TECHNICAL DATA SHEET

DeCodi-Fi™ Blood Direct

2X All-in-One Mix

Product Code: BD-AIOM-DecodiFi-1.25ml
BD-AIOM-DecodiFi-5ml

PRODUCT DESCRIPTION

DeCodi-Fi™ Blood Direct 2X All-in-One Mix is a high-performance Master Mix optimized for direct DNA amplification from whole blood (fresh or dried), even in the presence of common preservatives such as EDTA, heparin, and citrate. **Powered by DeCodi-Fi™, a recombinant Hotstart High-Fidelity Polymerase,** it delivers strong inhibitor tolerance, robust proofreading, and low amplification bias, ensuring consistent, high-quality sequencing coverage.

DeCodi-Fi™ Blood Direct 2X All-In-One Mix includes all essential components (dNTPs, $MgCl_2$, and stabilizers) in a proprietary buffer, requiring only primers and template.

PRODUCT APPLICATIONS

- Direct PCR from whole blood with preservatives for genotyping, diagnostics, or biomarker detection
- NGS library preparation from blood samples without DNA extraction.

SHIPPING AND STORAGE

The DeCodi-Fi™ Blood Direct 2X All-in-One Mix has been designed by Kura Biotech to be transported within a temperature range of 2°C to 8°C without losing performance.

To ensure optimal kit performance, please adhere to the following guidelines:

- Store the components according to the specifications on each vial's label or follow the instructions in this manual. Avoid repeated freeze-thaw cycles.
- If any kit components were damaged during transportation, contact Kura Biotech. Do not use damaged or expired components as it may compromise performance.

PRODUCT COMPONENTS

Components	Volume 100 rxn kit	Volume 400 rxn kit	Storage T°
DeCodi-Fi™ Blood Direct 2X All-in-One Mix	1.25 mL	5 mL	-20°C

STANDARD PCR RECIPE

Calculate the volume of reagents needed for each reaction. Typically, reactions are set up in 25 or 50 µL volumes.

General recipe for a 25 µL reaction:

Components	25 µL reaction	Final concentration
dH_2O	To 25 µL	-
Blood	Variable	5%-20%[a]
Forward primer (10 µM)	0.5 µL	0.2 µM
Reverse primer (10 µM)	0.5 µL	0.2 µM
DeCodi-Fi™ Blood Direct 2X All-in-One Mix	12.5 µL	1x

[a]Add 5–20% blood to the reaction mix; optimal PCR performance is achieved at 10%.

PREPARE THE PCR REACTION

- To prevent primer degradation caused by DeCodi-Fi™'s strong 3'-exonuclease activity, set up the PCR reaction on ice.
- Mix all components in a sterile PCR tube or plate, spin down, then add the blood last without mixing.

- Place the PCR tubes or plates into the thermal cycler.
- Set up the cycling conditions based on the primer's calculated melting temperature (Tm)[c] or according to results from a previous gradient PCR (strongly recommended).
  To perform a temperature gradient, use the lower primer Tm calculated as reference. Start 4 °C below this value and increase in 2 °C increments up to 4 °C above the calculated Tm.

PCR CYCLING PROGRAM

Step	Temperature	Time	Cycles
Initial denaturation	95°C	2 min	1
Denaturation	95°C[b]	5-10 sec	10-35 [d]
Annealing	Calculated Tm[c]	15 sec	
Extension	72°C	15 sec/kb	
Final extension	72°C	2 min	1
Hold	4°C	∞	

[b] Use 98°C for 10 sec for GC-rich templates (>70% GC).

[c] Suggested Tm calculated with default parameters and "salt adjusted" using:
Oligonucleotide Properties Calculator

[d] Cycle numbers may need to be optimized based on specific template input, primers, and final application. Lower cycling reduces the probability of errors, and helps diminishing nonspecific products or smearing.

PCR PRODUCT ANALYSIS

After PCR, centrifuge the product and use the supernatant for gel electrophoresis, or proceed to downstream applications based on your experimental goals.

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