

Fluidic & Plate Sealing Technology for 96-Well Plates

Alluvia® System

The consumable and instrument system is an integration of fluidics and plate sealing technology. It continuously contains dilution and aliquoting of pre-amplified PCR product into secondary well plates or tube strips ready for subsequent qPCR.

The Alluvia System:

- ❑ **Eliminates the risk of carry-over contamination** in qPCR applications that utilize pre-amplification;
- ❑ **Integrates with existing qPCR workflows** and commercial pre-amplification kits, or new LDT's;
- ❑ **Provides flexible consumable design** enabling from 1 sample to 8, 24, 48, or 96 wells;
- ❑ **Offers lower cost** Instrumentation \$15k - \$20k, and Consumables \$10 - \$20.








Integrate Alluvia with existing qPCR workflows to achieve the advantages of using multiplex 2-step PCR while eliminating the related DNA carryover contamination risk:

- ❑ **Advantages of Multiplex 2-Step PCR:**
 - ❑ **Improves sensitivity**, particularly when using precious samples, by multiplexing during the first step (less total sample needed);
 - ❑ **Improves specificity** when using a second pair of nested primers.
- ❑ **Alluvia Provides Consumable-Based PCR Product Containment:**
 - ❑ Biochemical methods are often not sufficient (i.e. uracil/UNG/UDG is useful for only one round of 2-step PCR, and ineffective for methylation detection when utilizing bisulfite treatment);
 - ❑ Facility and workflow-based containment strategies are cumbersome, costly, and are more user dependent and failure prone.
- ❑ **Applications Demonstrated:**
 - ❑ qPCR-based Gene Expression
 - ❑ DNA Methylation Analysis
 - ❑ Pathogen DNA Detection



Alluvia 2-Step PCR Integration

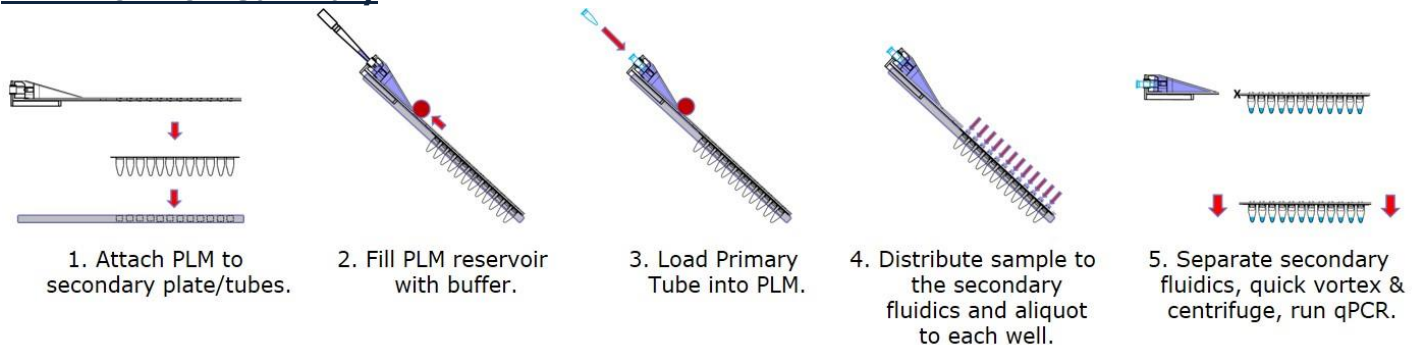
Pre-Amplified Sample Input	Second Step PCR Formats	Auto Sample Transfer, Dilution & Aliquoting	Detection / Analysis	Target Applications
0.1ml or 0.2ml PCR tubes 	Alluvia Plate Loading Manifolds™ 1x8 PLM 1x96 PLM  2x48 PLM 4x24 PLM  <i>(*May be prefilled with PCR reagents and primers)</i>	Alluvia Instrument 	Existing qPCR Instrumentation 	qPCR Based Arrays that Utilize Pre-amplification qPCR Based Assays for methylation detection that utilize bisulfite conversion Pathogen Detection Panels

Alluvia Consumables

Plate Loading Manifold™ (PLM's)

The Plate Loading Manifolds (PLM's) are an integration of fluidics and plate sealing technology. Combined with the Alluvia instrument, the system eliminates the risk of PCR carry-over contamination. The system is particularly useful for qPCR applications that utilize pre-amplification.

PLM Workflow Summary:



Product Specifications

Alluvia Instrument

- User Interface: Integrated touchscreen
- Configurability: 8 tube strip and 96 well plates
- Total Process Time: ~5 minutes
- Dimensions: 25x35x35cm (WxDxH)
- Power requirements: 110V/220V, 50/60 Hz
- Safety and emission certification: CE, ETL

Plate Loading Modules (PLM)

- Primary PCR samples Inputs: 1, 2 or 4
- Secondary PCR wells per sample: 8, 24, 48, and 96
- Primary PCR dilution: 20x-150x
- Final secondary PCR volumes: 8µl to 30µl

Two-Step PCR with Alluvia!

Eliminate Carry-over Contamination Risk from Pre-amplified Samples