



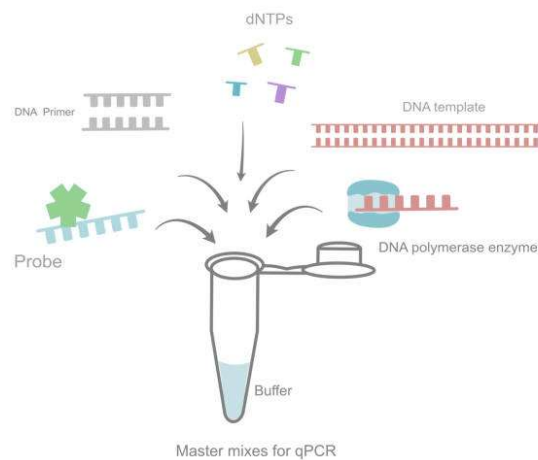
MUSTAFA LAB TECHNOLOGIES

(RESEARCH AND DIAGNOSTIC CONSULTANCY SERVICES)

qPCR GUIDELINES OPTIMIZED FOR PRECISION & RELIABILITY

1. Sample Preparation

- Use high-quality RNA/DNA with an **A260/280 ratio of ~1.8-2.0** for optimal purity.
- Assess RNA integrity using **agarose gel electrophoresis or a Bioanalyzer (RIN >7 recommended)**.
- Avoid contamination by using **RNase/DNase-free consumables** and designated workspaces.
- Use **nuclease-free water** for dilutions and store extracted nucleic acids at **-80°C for long-term stability**.
- At **Mustafa Lab Technologies**, we ensure sample integrity through stringent quality control measures, enhancing the reproducibility of molecular assays.



2. Primer & Probe Design

- Design primers using **Primer3, NCBI Primer-BLAST, or IDT PrimerQuest** to ensure specificity.
- Keep **amplicon size between 70-200 bp** for efficient amplification.
- Avoid **secondary structures, self-dimerization, or primer-dimer formation** using tools like OligoAnalyzer.
- Validate primer efficiency using a **standard curve with serial dilutions (90-110% efficiency range is ideal)**.
- Choose hydrolysis probes (**TaqMan**) or intercalating dyes (**SYBR Green**) based on assay requirements.
- **Mustafa Lab Technologies offers expert-designed, high-quality oligonucleotides** tailored to your qPCR needs, including custom modifications such as **fluorescent labels, biotinylation, and phosphorylation**.

