**Figure 3. NanoLuc at MOI 100 provides high sensitivity across AAV capsids.**

**(A)** Schematic diagrams of plasmids encoding NanoLuc (NLuc) and Firefly luciferase (FLuc) reporters.

**(B)** Dynamic range of AAV9-FLuc versus AAV9-NLuc transduction assays over a range of multiplicities of infection (MOIs). NLuc exhibits approximately three orders of magnitude higher signal intensity than FLuc at equivalent MOIs. Error bars represent standard deviation across replicates.

**(C)** Broad utility of NLuc reporter assays demonstrated across AAV1, AAV5, and AAV9 capsids. NLuc consistently maintains robust signal output across varying MOIs, with serotype-specific patterns of signal increase on the logarithmic scale. Error bars represent standard deviation across replicates.

**(D)** Neutralization curves from the coreTIA with human serum for AAV1, AAV5, and AAV9 capsids. Different colors represent MOI 10 (teal), MOI 100 (orange), and MOI 1000 (purple). Horizontal dashed line denotes 50% transduction efficiency level. Dashed vertical arrows pointing to horizontal bars indicate the ND50 estimates (serum dilution at 50% inhibition) using Hill-MCMC. Vertical error bars on the data points represent standard deviation of transduction efficiency measurements across replicates. Two technical replicates were used per dilution. The legend in the left sub-panel applies to all three sub-panels.

**(E)** Summary of ND50s across AAV capsids and MOIs. Statistical significance was determined using Bayesian Practical Equivalence Test (Methods, ns = not significant, \* = significant difference exceeding practical threshold). Error bars represent 95% credible intervals from Hill-MCMC model evaluations.

**(D, E)** The y-axis label ("Serum Dilution") of the left panel applies to middle and right panels.

Panel A was created with BioRender.com.