How immune response differs for natural AAV infection compared to AAV vector for gene transfer?

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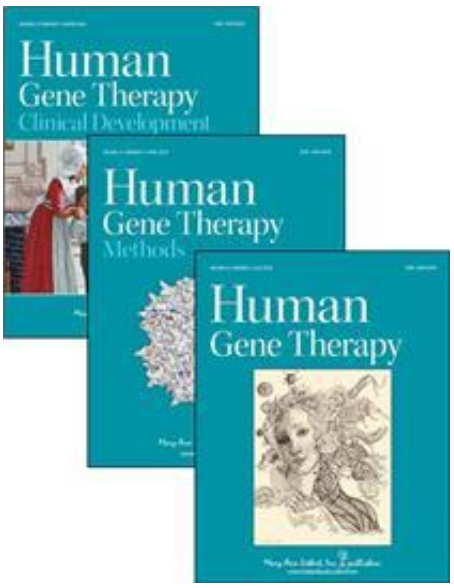

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A new, long-term study examined the antibody response to natural infection with adeno-associated virus (AAV) in chimpanzees for the purpose of characterizing the broad-based immune responses that could reduce the effectiveness of AAV vector-based gene delivery strategies. The study, which demonstrated the production of antibodies able to cross-neutralize multiple AAV serotypes, is published in *Human Gene Therapy* Clinical Development.

Coauthors Roberto Calcedo and James M. Wilson, University of Pennsylvania Perelman School of Medicine, Philadelphia, monitored a group of chimpanzees—chosen because of their genetic similarity to humans—for 10 years and measured the levels of circulating antibodies in response to infection with naturally occurring AAV. The authors discuss the difference observed in the immune response to natural AAV infection compared to administration of AAV vectors used to deliver gene therapy in the article entitled "AAV Natural Infection Induces Broad Cross-Neutralizing Antibody Responses to Multiple AAV Serotypes in Chimpanzees".

"The impact of anti-vector antibodies remains a technical hurdle in systemic applications of AAV gene therapy," says *Human Gene Therapy* Clinical Development Editor James M. Wilson, MD, PhD, Director of the Gene Therapy Program, Department of Pathology and Laboratory Medicine, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA. "The study of chimps provided us a window into the type of antibody response that occurs following a natural AAV infection."

More information: Roberto Calcedo et al, AAV Natural Infection Induces Broad Cross-Neutralizing Antibody Responses to Multiple AAV Serotypes in Chimpanzees, *Human Gene Therapy Clinical Development* (2016). DOI: 10.1089/humc.2016.048

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