



# FormaPure Reagent Kits

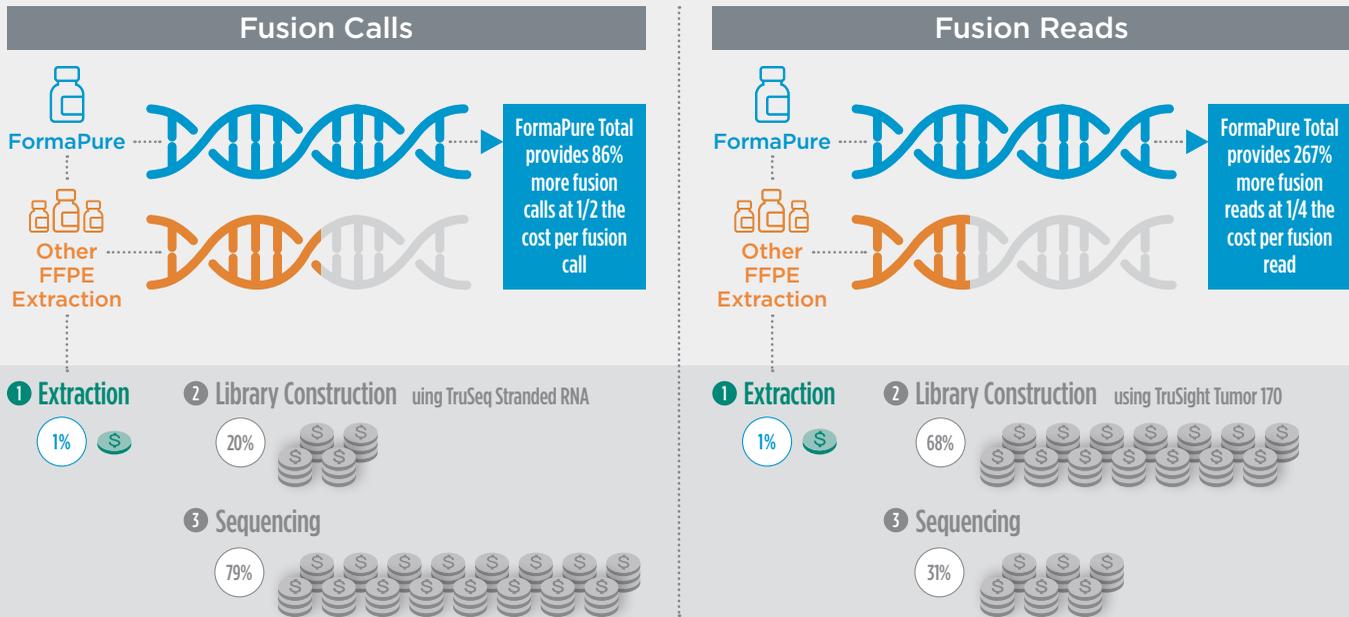
Manual or Automated RNA, DNA or Total Nucleic Acid Extraction from FFPE

Nucleic acid extraction from formalin-fixed, paraffin-embedded (FFPE) tissue is challenging due to the nature of the tissue preparation. FormaPure reagent kits represent a single chemistry system designed and optimized for use in Next-Generation Sequencing (NGS) as well as other downstream applications including qPCR/ddPCR/PCR. Maximizing integrity, yield and purity from an FFPE sample is required to minimize the risk of losing important genetic information.

- Consistent extraction of NGS compatible RNA and/or DNA from a single FFPE sample
- Scalable single chemistry system for manual or automated usage
- Extract higher integrity nucleic acids supporting improved sensitivity for NGS applications

## Don't lose critical data

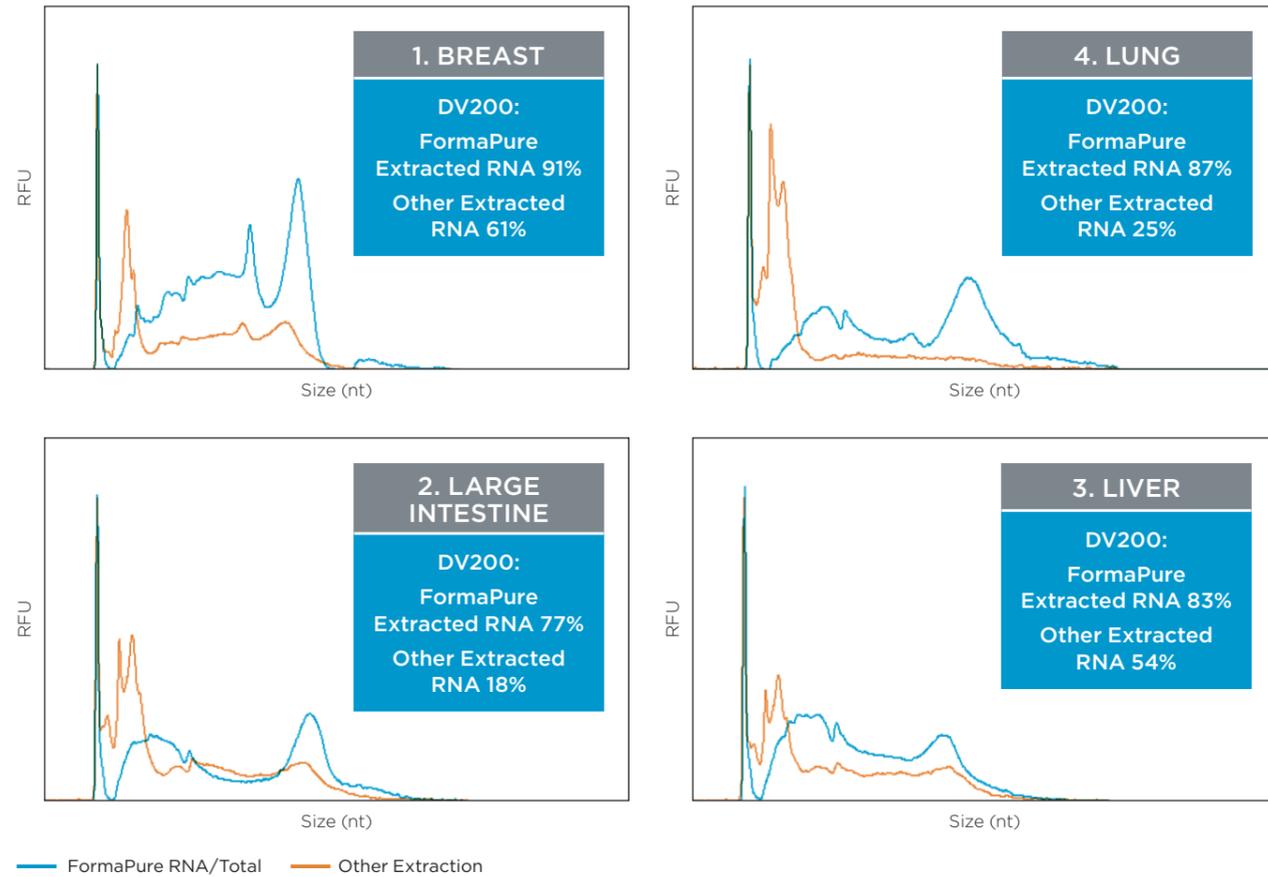
FormaPure reagent kits are the clear choice for nucleic acid extraction from FFPE tissues.



**Figure 1.** Comparative NGS fusion data and relative cost percentages for the workflows using TruSeq Stranded RNA (left) and TruSight Tumor 170 (right) were obtained empirically using reference FFPE tissues. Libraries were sequenced as part of 8- and 16-multiplexed run for TruSeq Stranded RNA and TruSight Tumor 170, respectively.

## FormaPure RNA and FormaPure Total

NGS Performance starts with RNA integrity. Fragment analysis shows FormaPure Reagent kits retain the best possible RNA integrity even with 10+ year old tissue blocks



**Figure 2.** FormaPure RNA isolates RNA with superior integrity. Fragment analyses were performed with RNA isolated with FormaPure RNA (blue traces) and an alternative method (orange traces) from four different FFPE sample types. All extractions were performed with one 10 µm curl. DV200 values are presented for each of the chromatograms. DV200 values represent the percentage of RNA fragments > 200 nucleotides.

## FormaPure DNA and FormaPure Total

FormaPure DNA maintains detectability of low frequency variants without introducing extraction based experimental bias. DNA extracted using FormaPure DNA is suitable for the most stringent downstream applications including NGS.

FormaPure DNA and FormaPure Total provide:

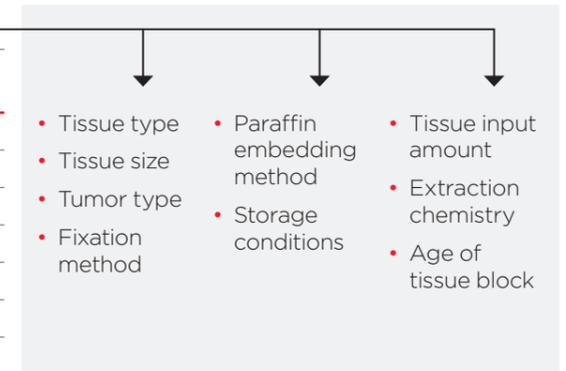
- Consistent and efficient extraction performance
- Simple workflow with minimal hands-on time
- Proven compatibility with NGS and other downstream applications
- Flexibility to accommodate sample input variation

### Next-Generation Sequencing Compatibility

Position	Gene	FormaPure DNA samples with variant call (max 6)	FormaPure DNA Variant Freq (%)	Expected Allelic Freq (%)
140453136	BRAF	6	12.2	10.5
55599321	KIT	6	9.2	10
55242464	EGFRΔ	6	1.8	2
55259515	EGFR	6	3.1	3
55241707	EGFR	6	25	24.5
25398281	KRAS	6	13.7	15
25398284	KRAS	6	5.3	6
115256530	NRAS	6	17.2	12.5
178952085	PIK3CA	6	17.5	17.5
178936091	PIK3CA	6	9.1	9

### Nucleic acid yields are determined by the following variables

Tissue Type	Block Age (Years)	Number of Curls	RNA Yield (ng)	DNA Yield (ng)
Breast*	>10	7	845	313.9
Liver	>10	3	580	1134
Lung	>10	3	376	951
Stomach*	>10	5	3102	9478
Stomach*	>10	7	6565	11356
Colon*	>10	5	1665	545
Colon*	>10	7	4528	1356



\*Using FormaPure XL. FormaPure XL was used for the >10 year old breast tissue because of the advanced age of the tissue. The results here suggests that for tissue of advanced age FormaPure XL would be the recommended product. FormaPure XL was used with the stomach and colon tissue due the difficulties associated with extraction from stomach tissue and due to the increased amount of input.

## Workflow



Formapure Total, RNA and DNA are a flexible set of extraction kits suitable for manual or automated workflows.

- Scalable based on throughput
- Quick transition with ready-to-implement methods
- Knowledgeable support for reagents, automation and methods from a single vendor

		FormaPure XL Total		FormaPure XL DNA		FormaPure XL RNA		
		Manual	Auto-mated	Manual	Auto-mated	Manual	Auto-mated	
Batch Size	8	Hands-on Time	3.5	0.5	1	0.5	2	0.5
		Total Time	6.5	6	3.5	5.25	4.5	5
	24	Hands-on Time	4	0.5	1.5	0.5	2.5	0.5
		Total Time	7	6.25	4	5.5	5	5
	48	Hands-on Time	NR	0.5	NR	0.5	NR	0.5
		Total Time	NR	6.5	NR	5.5	NR	5.5
	96	Hands-on Time	NR	0.5	NR	0.5	NR	0.5
		Total Time	NR	6.75	NR	5.75	NR	5.5

Table 1. Estimated hands-on time and total time in hours, required to perform 8, 24, 48 and 96 FormaPure Total, RNA or DNA nucleic acid extractions, The methods can be performed either manually or automated on a liquid handling system. Data represented in this table is based on a Biomek i5 Multichannel 96 Genomics Workstation. Difference in time between manual and automation is indicated. NR= Not recommended.

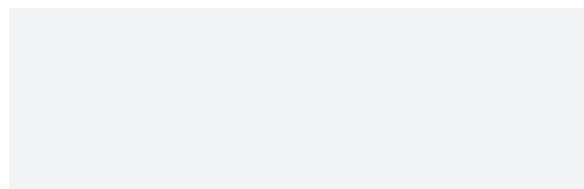
FormaPure Total		
Part No	Name	Preps
C16675	FormaPure Total	50
C16676	FormaPure Total	96
C35991	FormaPure XL Total	50
C35992	FormaPure XL Total	96

FormaPure RNA		
Part No	Name	Preps
C19157	FormaPure RNA	50
C19158	FormaPure RNA	96
C36000	FormaPure XL RNA	50
C36001	FormaPure XL RNA	96

FormaPure DNA		
Part No	Name	Preps
B89230	FormaPure DNA	50
B89231	FormaPure DNA	96
C35996	FormaPure XL DNA	50
C35997	FormaPure XL DNA	96

FormaPure reagent kits are available in multiple kit sizes and extraction types based on your application and throughput needs. Contact your local sales representative or visit [beckman.com](http://beckman.com) to request a quote.

For more information, please contact:



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