

Introduction

To study the prevalence of anti-AAV types 2 and 9 Nab titers and health disparities in the Atlanta DMD cohort.

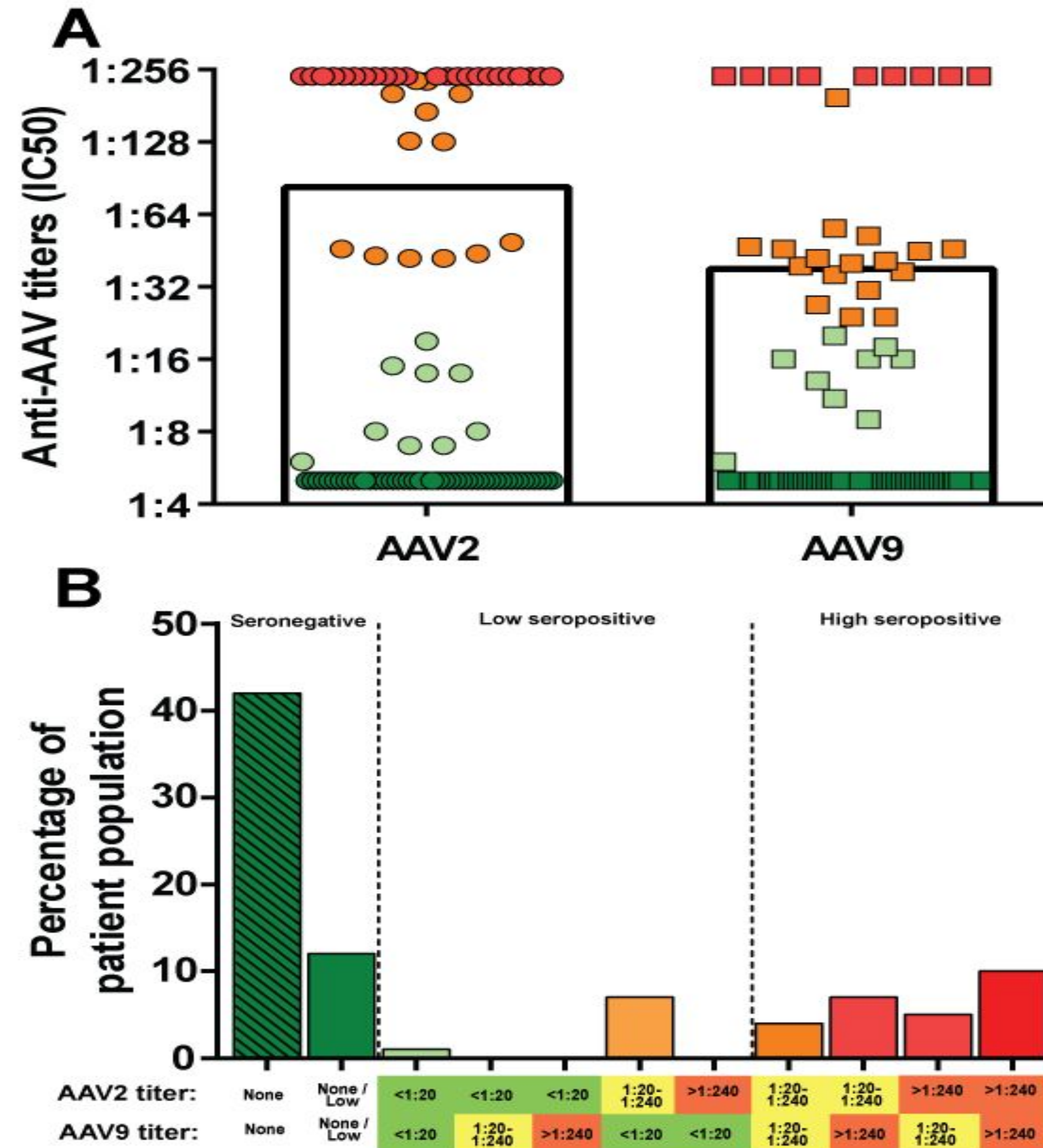
Methods

- Prospective study of 89 consecutive DMD boys (median age 10.5 years, range 2-20 years) from 2016 to 2020.
- Participants ethnic background was determined using electronic medical records and AAV 2/9 neutralization assays were performed.
- Patient serum was serially diluted in media, combined with CMV-luciferase reporter construct containing AAV 2/9 viral particles, and incubated
- To calculate AAV 2/9 infection, plates were washed, luciferase substrate added, and read on luminometer. AAV 2/9 neutralizing titers reported as the estimated dilution at which 50% of AAV 2/9 infection has been inhibited (IC₅₀).

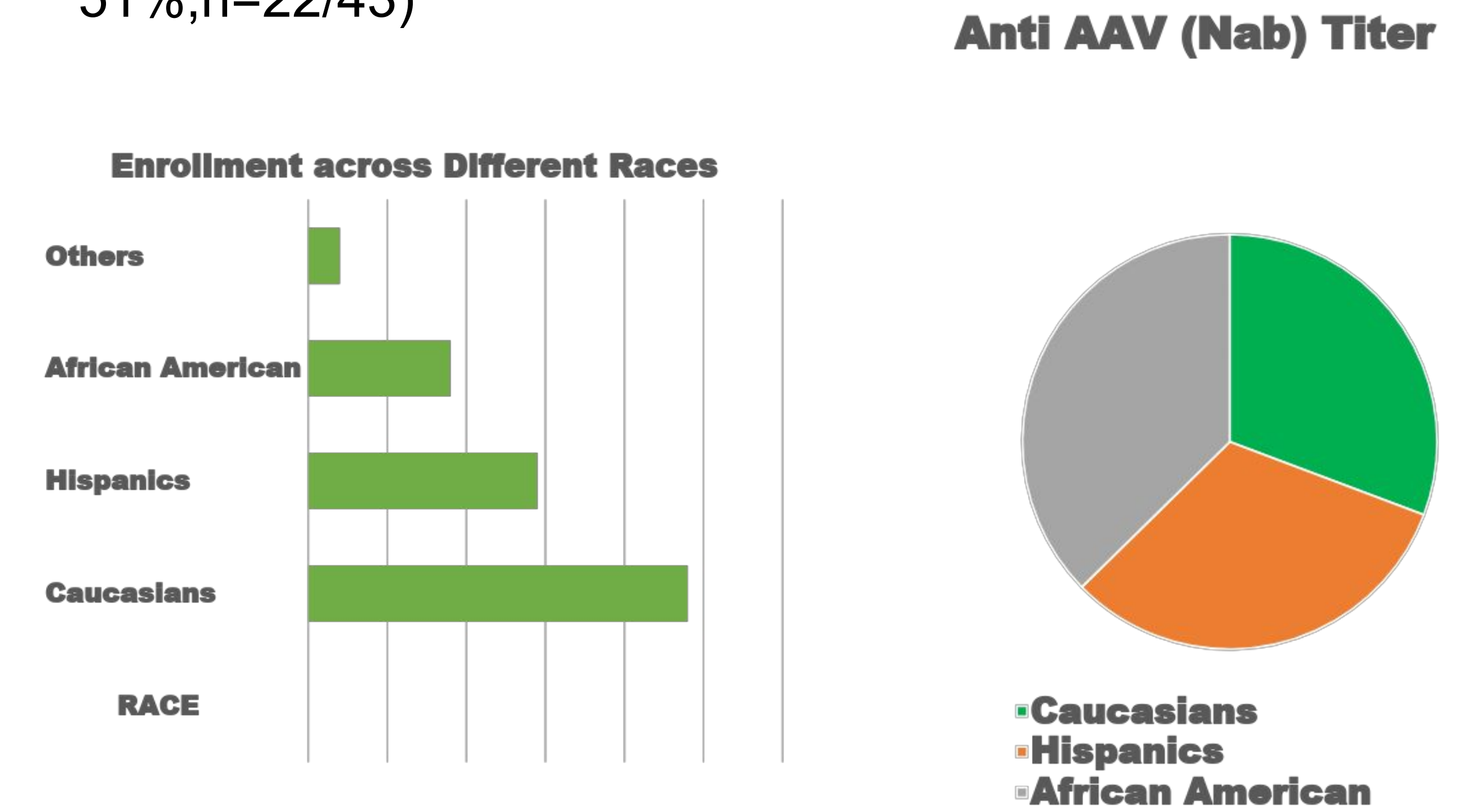
Results

Disproportionately higher Caucasian's patients 48% (n=43) were enrolled compared to Hispanics 29% (n=26), African Americans 18% (n=16) and Others 4% (n=4).

Low moderate and high positive Nab titers defined as <1:20, 1:20-1:240 and >1:240 dilution and detected in 53% (n=47) for AAV2, 39% (n=35) for AAV9 and in 38% (n=34) for both AAV 2&9.(Figure 1 A, B).



Disproportionately higher African Americans participants tested positive for Anti-AAV Nab (62%, n=10/16) followed by Hispanics (53%, n=14/26) and Caucasians 51%, n=22/43)



Discussion & Conclusions

- Study confirms **significant (40-50%) proportion of DMD boys with positive for AAV 2 and 9Nab.**
- Furthermore, study highlights **race differences with lower study enrollment and higher positive Nab in African American and Hispanics.** Large scale studies on antibody prevalence and addressing health disparities needed.

References:

Leborgne C, Latournerie V, Boutin S, Desgue D, Quere A, Pinot E, et al. Prevalence and long-term monitoring of humoral immunity against adeno-associated virus in Duchenne Muscular Dystrophy patients. Cell Immunol. 2019 Aug;342:103780. doi: 10.1016/j.cellimm.2018.03.004. Epub 2018 Mar 16.
 Khatri A, Shelke R, Guan S, Somnathan S. Higher seroprevalence of anti-AAV Nab among racial minorities in United States. Hum Gen Ther. 2021; online ahead of print