



New

RealMOD™ Green T² 2X qRT-PCR mix **RealMOD™ Green T² 2X qPCR mix**

for Real-time PCR (indicating dye chemistry)

iNtRON Biotechnology

Product Overview & Advanced Formulation

RealMOD™ Green T² Series: Advanced Core Infrastructure

The RealMOD™ Green T² Series introduces a highly optimized real-time PCR platform designed to systematically address the technical vulnerabilities of conventional dye-based assays, such as low-concentration sample dropouts and template-independent non-specific amplification. By integrating advanced enzyme stabilization chemistry with a high-performance buffer matrix, this series ensures maximum reaction sensitivity and absolute data integrity across diverse quantitative applications.

- **Universal Instrument Compatibility** : Pre-blended with a universal ROX reference dye, ensuring seamless, calibration-free operations across low-ROX, high-ROX, and ROX-independent qPCR instruments.
- **Visual Verification System** : Formulated with a non-interfering blue tracking dye that provides instant visual confirmation of pipetting accuracy in multi-well plates, significantly reducing human handling errors.
- **Streamlined Efficiency** : Supplied as a ready-to-use 2X times master mix architecture that requires only the addition of target-specific primers and templates, drastically reducing hands-on time.

RealMOD™ Green T² 2X qPCR mix (DNA Target)

This master mix is fine-tuned specifically for maximizing DNA amplification kinetics from genomic DNA or cDNA libraries.

- **Next-Generation Polymerase System**: Employs an advanced antibody-mediated Taq DNA Polymerase coupled with proprietary specificity-enhancing factors. This dual-action engine strictly suppresses primer-dimer formation and background noise.
- **Low-Abundance Quantification**: The highly optimized buffer infrastructure guarantees reproducible, linear detection down to single-digit template copies, delivering exceptionally high plateau fluorescence values.



RealMOD™ Green T² 2X qRT-PCR mix (RNA Target)

This comprehensive one-step formulation is dedicated to ultra-sensitive RNA quantification by merging reverse transcription and qPCR into a single-tube reaction.

- **Dual-Lock Specificity Enzyme Blend**: Combines a temperature-activated Reverse Transcriptase with an antibody-mediated hot-start Taq DNA Polymerase. This synergistic blend prevents non-specific primer extension during reaction setup.
- **Enzymatic gDNA Clearance System**: To ensure absolute data integrity, the kit is uniquely equipped with a specialized 5X gDNA Eraser. It rapidly and selectively eradicates contaminating host genomic DNA within 2 minutes at 42°C without compromising transcript stability, completely eliminating false-positive results.



Ultra-Fast Workflows & Instrument Protocol Parameters

Maximizing Diagnostic and Research Throughput

- **Eliminate Lengthy Runs**: High elongation speed of modern polymerases cuts average run time down to under 40 minutes on fast real-time PCR instruments.
- **One-Step qRT-PCR Protocol**: Integrates a 3-minute reverse transcription phase with a lightning-fast qPCR cycle (5 sec denaturation / 20 sec annealing) in a single tube.
- **Streamlined Handling**: Ready-to-use 2X Mix means only target primers and sample template need to be added, minimizing preparation prep times.

3m

Instant cDNA Synthesis

Ultra-fast RT step saves up to 30 mins over conventional assays

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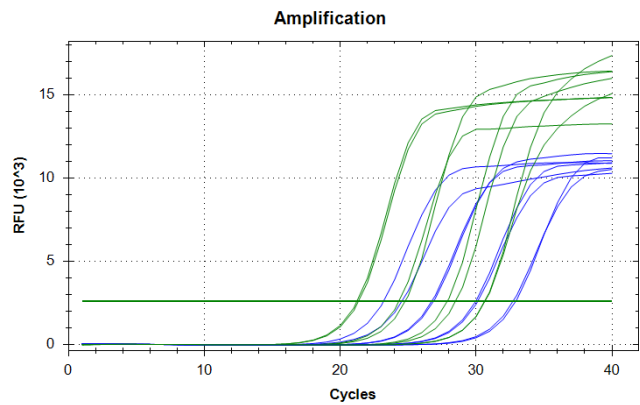
Minutes Total Runtime

Rapid elongation rates compress cycling times by over 50%

Maximize Dynamic Range & Signal Intensity

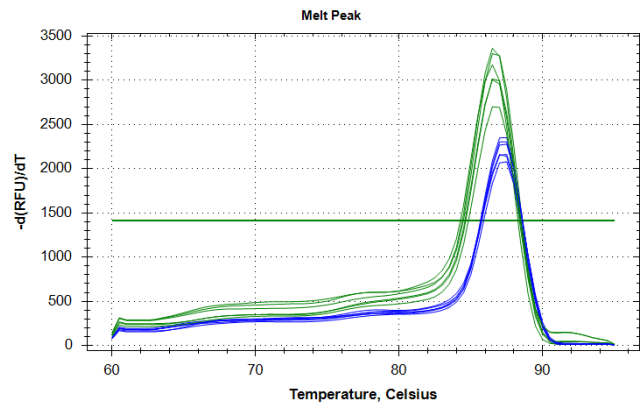
RealMOD™ Green T² 2X qPCR mix is engineered to deliver sharp, high-plateau amplification curves and absolute quantitative accuracy across any DNA concentration, from bulk genomic DNA to low-copy cDNA libraries.

(A) Amplification Plot (FAM Channel)



RealMOD™ Green T² : Green color curve
Supplier A : Blue color curve

(B) Melting Curve Profile



RealMOD™ Green T² : Green color curve
Supplier A : Blue color curve

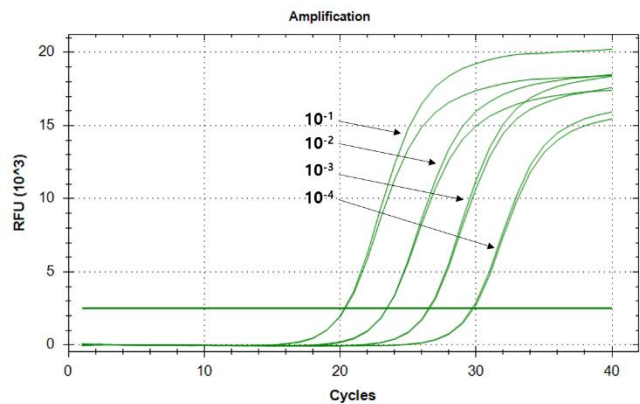
Performance Comparison against Competitor (GAPDH Target).

Assay Profile: Comparative quantification of a standard housekeeping gene target from human genomic DNA template.

Dilution Matrix Parameters: The DNA template was 10-fold serially diluted from 5 ng down to 50 pg (executed in duplicate).

Performance Validation: RealMOD™ Green T² 2X qPCR mix (Green curves) demonstrates significantly earlier Ct values, substantially higher final fluorescence intensities (Plateau values), and a highly specific single-target amplification profile compared to Supplier A (Blue curves).

Amplification Plot (FAM Channel)



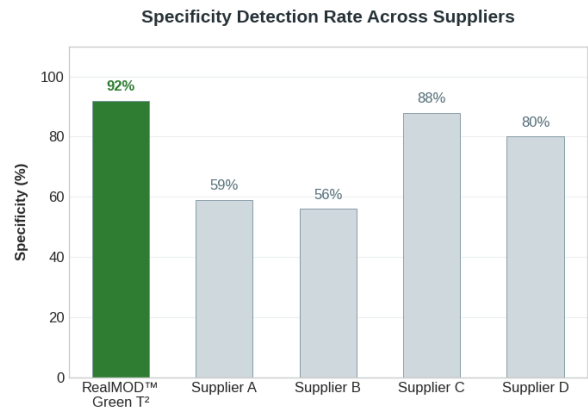
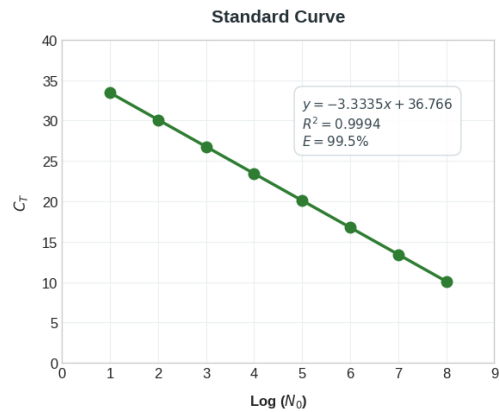
Linear Dynamic Range for Low-Copy DNA Targets (CPIV cDNA)

Verification Matrix: Validation of a broad linear dynamic range and high-sensitivity quantification infrastructure utilizing a 10-fold serially diluted DNA template (ranging from high concentration down to single-digit copy thresholds) executed in duplicate amplification kinetics.

Experimental Assay Criteria: Dynamic range amplification curves of the targeted DNA region.

Performance Validation: The precisely and evenly spaced amplification curves demonstrate excellent, near-perfect amplification efficiency and highly robust detection capabilities even at ultra-low DNA concentration thresholds. This confirms the kit's broad template compatibility and exceptional performance stability with challenging, low-copy DNA types.

Proven Linearity and Unmatched Specificity



Exceptional Linear Dynamic Range

Data Insight: The standard curve plotted from the serial dilution series demonstrates an outstanding linear relationship ($R^2 = 0.9994$) with a high amplification efficiency of $E = 99.5\%$.

Marketing Value: This exceptional linearity guarantees that RealMOD™ Green T² 2X qPCR mix delivers stable, highly accurate, and reproducible quantification across a wide dynamic range, maintaining reliable detection even down to single-digit template copy numbers.

Superior Target Detection and Specificity

Data Insight: In a comparative evaluation using HeLa cell cDNA templates across six different genes, RealMOD™ Green T² 2X qPCR mix successfully quantified over 92% (22/24) of the target genes under identical reaction conditions.

Marketing Value: Outperforming all alternative major suppliers (which dropped as low as 56%–88% in specificity), our formulation effectively suppresses primer dimers and non-specific amplification, ensuring maximum data integrity for multi-target assays.

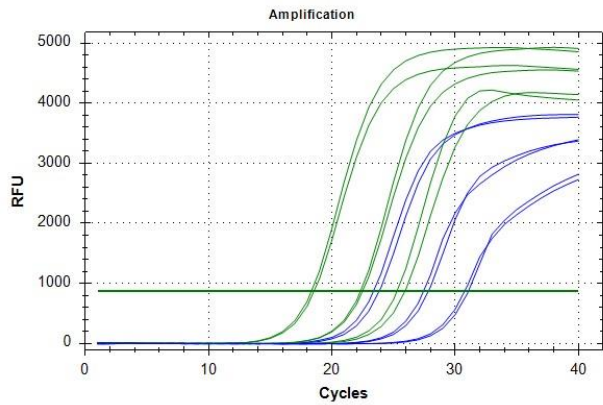
ORDERING INFORMATION

Cat.No.	Product Name	Q'ty
25364	RealMOD™ Green T ² 2X qPCR mix	200 rxns
		500 rxns
25365	RealMOD™ Green T ² 2X qRT-PCR mix	100 rxns
		300 rxns
17045	G-spin™ Total DNA Extraction Mini Kit	50 col.
17046		200 col.
17096	DNA-spin™ Plasmid DNA Purification Kit	50 col.
17098		200 col.
17151	Viral Gene-spin™ Viral DNA/RNA Extraction Kit	50 col.
25081	Maxime™ RT PreMix (Oligo (dT)15 Primer)	96 tubes
25082	Maxime™ RT PreMix (Random Primer)	96 tubes

Superior Amplification Efficiency, High Sensitivity, and Broad Versatility

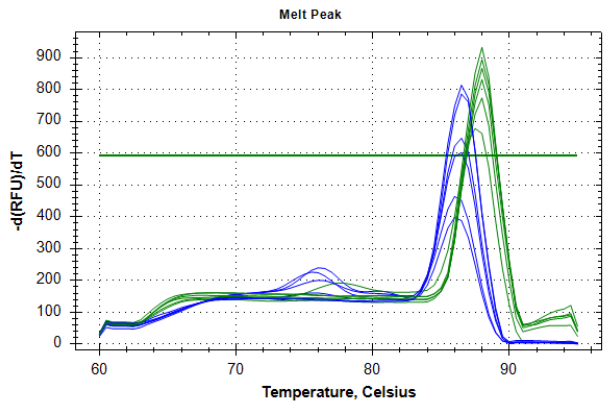
RealMOD™ Green T² 2X qRT-PCR mix delivers unmatched amplification efficiency, exceptional sensitivity, and reliable performance across diverse RNA templates, including both cellular and viral targets.

(A) Amplification Plot (FAM Channel)



RealMOD™ Green T² : Green color curve
Supplier A : Blue color curve

(B) Melting Curve Profile



RealMOD™ Green T² : Green color curve
Supplier A : Blue color curve

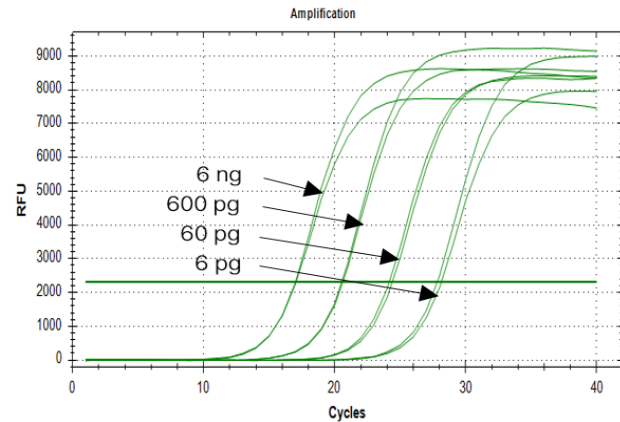
Performance Comparison against Competitor (GAPDH Target).

Experimental Assay Criteria: Amplification curves and melt peaks of the house-keeping GAPDH gene from K562 cellular total RNA.

Dilution Matrix Parameters: The RNA template was 10-fold serially diluted from 20 ng down to 200 pg (executed in duplicate).

Performance Validation: The RealMOD™ Green T² 2X qRT-PCR mix demonstrates significantly earlier Ct values, higher final fluorescence intensities, and specific single-target amplification profile compared to Supplier A.

Amplification Plot (FAM Channel)



Linear Dynamic Range for Viral Copy Targets (CPIV RNA)

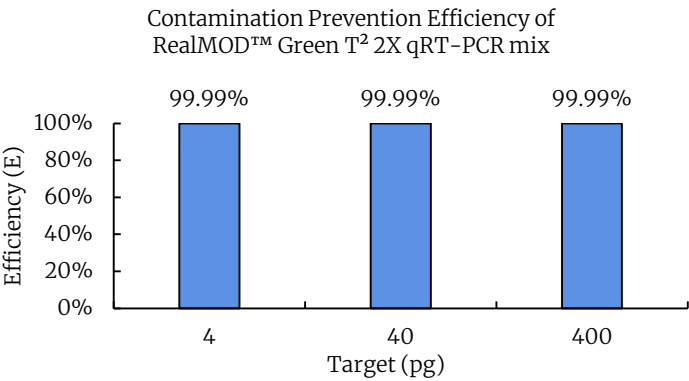
Verification of the broad linear dynamic range and high-sensitivity quantification matrix utilizing 10-fold serially diluted CPIV viral RNA samples (6 ng down to 6 pg) in duplicate amplification kinetics.

Experimental Assay Criteria: Amplification curves of viral CPIV RNA targets.

Dilution Matrix Parameters: The viral template architecture was 10-fold serially diluted from 6 ng down to 6 pg (executed in duplicate).

Performance Validation: The evenly spaced amplification curves demonstrate excellent amplification efficiency and highly sensitive detection capability even at ultra-low RNA concentration thresholds, validating the kit's broad compatibility and performance stability with diverse, low-copy RNA types.

Exceptional Carryover Contamination Control for Absolute Accuracy



To evaluate the anti-contamination performance of the active dUTP/UDG system in the RealMOD™ Green T² 2X qRT-PCR mix.

Amplification was performed using templates completely substituted with Uracil (all-U) to simulate aerosol carryover contaminants, alongside normal Thymine (all-T) templates representing true targets..

The test was conducted across a dynamic template input range of 4 pg, 40 pg, and 400 pg.

Advanced UDG System: The RealMOD™ Green T² 2X qRT-PCR mix is equipped with a highly active dUTP/UDG (Uracil-DNA Glycosylase) anti-contamination system. This built-in mechanism is strictly designed to eliminate aerosol carryover contamination from previous amplification reactions, thereby preventing false-positive results.

Experimental Design: To rigorously evaluate the prevention efficiency, templates completely substituted with Uracil (all-U) and normal Thymine (all-T) were tested across a wide dynamic range with input concentrations of 4 pg, 40 pg, and 400 pg.

Efficiency Calculation: The contamination prevention efficiency (E) was mathematically determined using the following formula:

$$E = (1 - 2^{-(C_T(\text{all-U} - \text{all-T})))})\%$$

Unmatched Reliability: Across all tested template concentrations, the RealMOD™ Green T² 2X qRT-PCR mix demonstrated a formidable contamination prevention efficiency of 99.99%. This outstanding clearance capability ensures maximum data accuracy and supreme reliability, making it the ideal solution for both sensitive research and high-throughput diagnostic applications.

ORDERING INFORMATION

Cat.No.	Product Name	Q'ty
25365	RealMOD™ Green T² 2X qRT-PCR mix	100 rxns
		300 rxns
25364	RealMOD™ Green T² 2X qPCR mix	200 rxns
		500 rxns
25361	RealMOD™ Probe M² 2X qRT-PCR mix (with UDG)	100 rxns
		500 rxns
17221	easy-spin™ Total RNA Extraction Kit	50 col.
17211	RNA-spin™ Total RNA Extraction Kit	50 col.
17151	Viral Gene-spin™ Viral DNA/RNA Extraction Kit	50 col.
17491	IQeasy™ plus Plant RNA Extraction Kit	50 col.