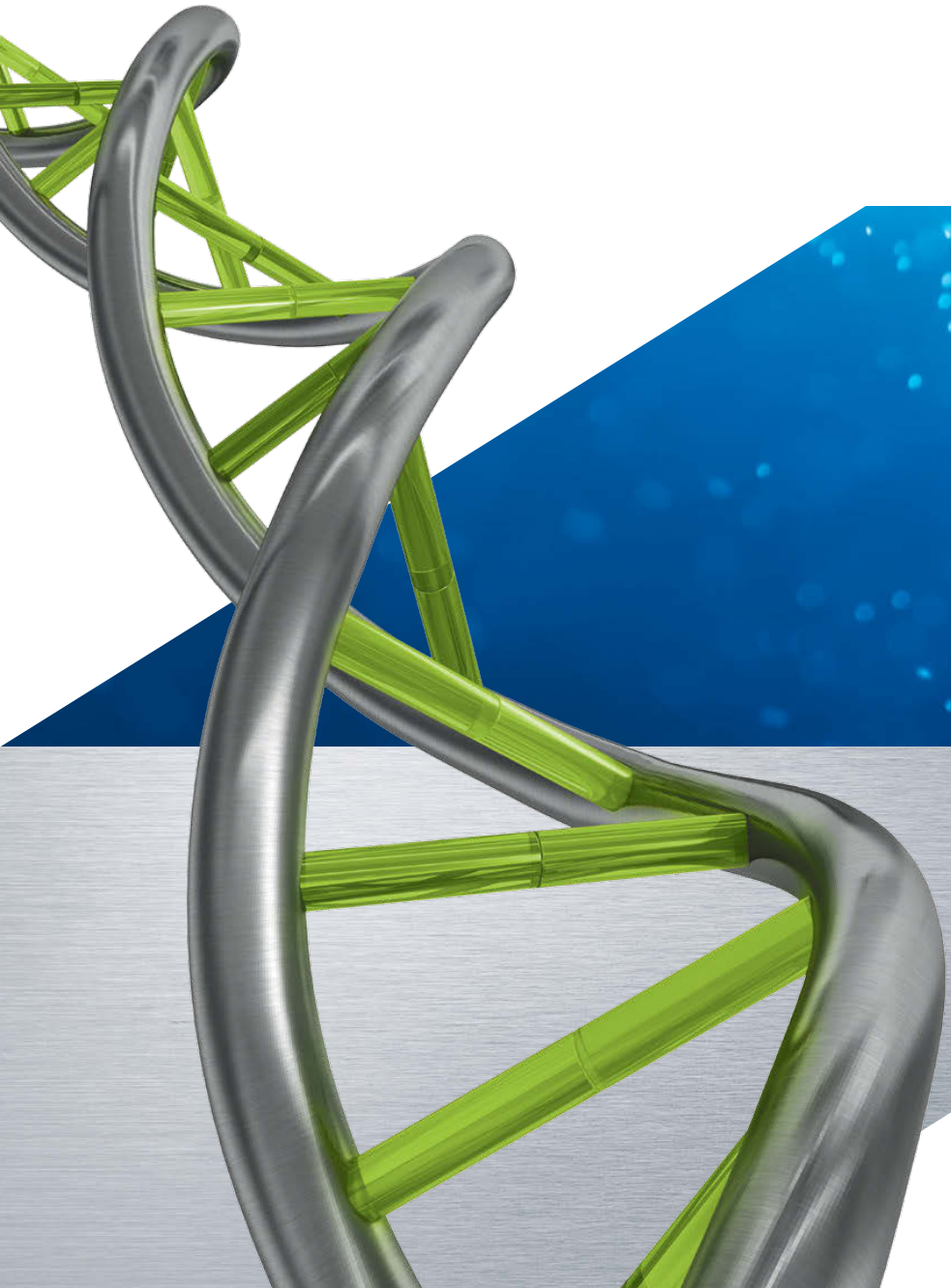
Evolved to break through

KAPA Probe Force



KAPA is now Roche

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Evolved to break through
KAPA Probe Force

KAPA Probe Force is our most inhibitor–resistant qPCR master mix that removes the need for DNA purification, enabling streamlined sample-to-result workflows. The master mix contains a third-generation (3G) DNA polymerase evolved to overcome blood, tissue, and plant PCR inhibitors. Crude samples can now be analyzed with comparable accuracy, reproducibility, and sensitivity as purified DNA using KAPA Probe Force.

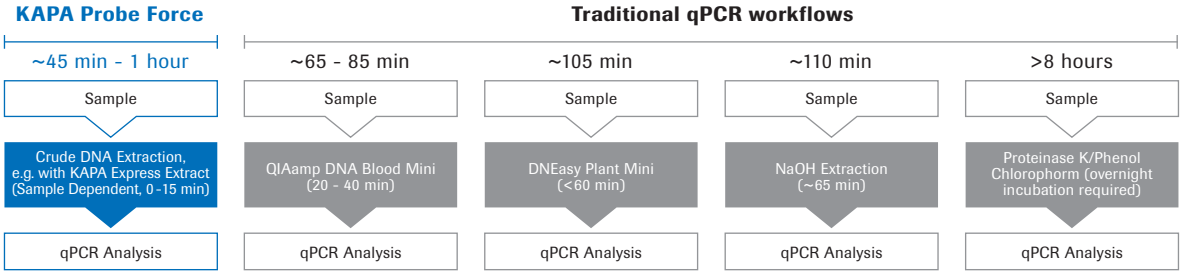
Gains from KAPA Probe Force:

- **Easily work with crude samples and benefit from broad tolerance to carry-over inhibitors**
  Obtain accurate and reproducible results with direct PCR from crude blood, tissue and plant extracts
- **Save valuable time and costs**
  Minimize the need for DNA purification and shorten your sample-to-result workflows to <1 hour
- **Expand your options in assay development**
  Use for multiplexing qPCR applications with hydrolysis probe assays on a broad range of platforms

Streamline sample-to-result workflows

KAPA Probe Force enables the use of rapid crude DNA extraction methods and overcomes carry-over inhibitors. Competing master mixes used in traditional blood, tissue, and plant qPCR workflows require robust upstream sample processing (e.g., column purification or nuclease digestion).

- Eliminate the time and cost of sample purification by amplifying directly from crude samples
- Analyze a wide range of sample types including whole blood, cells, mouse tails, FFPE, leaf, stem, seed, and soil



Generate accurate and reproducible results

- Kits include a third-generation DNA polymerase, evolved for robust target amplification and detection
- Enzyme maintains high reaction efficiency in the presence of PCR inhibitors for reliable data generation

Reaction efficiency with inhibited samples

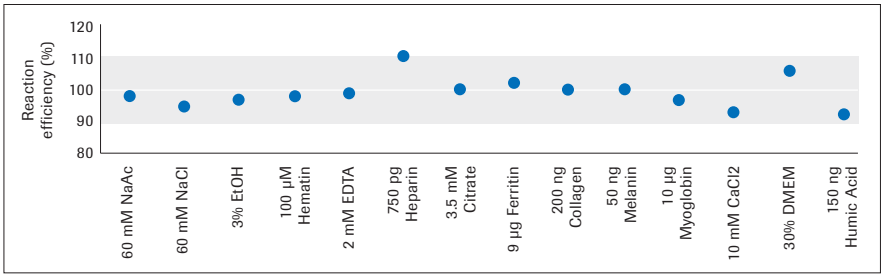


Figure 1: High efficiency target amplification. Reaction efficiencies achieved for inhibitor spiked samples were examined and compared to that of purified DNA. Across various inhibitor types, efficiencies remained within 90 – 110%.

Reference: data on file at Roche. For further processing only.

Break through high levels of qPCR inhibitors

KAPA Probe Force exhibits consistent and robust amplification across all inhibitors tested, without observable Cq delays.

- Achieve greater levels of sensitivity for inhibited blood, tissue, and plant samples
- Convert purified DNA assays to crude workflows without a loss in data quality

Purified vs. inhibited sample ΔCq

		Probe Force	Competitor 1	Competitor 2	Competitor 3	Competitor 4	Competitor 5
100 pg human gDNA		**29.62**	**28.91**	**29.08**	**32.98**	**29.53**	**29.78**
Blood inhibitors	Citrate (3.5 mM)	-0.04	2.64	-0.18	0.98	0.20	2.90
	EDTA (2 mM)	0.26	0.29	0.24	-0.35	0.80	1.07
	Ferritin (9 µg /10 µL)	-0.33	0.50	0.48	10 ng	NA	NA
	Hematin (100 µM)	0.99	0.29	0.75	NA	NA	NA
	Heparin (750 pg /10 µL)	-0.23	0.67	1.14	-0.02	0.53	3.77
100 pg mouse gDNA		**29.56**	**29.17**	**28.78**	**32.40**	**29.13**	**29.15**
Tissue inhibitors	Collagen (200 ng /10 µL)	-0.41	0.63	-0.02	1.40	0.21	0.69
	Myoglobin (10 µg /10 µL)	0.18	1.59	4.84	-1.65	3.47	1.97
	Melanin (50 ng /10 µL)	-0.09	0.73	0.97	NA	NA	NA
	$CaCl_2$ (10 mM)	0.03	100 ng	100 ng	NA	100 ng	NA
	DMEM (30%)	-0.72	NA	NA	NA	NA	NA
40 pg grapevine gDNA		**33.79**	**33.85**	**33.70**	**34.29**	**33.05**	**40.78**
Plant inhibitors	Polyphenols (7%)	1.02	0.10	0.47	3.01	0.98	1 ng
	Humic Acid (150 ng /10 µL)	0.76	0.52	0.70	NA	NA	NA

<1 ΔCq | 1 – 2 ΔCq | 2 – 3 ΔCq | >3 ΔCq | Detection failed. Lowest concentration at which Cq < 45 cycles detected or No Amplification (NA).

Table 1: Broad range of high inhibitor resistance. Baseline performance of KAPA Probe Force and competing master mixes was measured by creating standard curves with purified DNA according to each manufacturer's recommended cycling conditions. Serial dilutions were run in the following ranges: Human: 100 ng – 10 pg; Mouse: 100 ng – 10 pg; Plant: 25 ng – 8 pg. Inhibitors were individually spiked into purified DNA samples at high concentrations to determine their effect on Cq values.

Multiplex crude samples efficiently

Maximize data collection from precious samples, increase throughput, and reduce costs

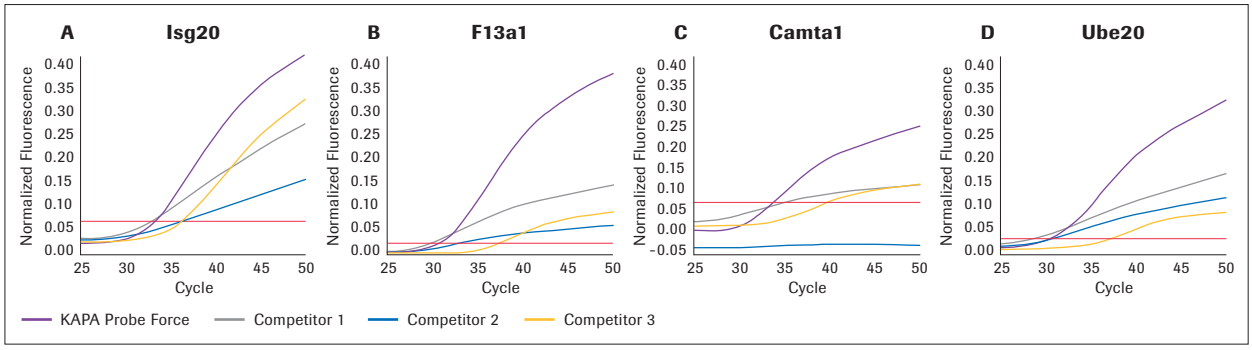


Figure 2: Highly efficient 4-plex performance. Four targets were amplified in a multiplex assay with KAPA Probe Force and three competitive master mixes. 100 pg mouse gDNA was amplified targeting the (A) Isg20 (FAM/BHQ-1), (B) F13a1 (CAL Fluor Orange 560), (C) Camta1 (Quasar 670) and (D) Ube20 (Quasar 705) genes. 500 nM primers and 110 nM probes were used with the following cycling conditions: 95°C for 30 sec followed by 50 cycles of 95°C for 3 sec, and 60°C for 30 sec.

Ordering information

Product	Pack size	Catalog number
KAPA Probe Force qPCR Master Mix	10 ml	08 041 237 001
KAPA Probe Force qPCR Master Mix	50 ml	08 041 229 001

Related products	Pack size	Catalog number
KAPA Express Extract	1,000 reactions	08 041 253 001

Reference

Data on file at Roche.

Regulatory disclaimer

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Please contact your local CustomBiotech representative

Europe, Middle East, Africa, Latin America
Phone +49 621 759 8580
Fax +49 621 759 6385
mannheim.custombiotech@roche.com

United States
Phone +1 800 428 5433, ext. 14649 (toll-free)
Fax +1 317 521 4065
custombiotech.ussales@roche.com

Canada
Phone +1 450 686 7050
Fax +1 450 686 7012
custombiotech.can@roche.com

Japan
Phone +81 3 6634 1046
Fax +81 3 5479 0585
japan.custombiotech@roche.com

Asia Pacific
Phone +65 6371 6638
Fax +65 6371 6601
apac.custombiotech@roche.com

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Roche Diagnostics GmbH
Sandhofer Straße 116
68305 Mannheim
Germany