ALTASCIENCES

SCREENING FOR PRE-EXISTING ANTIBODIES TO ADENOVIRUS FOR NONCLINICAL GENE THERAPY PROGRAMS

Pre-existing immunity to AAVs poses a significant challenge in gene therapy nonclinical development given that nonhuman primates (NHPs), previously exposed to AAVs, may harbor neutralizing antibodies that can impede the effectiveness of AAV-based therapy.

AAV serotype 8 has the highest seropositivity rate, with 64% of 1,219 screened NHPs positive.

Screening animals for anti-AAV antibodies before administering gene therapy is crucial because these antibodies can interfere with gene therapy exposure. Pre-screening helps identify animals with high antibody levels that may disqualify them from toxicology studies.

Below are two assays available for pre-screening for anti-AAV8 antibodies.

AAV PRE-SCREENING FOR GLP AND NON-GLP STUDIES

TOTAL ANTIBODY (TAb) SCREENING		NEUTRALIZING ANTIBODY (NAb) SCREENING
Ligand Binding Assay (ECLIA)	**Assay Format**	Cell-Based Assay
A ligand binding assay that detects total pre-existing Abs in NHP that are specific to AAV8 serotype.	**Definition**	A cell-based assay that detects the presence of antibodies able to inhibit the infection of cells with AAV8 serotype.
1 ng/mL	**Sensitivity**	18 ng/mL
Neat (at MRD), 1/10 and 1/20	**Dilution of serum**	Neat (at MRD), 1/10 and 1/20
The TAb assay will detect all antibodies that bind to AAV8.	**Difference between both**	It is the main mechanism to prevent viral entry of host cells with AAV8.

BENEFITS

Comprehensive Screening

Expedite timelines and ensure appropriate NHP selection for toxicology studies with in-house anti-AAV antibody pre-screening. Altasciences enhances this advantage by providing access to hundreds of pre-screened NHPs, offering a one-stop solution.

Two Methods Available

Gain precise insights with highly sensitive total antibody (TAb) screening for detection and targeted neutralizing antibody (NAb) screening to evaluate the ability of antibodies to block AAV8 viral entry.

Versatile Application

Achieve flexibility in research with qualified methods suitable for both GLP and non-GLP studies. These assays can be adapted for various serotypes and species, and tailored for in-study immunogenicity assessments.