Transthyretin (TTR), a 55 kDa tetramer also known as prealbumin, is a transporter of the retinol-binding protein-vitamin A complex and thyroxine that circulates in the blood; TTR can undergo rate-limiting dissociation and monomer misfolding, leading to aggregation, including the formation of amyloid fibrils.

Mutations in the TTR gene generally destabilize the tetramer and accelerate tetramer dissociation, promoting amyloidogenesis.

TTR-related amyloidosis is a rare, fatal, protein-misfolding disorder characterized by the formation and tissue deposition of TTR aggregates, including amyloid fibrils; TTR amyloidosis is associated with a broad spectrum of clinical symptoms, encompassing progressive neuropathy and cardiomyopathy.

Tafamidis meglumine, the first pharmacotherapy approved to slow the progression of peripheral neurologic impairment in TTR familial amyloid polyneuropathy, is a rationally-designed, non-NSAID benzoxazole derivative that binds with high affinity and selectivity to TTR and kinetically stabilizes the tetramer, slowing tetramer dissociation and subsequent monomer formation, misfolding, and amyloidogenesis.

Tafamidis is generally well-tolerated for the treatment of early-stage TTR amyloidosis, and it effectively stabilizes TTR across a number of amyloidogenic TTR genotypes, including wild-type TTR, and may thereby slow disease progression.

In patients with early-stage Val30Met amyloid polyneuropathy, treatment with tafamidis results in reduced neurological deterioration, preserved nutritional status, and quality of life.