

Overview

Procedure

A Note on DNA Quantification

Optimized for PCR

Primed for NGS

Reliable dPCR and NGS Results

Dramatic Artifact Reduction

Ordering Information

QIAamp[®] DNA FFPE Advanced Kits

Increase your yield of NGS-ready DNA from FFPE tissues



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The power of double lysis and xylene-free, no-wash deparaffinization

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A Note on DNA Quantification

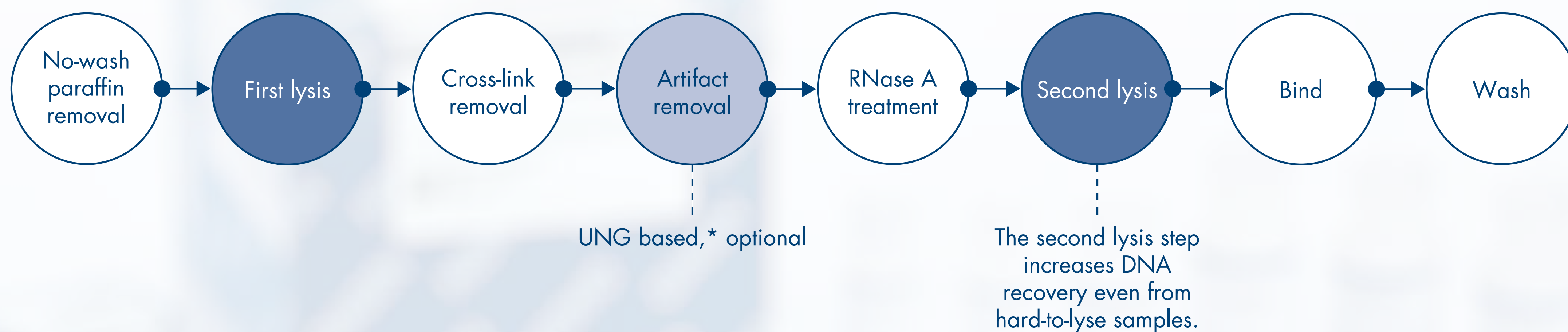
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* Uracil-N-glycosylase (UNG) treatment during DNA sample preparation reduces artifacts caused by cytosine deamination, which commonly occurs in FFPE samples.



Download Quick-Start Protocol

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Did you know...?

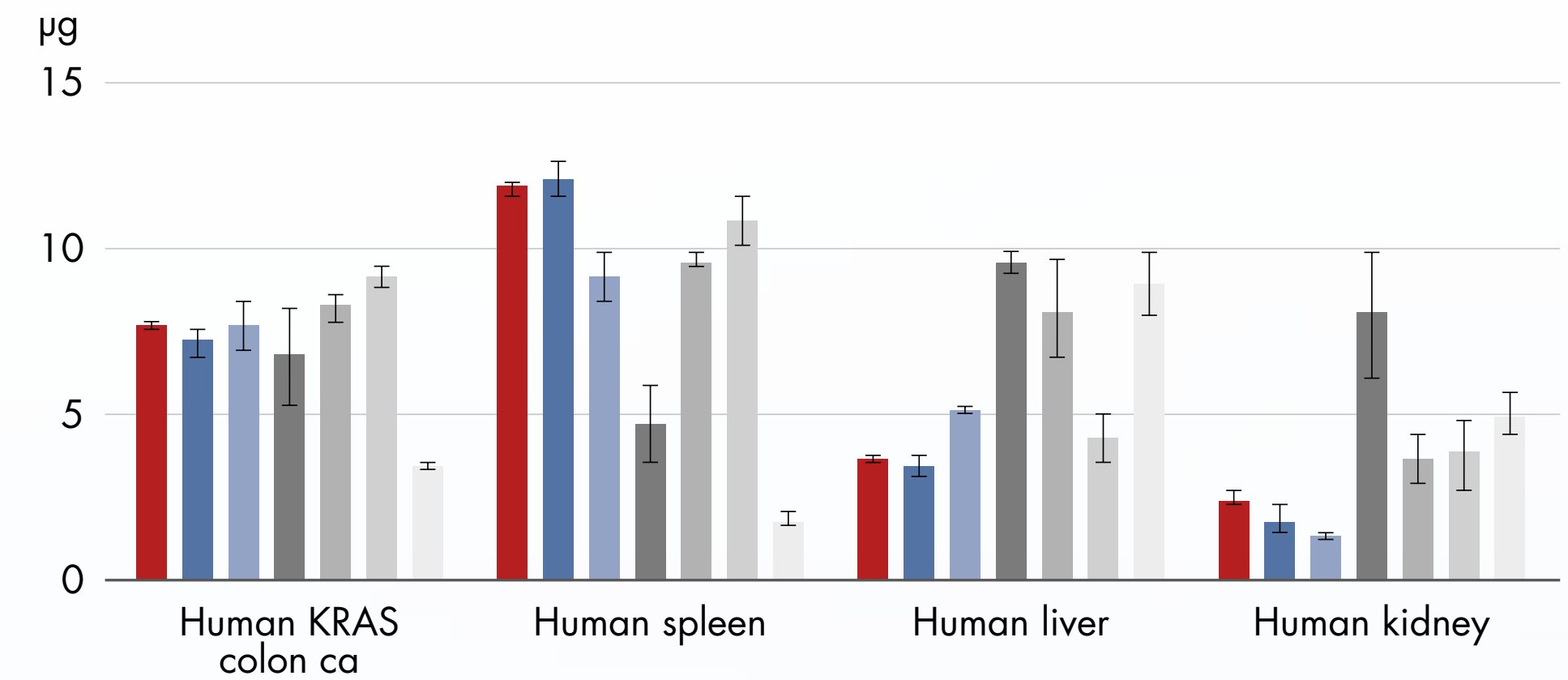
The high temperatures required for cross-link reversal can promote denaturation of dsDNA to ssDNA.

UV-based systems cannot distinguish between dsDNA and ssDNA and may overestimate DNA quantities.

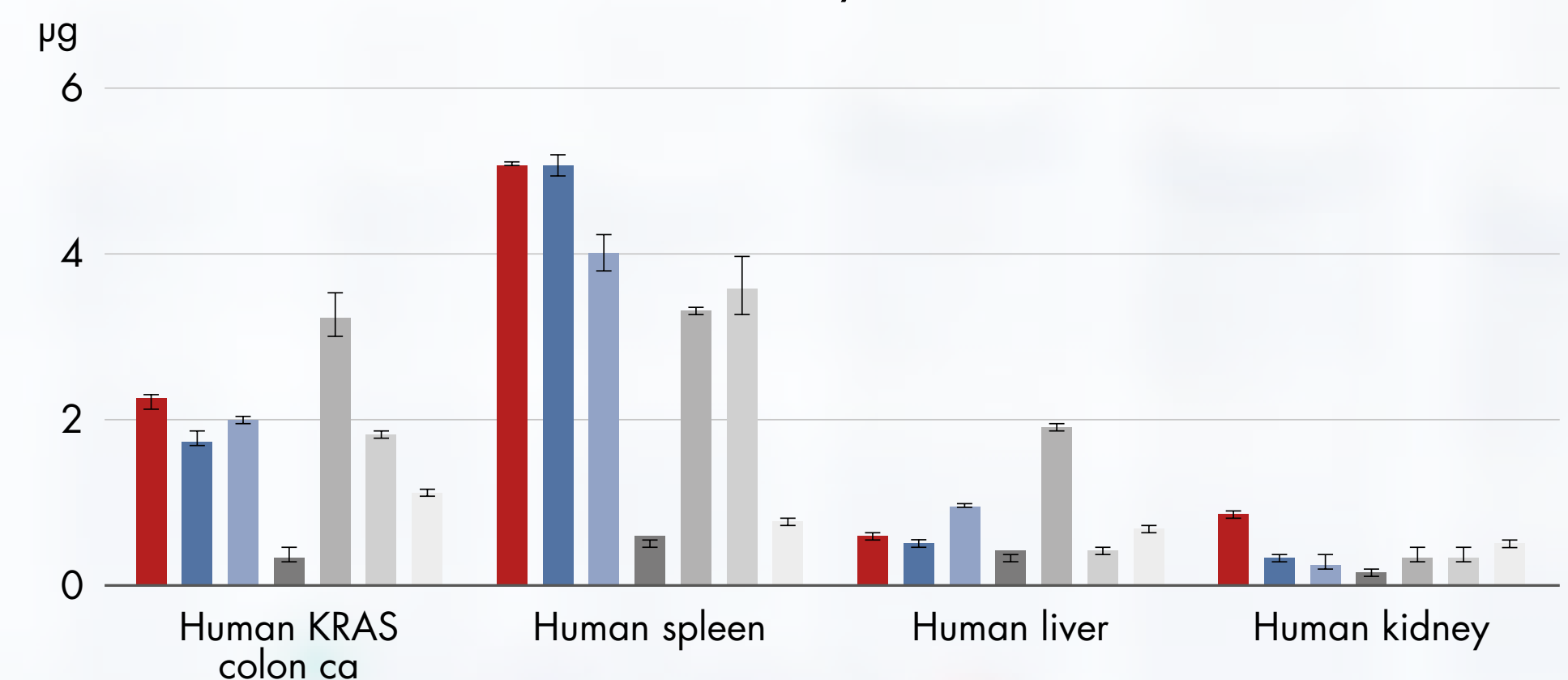
Yield measurements of FFPE samples vary significantly.

Neither UV-vis nor fluorometric values say anything about PCR performance.

UV-vis spectrophotometry



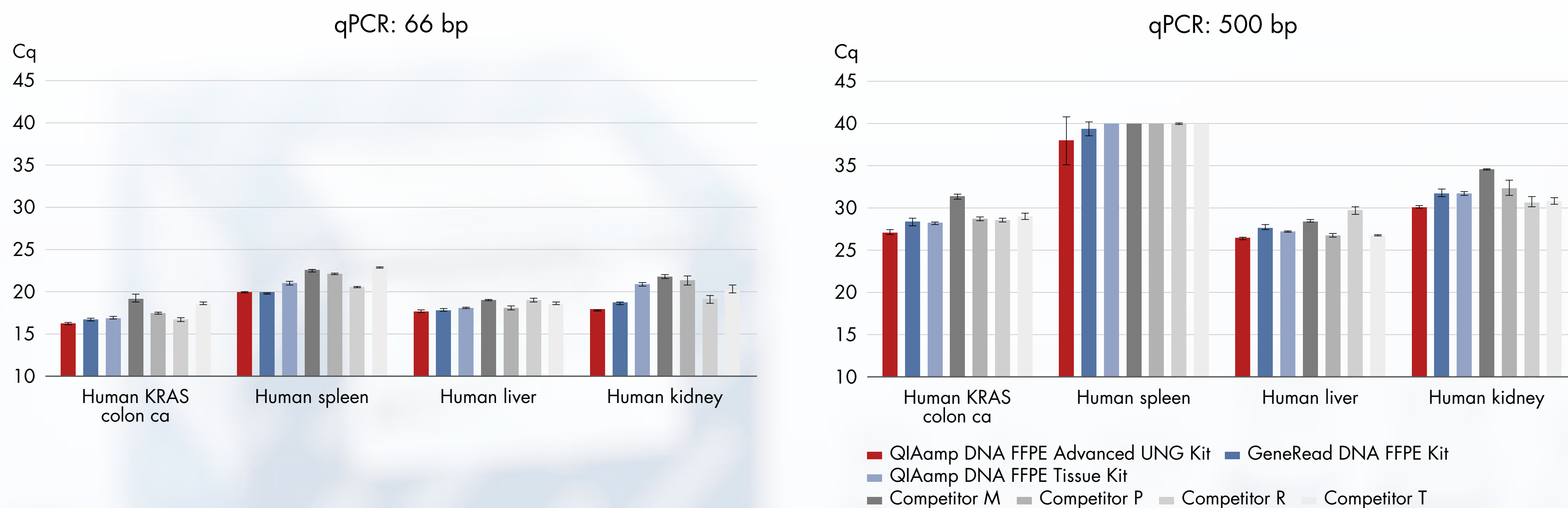
Fluorometry, dsDNA



■ QIAamp DNA FFPE Advanced UNG Kit
 ■ GeneRead DNA FFPE Kit
■ QIAamp DNA FFPE Tissue Kit
■ Competitor M
 ■ Competitor P
 ■ Competitor R
 ■ Competitor T

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It's the qPCR performance that counts!



Consistently lower Cq values than competitor kits – and even QIAGEN kits – regardless of amplicon length.

Reliable NGS data, based on average read fragments*

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Table 1. Samples processed with the QIAamp DNA FFPE Advanced UNG Kit and other QIAGEN FFPE Kits produce reliable NGS data

		QIAamp DNA FFPE Advanced UNG Kit	QIAamp DNA FFPE Tissue Kit	GeneRead DNA FFPE Kit
Human colon carcinoma (KRAS c.34 G>A; p.Gly12Ser, COSM517)	Read fragments total	12,153,790	11,085,380	11,235,177
	Read fragments per UMI, mean	3.8	3.5	3.5
	Mean primer UMI depth	727.79	856.64	891.26
	90th percentile estimated minimum detectible allele fraction (LOD)	0.0179	0.0212	0.0233
Human liver, normal	Read fragments total	9,315,533	10,414,866	13,987,350
	Read fragments per UMI, mean	2.3	3.7	3.2
	Mean primer UMI depth	998.38	646.65	1252.75
	90th percentile estimated minimum detectible allele fraction (LOD)	0.013	0.0167	0.0132

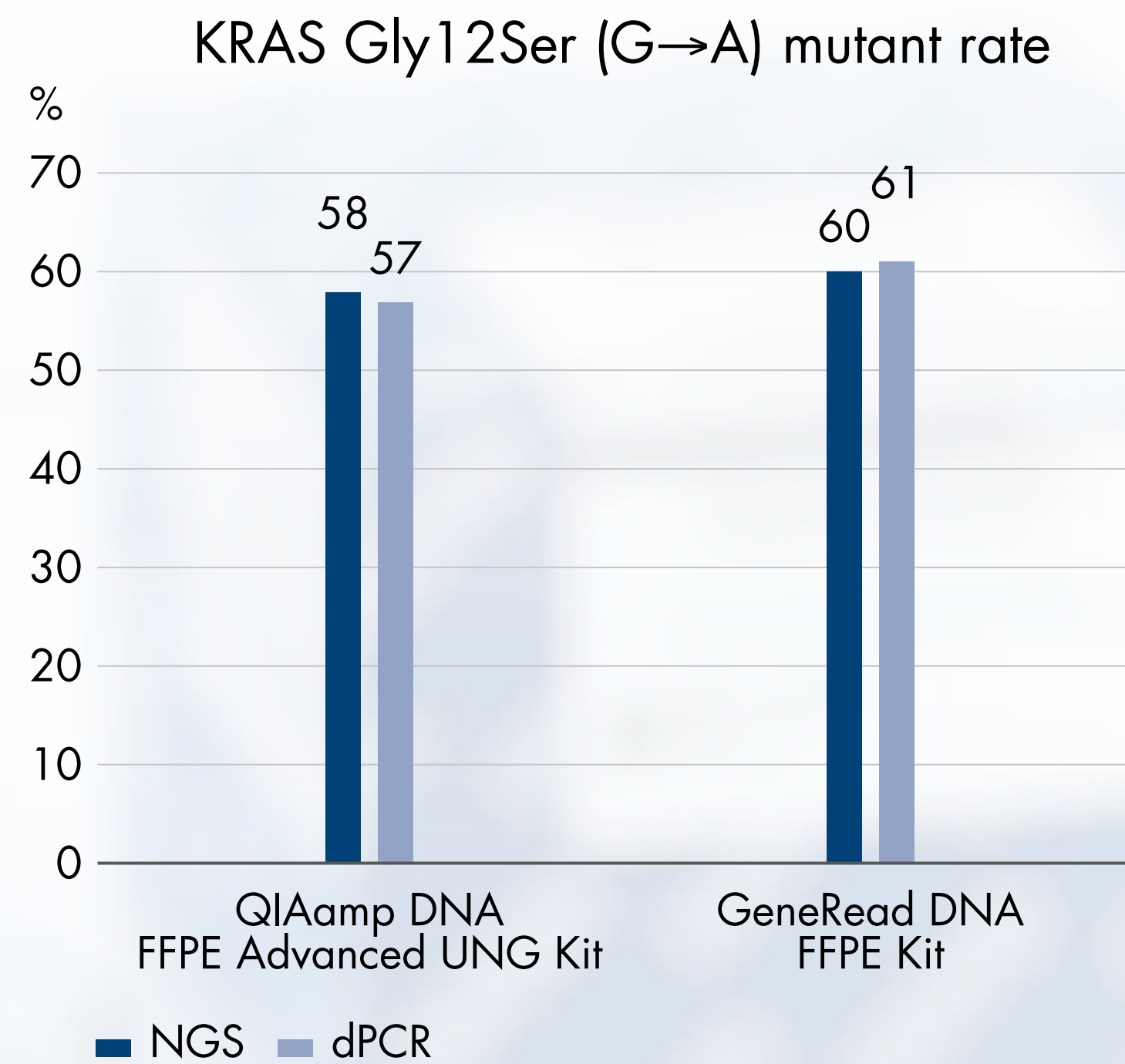


Average read fragments per UMI were within the targeted range of 2–5.

* Read fragments per UMI measures the sequencing depth of unique molecular identifiers (UMIs). UMIs tag individual DNA molecules before amplification; this reduces amplification and increases sensitivity.

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Mutation detection results validated by NGS and dPCR



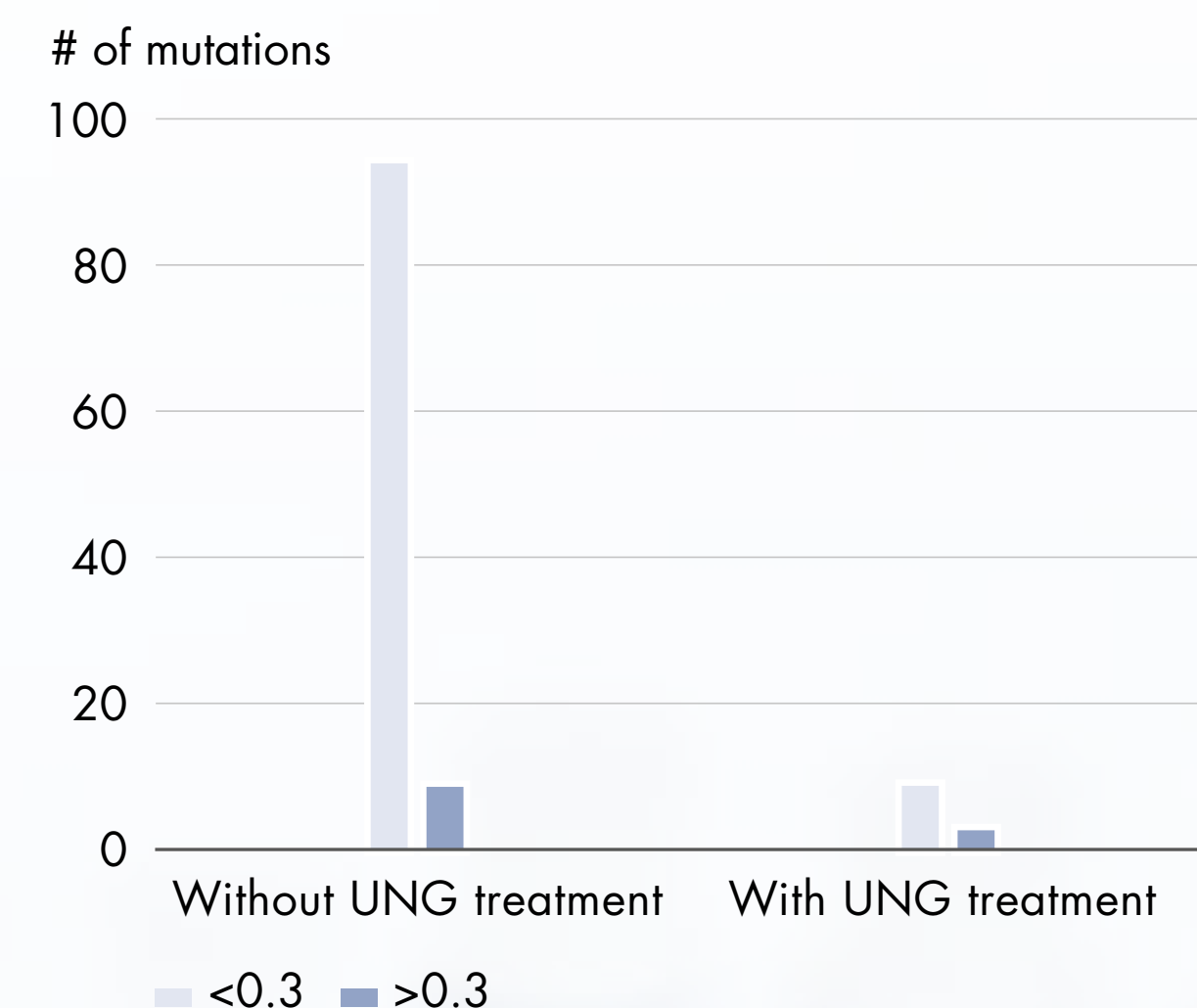
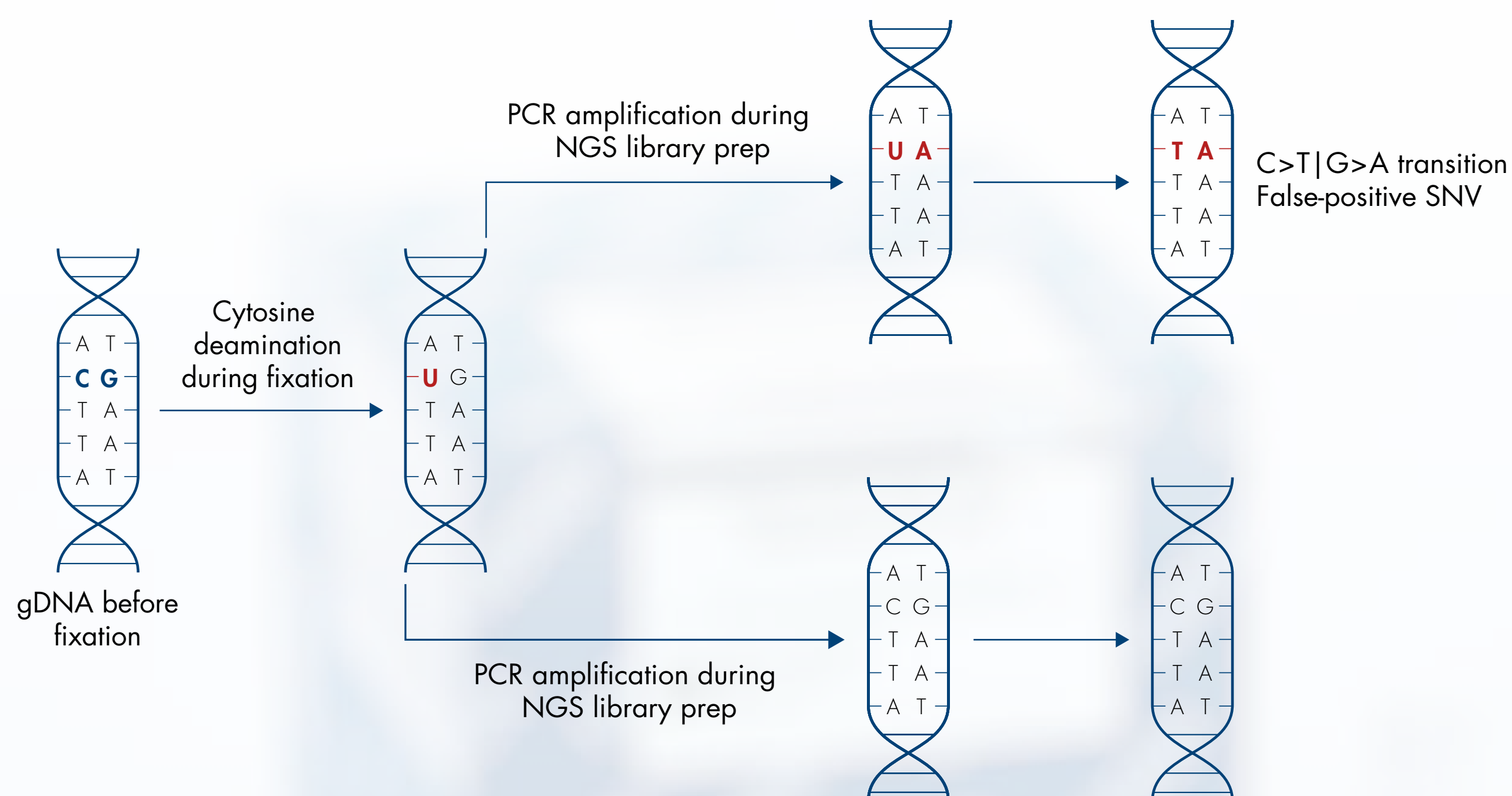
NGS and dPCR were performed on DNA from a human KRAS colon carcinoma FFPE sample isolated using either the QIAamp DNA FFPE Advanced UNG Kit or the GeneRead DNA FFPE Kit.



Both NGS and dPCR technologies detected similar levels of mutation for the samples purified by the two FFPE kits.

Dramatic reduction in artifactual C→T | G→A transitions

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Artificial C→T/G→A transitions commonly occur in FFPE material due to cytosine deamination.

DNA was extracted from liver cancer samples, either with or without UNG treatment.

✓ UNG treatment removed over 90% of low-frequency novel mutations that were most likely to be artifactual.

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Product	Contents	Cat. no.
<u>QIAamp DNA FFPE Advanced Kit (50)</u>	For 50 preps: QIAamp UCP MinElute columns, collection tubes, Deparaffinization Solution, Proteinase K, RNase A, RNase-free water and buffers	56604
<u>QIAamp DNA FFPE Advanced UNG Kit (50)</u>	For 50 preps: Uracil-N-glycosylase, QIAamp UCP MinElute columns, collection tubes, Deparaffinization Solution, Proteinase K, RNase A, RNase-free water and buffers	56704
<u>Uracil-N-Glycosylase (2 x 1 ml)</u>	Artifact removal for NGS; for use with the QIAamp DNA FFPE Advanced Kit	19160

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

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