

AAV Genome Titer Assay Comparison



Viral genome titer is a key CQA in AAV characterization. The qPCR and ddPCR are generally used for titer determination. While there are clear strengths of these methods, there are several limitations.

Here we compare and contrast these methods with the results from GeneSwift assay, a newly developed assay based on hybridization, immunochemistry and BLI (Biolayer Interferometry) detection and analysis.

Gator® GeneSwift Assay



Lysis +
Hybridization



Load
samples into
prefilled
plate



BLI
Detection



**35 min to
results**

dPCR



Pipette reaction
mixture to dPCR
plate; seal plate



Load the
plates



Priming, thermal
cycling, readout



Data
analysis



**120 min to
results**

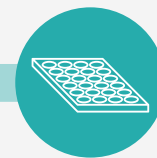
ddPCR



Load
cartridges



Droplets
generation



Transfer
droplet to 96
well plate



Plate
sealing
and PCR



Readout



**310 min
to results**

AAV Viral genome titer assay comparison

Performance Attribute	Gator	ddPCR/dPCR	qPCR
Quantitation dynamic range	Approx 5E+9 - 3E+12 vg/mL	1-2 logs	5 logs (2E+2 - 2E+7)
Precision, %CV	5-7%	3-10%	5-30%
Number of assay steps	2	2 to 6	3
Total assay time	35 min	96-310 min	96-120 min
Throughput (samples/run)	4/8/16/32	96	96
Simple instrumentation, no microfluidics	Yes	No	No
Sample volume, uL	20 µL	20 µL	12 µL
Crude matrix compatible	✓	✗	✗
Adverse impact of PCR inhibitors	No	Yes	Yes
Unaffected by non-encapsulated DNA	✓	✗	✗