PerfeCTa™ qPCR ToughMix™

DIFFICULT SAMPLES MAKING YOUR PCR UNRELIABLE? WHIP YOUR GENE EXPRESSION EXPERIMENTS INTO SHAPE WITH THE TOUGHEST MIX AROUND

PerfeCta qPCR ToughMixes enable expression analysis and other quantitative applications from crude samples such as lysates, blood spots, plant tissues and clinical samples.

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FEATURES AND BENEFITS

- **Bullet-Proof qPCR—easily overcome tough PCR inhibitors**
- **Short Run Times—fast cycling protocols enable more experiments**
- **Optical Clarity Technology—high precision in reduced reaction volumes**
- **Repeatable Results—hot-start polymerase highly stable at ambient temperature**

PerfeCta qPCR ToughMix is a ready-to-use 2X concentrated hot-start PCR mix containing additives which prevent inhibition of PCR or quenching of fluorescent signal by common PCR inhibitors. AccuFast DNA Polymerase is a low DNA hot-start preparation in which residual DNA is undetectable.

OVERCOME PCR TROUBLEMAKERS

Many sample types are rich in PCR inhibitors (Table 1). These PCR scoundrels operate by shutting down PCR amplification at threshold concentrations, or by quenching fluorescent signal. Expensive or time-consuming purification steps are no longer required to eliminate inhibitors—PerfeCta qPCR ToughMix neutralizes problem-causing inhibitors in crude lysates and other difficult samples.

COMPARISON TO CONVENTIONAL MASTER MIXES

PerfeCta qPCR ToughMix stands up to the challenge where other qPCR master mixes fall apart. qPCR is performed on clean template and in the presence of PCR inhibitors with PerfeCta qPCR ToughMix and three relevant competitor's master mixes (Figure 1). Average CT values obtained with PerfeCta ToughMix are unaffected by the presence of the PCR inhibitors while competitor's mixes show signs of inhibition and in some cases fail to amplify.

Table 1

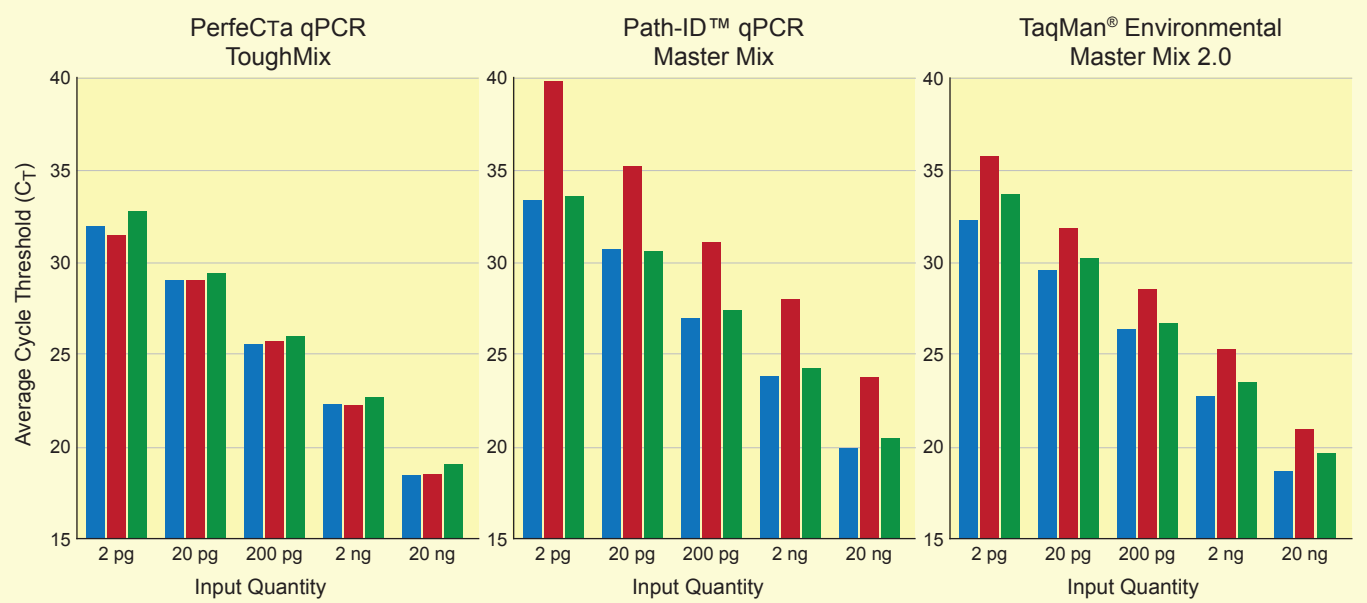
Inhibitor	Common Sources	Reagent Performance	
		Competitor	PerfeCTa ToughMix
Polyphenols	Plant Extracts		✔
Humic Acids	Soil Plant Tissue		✔
Hematin	Dried Blood Blood Spots		✔
Hemoglobin	Blood	✔	✔
Polysaccharides	Feces Plant Tissue		✔
Melanin	Hair Skin		✔

EFFECT OF PCR INHIBITORS ON qPCR OF MYC cDNA

Serial dilutions of qScript cDNA
cDNA alone, cDNA + 1 ug hemoglobin, cDNA + 10 ng/uL humic acid (100 ng/rxn)

■ cDNA Only; ■ cDNA + hemoglobin; ■ cDNA + humic acid

10 –uL reactions; Roche LC480; 384-well
Optimal cycling for TaqMan reagents:
95°C, 10 min: 45 cycles: 95°C, 15s; 60°C, 60s
0.5X MYC (FAM-MGB) TaqMan Gene Expression Assay



PerfeCTa qPCR ToughMix	Slope	r	Int.	Eff.
	-3.365	-0.9989	27.57	98.2%
	-3.267	-0.9970	27.42	102.4%
	-3.420	-0.9988	28.08	96.1%

Path-ID™ qPCR Master Mix	Slope	r	Int.	Eff.
	-3.376	-0.9968	29.07	97.7%
	-3.935	-0.9953	33.93	79.5%
	-3.258	-0.9989	29.32	102.7%

TaqMan® Environmental Master Mix 2.0	Slope	r	Int.	Eff.
	-3.409	-0.9968	28.14	96.5%
	-3.616	-0.9965	30.77	89.0%
	-3.480	-0.9989	28.92	93.8%

ORDERING INFORMATION

PRODUCT	Instrument Compatibility	Quanta Cat. No.	Pack Size
PerfeCTa qPCR ToughMix	Roche LC480, eppendorf (all), Illumina ECO Qiagen/Corbett Rotorgene (all), Bio-Rad (all)	95112-250	250 X 20 ul rxns
		95112-012	1250 X 20 ul rxns
		95112-05K	5000 X 20 ul rxns
PerfeCTa qPCR ToughMix UNG		95138-250	250 X 20 ul rxns
		95138-012	1250 X 20 ul rxns
		95138-05K	5000 X 20 ul rxns
PerfeCTa qPCR ToughMix ROX	ABI 7000, 7300, 7700, 7900 (all) StepOne (all)	95113-250	250 X 20 ul rxns
		95113-012	1250 X 20 ul rxns
		95113-05K	5000 X 20 ul rxns
PerfeCTa qPCR ToughMix UNG ROX		95139-250	250 X 20 ul rxns
		95139-012	1250 X 20 ul rxns
		95139-05K	5000 X 20 ul rxns
PerfeCTa qPCR ToughMix Low-ROX	ABI ViiA7, 7500 Stratagene MX (all) Fluidigm BioMark, AB QuantStudio 12K Flex	95114-250	250 X 20 ul rxns
		95114-012	1250 X 20 ul rxns
		95114-05K	5000 X 20 ul rxns
PerfeCTa qPCR ToughMix UNG Low-ROX		95140-250	250 X 20 ul rxns
		95140-012	1250 X 20 ul rxns
		95140-05K	5000 X 20 ul rxns

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