



# RainDrop

A billion reactions, digital answers



## The Final Frontier of PCR is Here

Capable of generating more than a billion reactions in a single day, the RainDrop Digital PCR System surpasses all existing technologies and establishes a new performance standard in sensitivity, quantification, and multiplexing. Based on RainDance's proven digital droplet platform, the RainDrop System delivers absolute quantification of target molecules. The RainDrop Digital PCR System fundamentally changes the performance of molecular assays by enabling digital answers across a number of important research applications including low-frequency tumor allele detection, absolute quantification of expression profiles or DNA copy numbers, SNP measurement, and viral quantification.



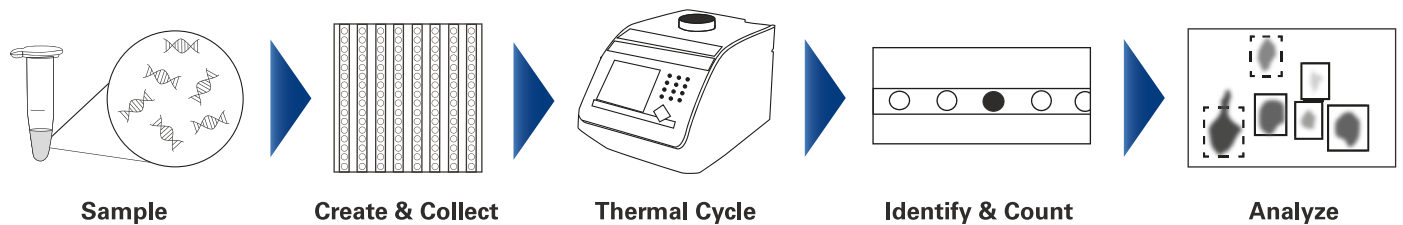
## Advantages

Sensitivity	<ul style="list-style-type: none"><li>Study 1 mutant amongst 250,000 wild-type molecules with a lower limit of detection of 1 in more than 1,000,000 in a single lane</li></ul>
Multiplexing	<ul style="list-style-type: none"><li>Conduct up to 10 tests or more on the same sample using the single molecule multi-color detection technique</li></ul>
Study design flexibility	<ul style="list-style-type: none"><li>Optimize the number of PCR reactions based on your sensitivity AND multiplex requirements</li></ul>
Closed-tube design	<ul style="list-style-type: none"><li>Ensure the highest quality data by eliminating contamination or carryover</li></ul>
Proven platform	<ul style="list-style-type: none"><li>Leverage decades of experience with the same technology found in PCR and quantitative PCR systems</li></ul>
Lowest cost per data point	<ul style="list-style-type: none"><li>Generate true digital answers with orders of magnitude more data per dollar</li></ul>



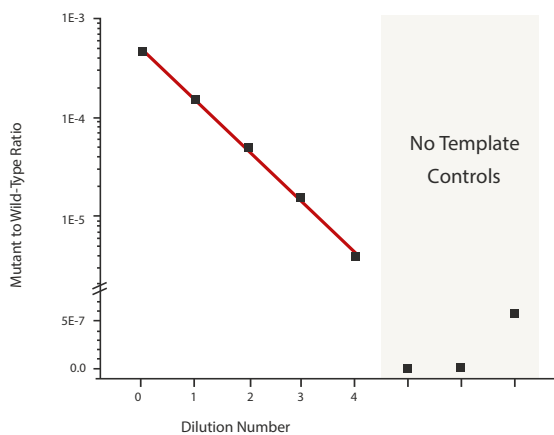
*Accelerate your biomedical research*

## Streamlined workflow



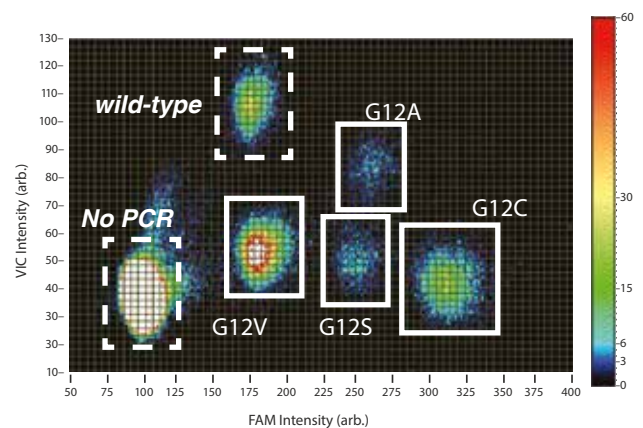
The RainDrop System shifts the PCR paradigm from a single color per marker to a more scalable and precise multi-color and intensity-per-marker method. This novel approach increases sensitivity by generating between 5 million and 10 million picoliter sized droplets per lane, which is up to a 1,000x improvement over existing methods. Since each droplet encapsulates a single target molecule, researchers can quickly determine the absolute number of droplets containing specific target DNA and compare that to the amount of droplets with normal, background wild-type DNA.

## Sensitivity



To assess the lower limit of detection (LLOD) of an EGFR mutation, varying concentrations of mutant were diluted into genomic wild-type DNA. The assay delivered a linear response ( $R^2 = 0.998$ ) down to 1 mutant amongst 250,000 wild-type molecules, with a LLOD of 1 in more than 1,000,000 as defined by the average of the wild-type only controls plus 3x the standard deviation.

## Multiplexing



By adjusting concentrations of the probes for each individual assay, 4 mutations plus wild-type were measured simultaneously with just VIC and FAM fluorophores. Multiplexing can be expanded to higher plex levels, and it enables detection, identification, and measurement of multiple mutations from a single DNA sample.

## System components

- Two benchtop instruments (P/N: 20-04400), each with its own PC workstation
- RainDrop Source: Creates and collects up to 10 million picodroplets per lane
- RainDrop Sense: Identifies and counts each picodroplet following PCR amplification
- RainDrop data analysis package

## System features

- Closed tube design
- FAM (512 nm) & VIC (543 nm) detection channels
- Graphical user interface provides intuitive operation
- Integrated bar-coding to record all reagents and consumables
- Industry standard data output format (FCS 3.0)
- Standard one year warranty

## System specifications

- Instrument dimensions (Depth x Width x Height): 17 x 11 x 15 inches; 43 x 26 x 37 cm
- Voltage/Frequency/Power: 120-230 VAC / 50-60 Hz / 100 W
- Operating temperature range: 15-30° C
- Operating temp fluctuation: <0.3°C/minute
- Humidity: 5-85% RH, non-condensing
- Capacity: 8 lanes/chip

## Additional equipment requirements

- Compressed air input pressure range 90-120 PSI (0.62mPa-0.83MPa), compressed clean air recommended
- Computer for analysis software running Windows 7 64 bit with at least 8GB of RAM, or Windows 7 32 bit with at least 4 GB of RAM
- Thermal cycler for standard 0.2 ml tubes, with adjustable height heated lid and adjustable ramp rate