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Animal models for evaluation of albumin-based therapeutics

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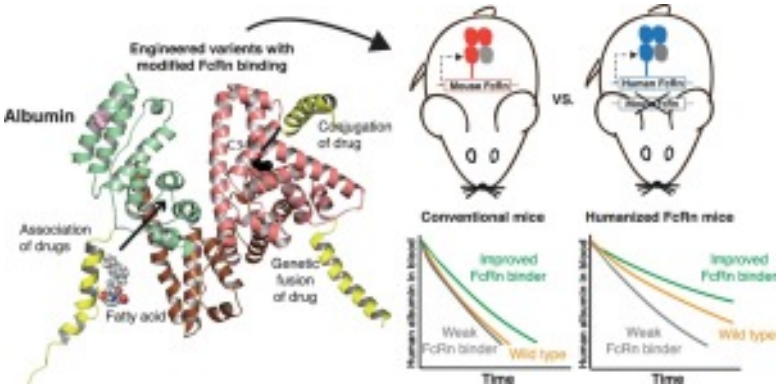
Highlights

- â€¢ FcRn binds albumin and extends its serum half-life to 3 weeks in humans.
- â€¢ Albumin is utilized to extend the serum half-life of short-lived therapeutics.
- â€¢ Species-specific binding of albumin to FcRn challenges preclinical development.
- â€¢ Humanized FcRn transgenic mice may serve as improved models.

Albumin has a long serum half-life due to its unique ability to bind the cellular neonatal Fc

Albumin has a long serum half-life due to its unique ability to bind the cellular neonatal Fc receptor (FcRn), which provides protection from intracellular degradation. The interaction can be capitalized to improve the efficacy of drugs by extending their serum persistence. However, species-specific binding of albumin to FcRn challenges preclinical development. The goal of this brief review is to provide insights into how FcRn and cross-species binding differences affect the pharmacokinetics of human serum albumin (HSA) in different animal models, and gives an overview of genetically modified mice that may serve as improved models for testing of albumin-based drugs.

Graphical abstract



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