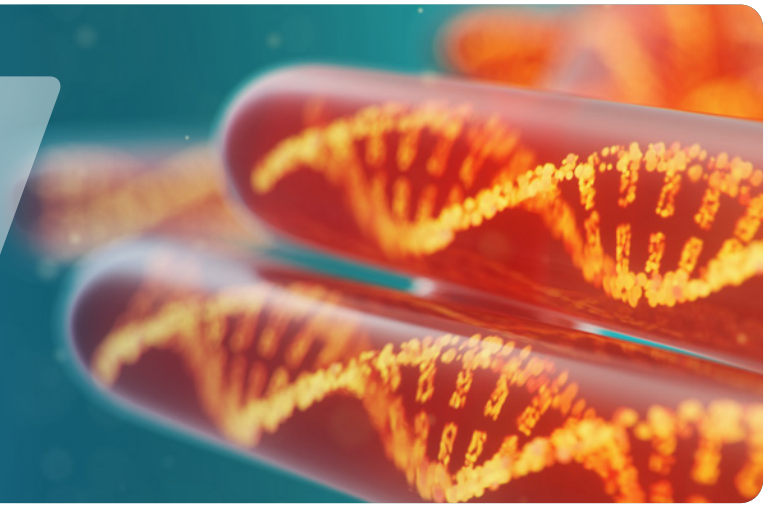
Air-Dryable Direct DNA qPCR Blood

Designed for creating ambient-temperature stable assays from whole blood without extraction



Air-Dryable Direct DNA qPCR Blood is a glycerol-free mix that contains optimized excipients compatible with air and oven drying and is designed for the direct quantitation of DNA from whole blood, serum or plasma.

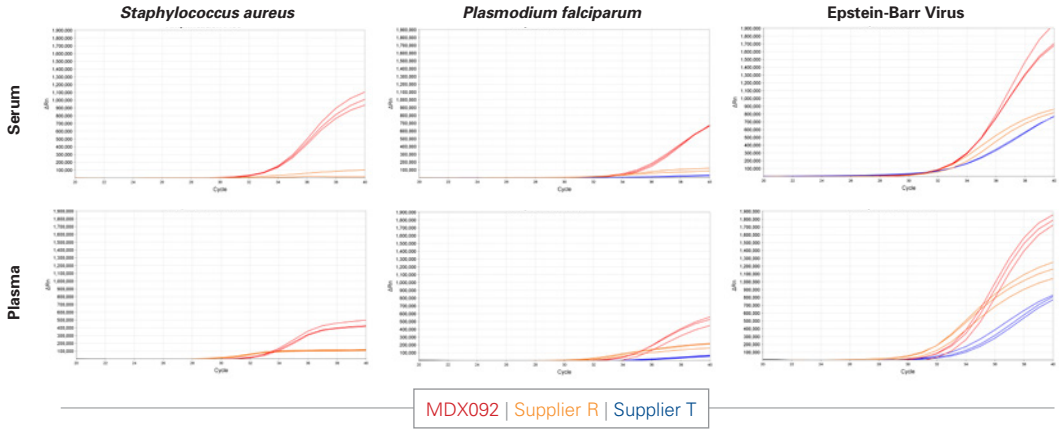
Clinical specimens, such as blood, urine or stool contain a range of PCR inhibitors which impact the efficiency of a qPCR/RT-qPCR reaction and in general, need to be removed by performing a DNA or RNA extraction/clean-up step prior to testing. Inhibitor tolerant qPCR mixes have been specially developed to overcome the challenges associated with PCR inhibition. Whole blood specimens, serum and plasma are exceptionally challenging as they contain inhibitors within the sample itself such as immunoglobulin G, hemoglobin, lactoferrin and leukocyte DNA as well as in the anticoagulants used to stabilize the sample (e.g. EDTA, citrate or heparin).

Air-Dryable Direct DNA qPCR Blood is an inhibitor-tolerant mix designed for direct DNA quantitation from whole blood, serum or plasma. In addition, it contains excipients and an optimized buffer system that is compatible with oven or air drying. To create an ambient-temperature stable assay, primers and probes are added to the Air-Dryable Direct DNA qPCR Blood mix and the reagent preparation is aliquoted into the final assay vessel (e.g. PCR tubes) before oven or air-drying (please see the product guide and FAQs for recommendations on oven drying parameters). Patient blood sample can be used directly on the dried assay, and do not require nucleic acid purification. Because this product is highly resistant to PCR inhibitors in blood, serum and plasma, it can be used to detect pathogens, including viruses, bacteria and parasites with very high sensitivity.

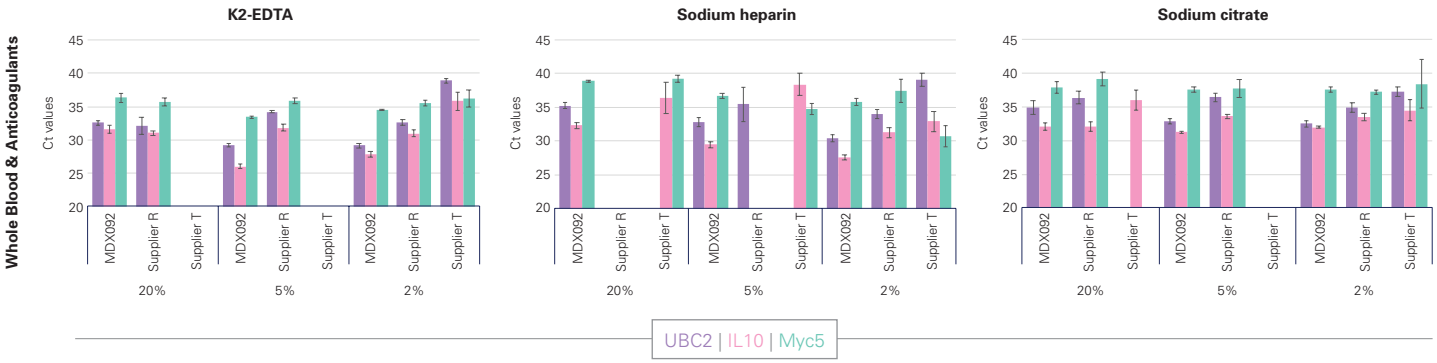
PRODUCT	CAT NO.	VOLUME	REACTIONS
Air-Dryable Direct DNA qPCR Blood, 4x	MDX092	5 mL	1,000 Rxn
		50 mL	10,000 Rxn

Product Highlights

High reaction efficiency on plasma, serum and whole blood samples containing anticoagulants

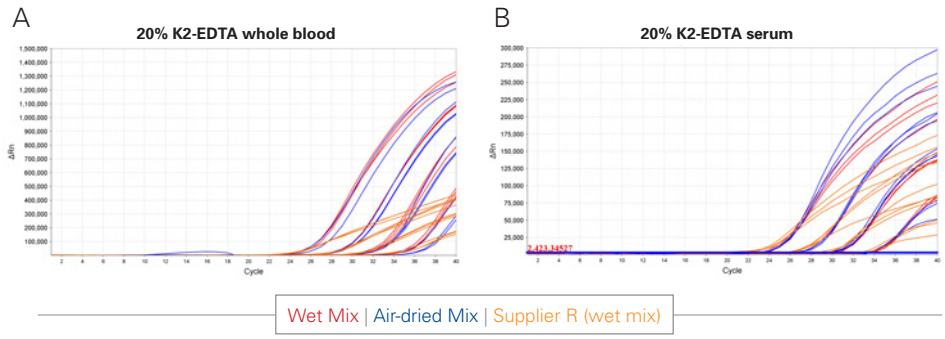


Plasmid DNA contains the target *S. aureus*, *P. falciparum* and Epstein Barr virus was spiked into 10% serum or 10% K2-EDTA plasma and amplified in a triplex reaction using air-dried MDX092 format (red) and kits from supplier R (orange) and supplier T (blue). The results illustrate higher end florescence and better sensitivity with MDX092 than with mixes from supplier R and T.



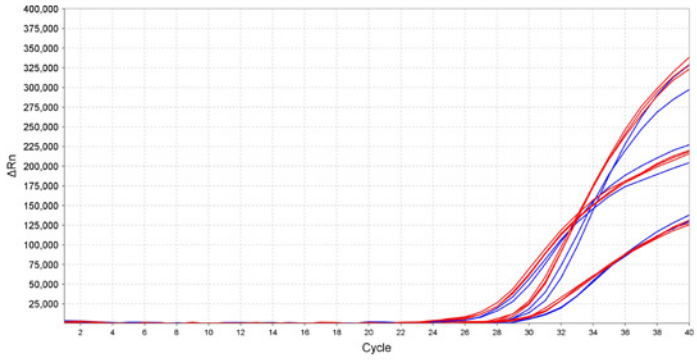
Anticoagulants (K2-EDTA, sodium heparin and sodium citrate) and high concentrations of whole blood are known to inhibit qPCR efficiencies. Air-Dryable Direct DNA qPCR Blood (MDX092) was tested against mixes from supplier R and supplier T on the ability to amplify three different genes (UBC2, IL10 and Myc5) directly from 2%, 5% and 20% whole human blood in the presence of anticoagulants. The results demonstrate that the reaction efficiency of the Air-Dryable Direct DNA qPCR Blood is higher in the presence of both anticoagulants and high concentrations of blood than for other suppliers' mixes.

Air-drying does not impact assay efficiency or sensitivity



Activity of Air-Dryable Direct DNA qPCR Blood in both air-dried (red) and wet (blue) formats was compared to supplier R (orange) in a multiplexing qPCR assay, using a 10-fold serial dilution of plasmid DNA (10,000, 1000, 100 and 10 copies respectively) for *Plasmodium falciparum*, in presence of A) 20% K2-EDTA whole blood and B) 20% K2-EDTA serum. The results illustrate that the Air-Dryable Direct DNA qPCR Blood retains the ability to efficiently amplified to the same level as the wet mix and shows higher end florescence and sensitivity than the supplier R mix.

Air-dried mixes maintain their shelf-life for up to 12 months



Air-Dryable Direct DNA qPCR Blood was air dried and the stability was tested in an accelerated stability study. 25%, 46% and 64% GC-rich DNA was amplified with Air-Dryable Direct DNA qPCR Blood that was air-dried (red) and incubated a 37 °C for 1 month and tested against the fresh wet mix (blue) in a qPCR assay with 5% K2-EDTA whole blood. Results suggest that the air-dried mix is active following accelerated stability tests with projected 12 months stability at ambient temperature.

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