

Humanized AAV Antibodies- Advanced Standard for Serological Assays

Introduction

Adeno-associated virus (AAV) is a widely used DNA delivery vector in gene-engineered treatment applications. Multiple AAV serotypes have been identified and studied so far. Different AAV serotypes have different tissue and organ tropisms. Among them, AAV2, AAV8, and AAV9 are the most popular serotypes being utilized. The efficiency and safety of gene transfer using AAV vectors may be influenced by the presence of antibodies against AAV. Many individuals in the general population have naturally developed such antibodies due to prior infections. Consequently, assessing the existence of pre-existing AAV antibodies in patient sera becomes a crucial step in the selection process for participants in AAV gene therapy clinical trials.

Utilizing appropriate positive controls is essential in establishing serological AAV assays that are both reliable and reproducible. Creative Diagnostics has engineered recombinant human chimeric AAV antibodies using the neutralizing anti-AAV mouse monoclonal antibodies. These antibodies maintain the identical variable region found in the mouse monoclonal AAV antibodies but feature a human Fc region. This design enables detection using an anti-human secondary antibody, ensuring compatibility with human serum antibodies and facilitating accurate comparisons.

Creative Diagnostics' humanized antibodies exclusively target intact AAV particles. These antibodies specifically identify conformational epitopes within the viral capsid proteins, which are exclusive to fully assembled capsids. These epitopes comprise distant amino acids, either within the same protein or different proteins in close proximity, and their composition may vary among different serotypes. It's noteworthy that certain antibodies may exhibit cross-reactivity with multiple serotypes.

Comparison of specificity of humanized and mouse AAV antibodies

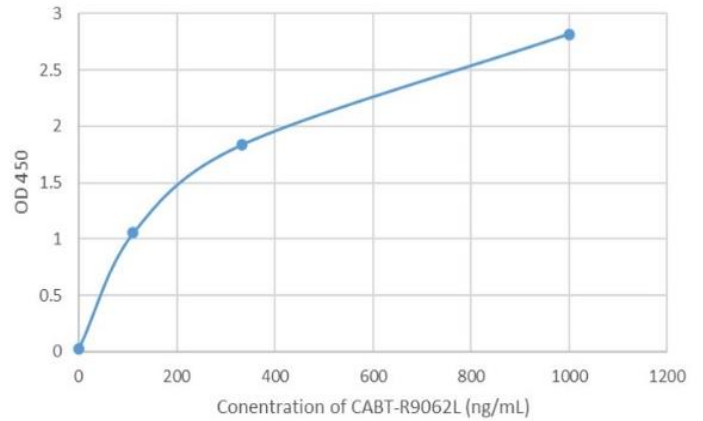
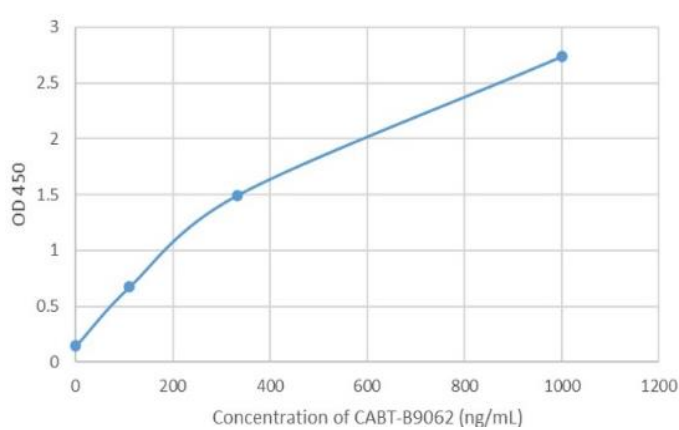
ELISA was employed to assess and compare the titers of humanized AAV antibodies against mouse AAV antibodies. Based on the ELISA results, with the exception of AAV6, the titers of humanized antibodies closely parallel those derived from mouse for other serotypes.

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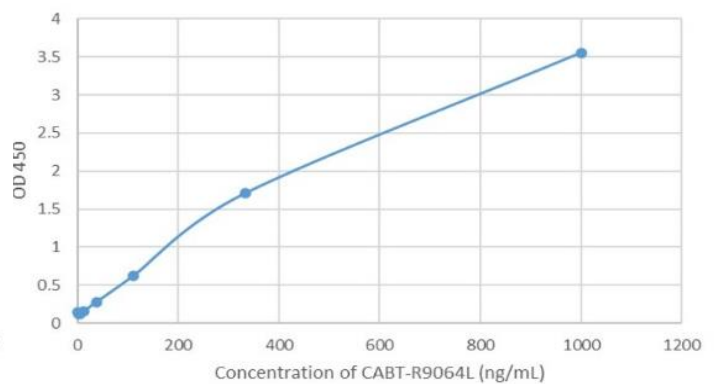
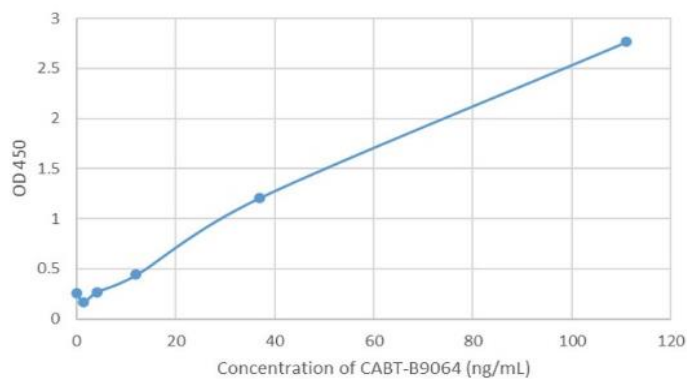
Highlights

- All the Humanized and mouse monoclonal antibodies show a high neutralizing activity.
- Humanized and mouse AAV antibodies share the same well-known characteristics like cross-reactivity and neutralization activity.
- Humanized antibodies are closer to human derived samples as they have a human Fc region, making them the ideal positive control for reproducible and comparable serological assays.
- Industrial batch sizes
- Constant availability

AAV2 antibodies

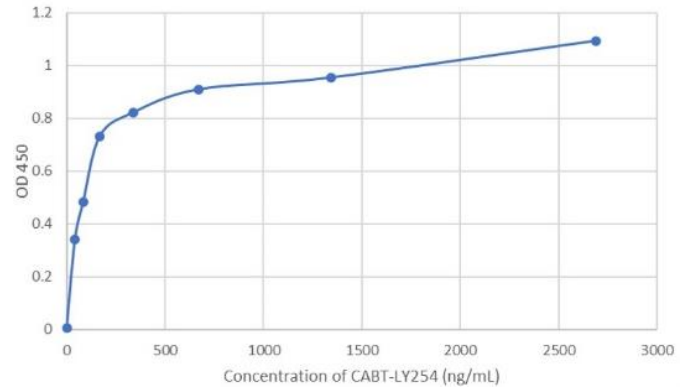
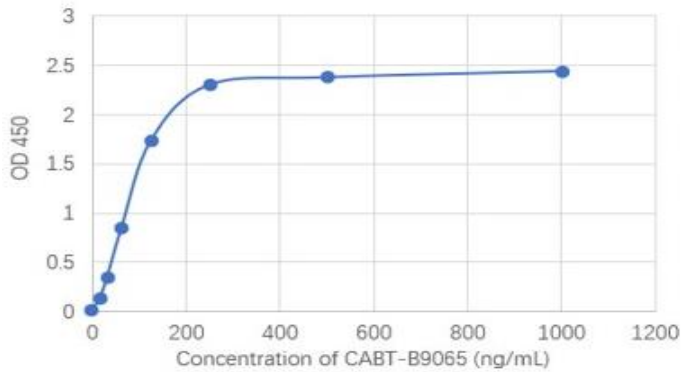


AAV6 antibodies

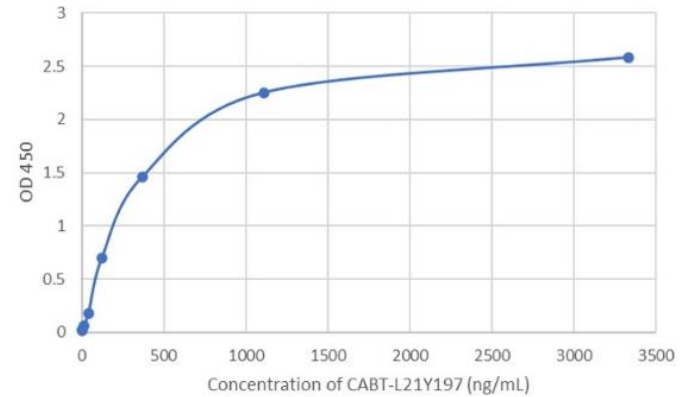
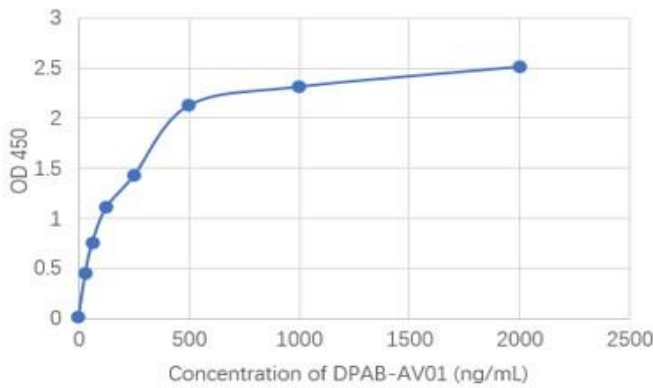


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AAV8 antibodies



AAV9 antibodies



Product List

Target	Cat.	Product Name
AAV2	CABT-B9062	Mouse Anti-AAV2 (intact particle) Mab, clone B31
AAV2	CABT-R9062L	Human Anti-AAV2 (intact particle) Mab, clone B31
AAV6	CABT-B9064	Mouse Anti-AAV6 (intact particle) Mab, clone BEL7
AAV6	CABT-R9064L	Human Anti-AAV6 (intact particle) Mab, clone BEL7
AAV8	CABT-B9065	Mouse Anti-AAV8 (intact particle) Mab, clone BEL9
AAV8	CABT-LY254	Human Anti-AAV8 (intact particle) Mab, clone BEL9
AAV9	DPAB-AV01	Mouse Anti-AAV9 (intact particles) Mab, clone BEL0
AAV9	CABT-L21Y197	Human Anti-AAV9 (intact particle) Mab, clone BEL0

CREATIVE DIAGNOSTICS

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