

## Product Datasheet

# Vazyme - SupRealQ Ultra Hunter SYBR qPCR Master Mix (U+) (Q713-00)

**Catalog Number** Q713-00

**Category** Tools

**Description** This product is a specialized premix for qPCR reactions using the SYBR Green fluorescence method, with a purple color to facilitate sample loading. The core enzyme is a Taq polymerase selected through BioSmart platform-directed screening, featuring strong 3' end mismatch recognition and high specificity. It is combined with high-closure dual-species antibodies to form a hot-start Taq enzyme, which maintains strict closure at 55°C. Paired with an optimally formulated buffer for qPCR, it enables precise detection and efficient amplification of target genes, even with low template amounts or low-expression genes. The reagent includes a dUTP/UDG contamination prevention system that works at room temperature, preventing aerosol contamination and ensuring the accuracy of qPCR results. Additionally, this product contains a special ROX Passive Reference Dye, making it compatible with a wide range of qPCR instruments. No need to adjust the ROX concentration for different instruments—simply add primers and templates during reaction setup to begin amplification.

**Usage Notes** Restricted to UK and Ireland's customers ONLY

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## Storage

Store at -30 ~ -15°C and protect from light. Ship at ≤0°C. Performance Compatible with Complex Samples Through the BioSmart platform, our core enzyme is screened for high amplification performance and paired with a patented dual-species antibody blocking technology. This combination ensures stable amplification of complex templates, reducing the need for repeated system adjustments and enhancing researchers' experimental efficiency.

a. Reliable Detection of Relatively Low-Abundance Genes Using SupRealQ Ultra Hunter SYBR qPCR Master Mix (U+) (Vazyme #Q713), qPCR reactions were performed on 293T cDNA for various genes under identical conditions. Certain genes exhibited delayed C T values compared to others (as shown for Gene 1, Gene 2, and Gene 3 in the graph below), indicating their classification as relatively low-abundance genes. For Gene 3, amplification was carried out using Vazyme #Q713 and a competitor's dye-based qPCR reagent (Supplier A). Results demonstrated that Vazyme #Q713 outperformed Supplier A in sensitivity for low-abundance genes, while maintaining high specificity for amplification products.

b. Amplification of Moderately Degraded Samples RNA extracted from the pancreas tissue of *Litopenaeus vannamei* was subjected to gel electrophoresis, which showed no distinct bands, indicating sample degradation. The degraded RNA was reverse-transcribed into cDNA, which was subsequently diluted in a 2-fold series across three gradients. Amplification of the shrimp gene was performed using Vazyme #Q713 and Supplier A's dye-based qPCR reagent on the ABI QuantStudio 3 system. The results showed that Vazyme #Q713 achieved stable amplification of degraded samples, with amplification efficiency meeting the MIQE (Minimum Information for Publication of Quantitative Real-Time PCR Experiments) guideline standard of 90-110%.

c. Amplification of Genes with High and Low GC Content Using 293T gDNA as the template, Vazyme #Q713 and Supplier A's dye-based qPCR reagent were used to amplify Gene 4 and Gene 5, representing high and low GC content, respectively, on the ABI QuantStudio 3 system. The results demonstrated that Vazyme #Q713 exhibited superior sensitivity and specificity compared to Supplier A for both high- and low-GC content genes. Wide Linear Range Mouse liver cDNA was subjected to a 10-fold serial dilution, and qPCR amplification of mouse genes was performed using Vazyme #Q713 and Supplier A's dye-based qPCR reagent on the ABI QuantStudio 3 system. The results showed that Vazyme #Q713 exhibited amplification efficiency within the 90-110% range deemed reliable by MIQE guidelines across a wide linear range, outperforming Supplier A. Efficient Anti-Contamination Vazyme #Q713 incorporates a dUTP/Heat-labile UDG anti-contamination system, which effectively removes contaminants from the reaction mixture at room temperature. As the reaction temperature increases to 50-55°C, Heat-labile UDG rapidly inactivates, preserving the integrity of cDNA and ensuring that detection sensitivity remains unaffected. To test the contaminant removal efficiency, 60 pg and 600 pg of U-containing templates were added to the reaction mixture. The results showed that Vazyme #Q713 achieved a contaminant removal efficiency of over 99.99%, effectively ensuring the accuracy of experimental results.

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**Background**

Only available for the UK and Republic of Ireland

**Note**

For research use only

**Expiration Date**

12 months from date of receipt.

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