.1 (2013): 1-18.