

# SureSelect<sup>XT</sup> Low Input Target Enrichment



## What Is It?

SureSelect<sup>XT</sup> Low Input is a low-input, FFPE-optimized library preparation kit. Now with 192 sample barcodes, it is the newest of Agilent's SureSelect hybrid-capture based target enrichment solutions for NGS.

### Key features

- 10 ng of input DNA
- Optimized for high-quality intact DNA, low- and high-quality FFPE DNA
- 90-minute hybridization and master-mixed reagents for faster, more efficient workflow
- Molecular barcode (MBC) tagged libraries increase positive predictive value (optional)
- 96 unique dual sample indexes to minimize index hopping (optional)
- Optional enzymatic fragmentation module for more flexibility
- Automation available

## Low Input

### The need for a low input solution

Researchers are often faced with limited amounts of DNA from fresh frozen or FFPE of varying quality. A robust library prep is needed to ensure quality results from these valuable samples. SureSelect<sup>XT</sup> Low Input enables target enrichment of as little as 10 ng to 200 ng of DNA in just a day. With master-mixed reagents, you can process samples more efficiently and pool up to 192 samples per sequencing run.

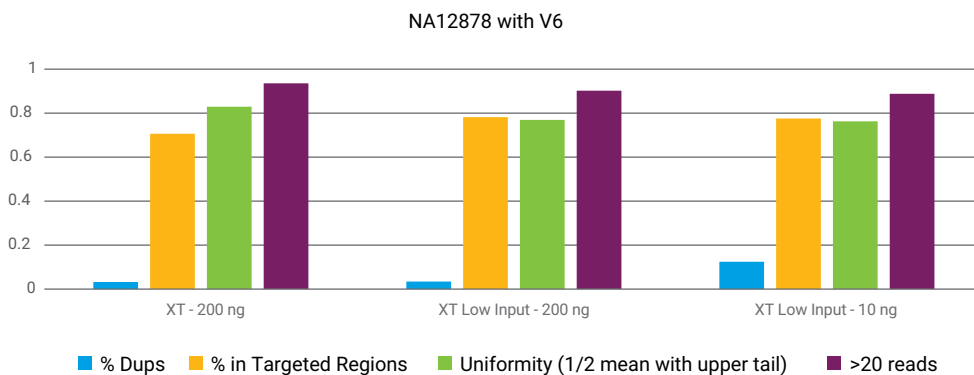


Figure 1. SureSelect<sup>XT</sup> Low Input provides the same high-quality libraries at both 10 ng and 200 ng of input DNA.

# FFPE Optimized

## The importance of an FFPE-optimized library prep

While FFPE samples provide a valuable source of diverse genetic information, one of the hurdles in isolating DNA from FFPE tissue is the purification of DNA of sufficient molecular weight and quality for amplification and detection. Typically, by the time FFPE DNA is prepared for library generation, it is too degraded for high-sensitivity NGS. It is thus crucial to optimize the library preparation and minimize the number of steps to reduce sample loss and achieve high-quality libraries from challenging sample types.

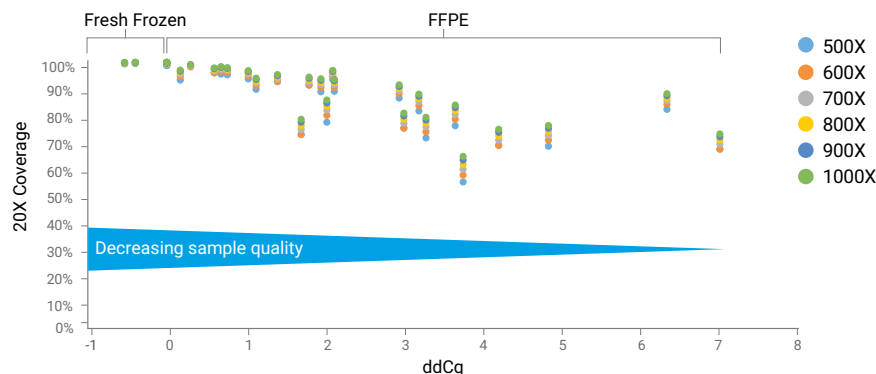
## FFPE-optimized library prep from Agilent

SureSelect<sup>XT</sup> Low Input produces more complex libraries with a higher percentage of reads in targeted regions for a wide range of tissue types—in both fresh and FFPE samples. To improve single nucleotide variant (SNV) calling and consistency across FFPE samples of varying quality, Agilent has developed a complete workflow solution that features DNA pre-qualification (FFPE QC Kit, PN G9700A and G9700B and 4200 TapeStation System) and one-tube library preparation.

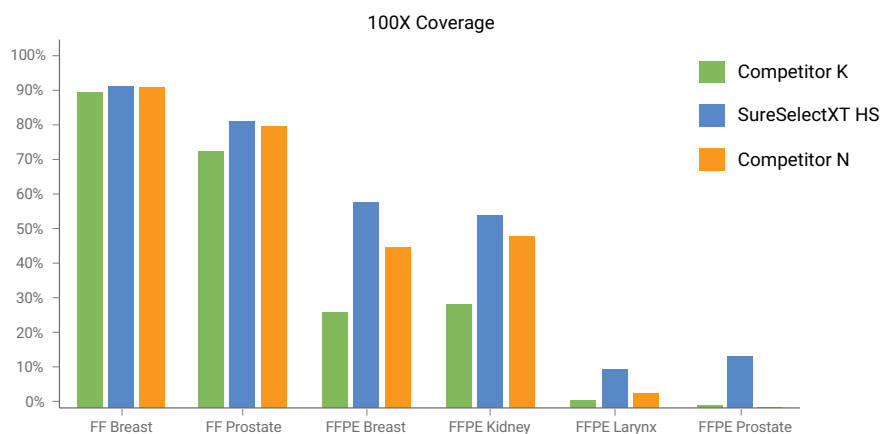


### Advantages

- Improve SNV calling from FFPE DNA
- Reduce the number of library preparation steps, preventing DNA loss
- Prepare higher complexity libraries from both low- and high-quality DNA



**Figure 2.** SureSelect<sup>XT</sup> Low Input optimized performance for FFPE with the majority of bases covered at 20X across decreasing sample quality. % bases covered by at least 20X read depth with increasing sequencing depth (4-8 million - 2x100 bp reads) is plotted against gDNA quality (qPCR-based gDNA quality (ddCq) and is calculated using Agilent's FFPE QC Assay kit).



**Figure 3.** SureSelect<sup>XT</sup> Low Input outperforms other library prep solutions at 100X coverage, especially as sample quality decreases: % bases covered by at least 100X read depth is plotted against gDNA of decreasing quality (qPCR-based gDNA quality (ddCq) and is calculated using Agilent's FFPE QC Assay kit (based on 1000X sequencing depth with 8 million - 2x100bp reads).

# Streamlined Workflow

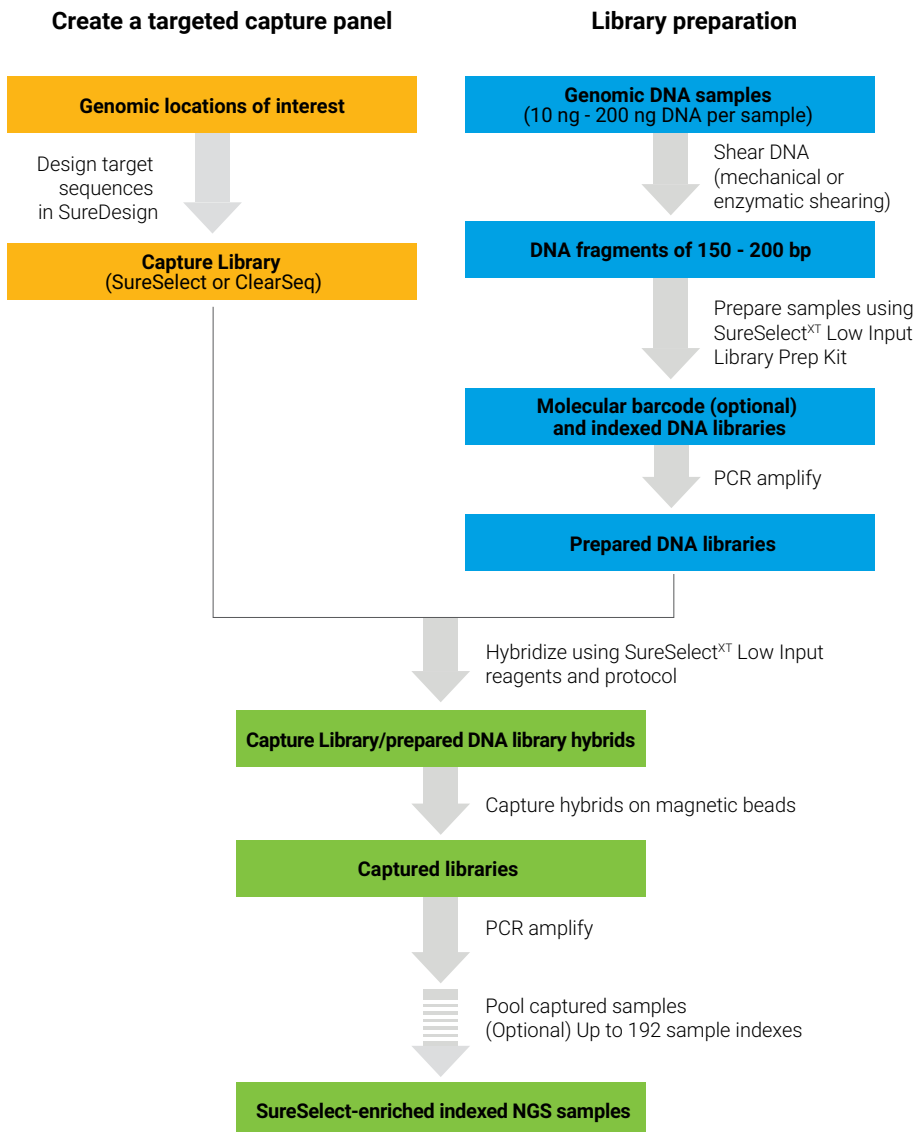
## Expedite analysis with a streamlined workflow

SureSelect<sup>XT</sup> Low Input reduces the number of individual enzymatic steps, clean-up steps and sample transfers, allowing users to streamline and maintain library complexity, especially at lower input amounts. Agilent delivers the fastest hybridization on the market. Our 90-minute hybridization, combined with more efficient processing with master-mixed reagents, enables users to go from samples to sequencing-ready libraries in one day. Additionally, you can now pool up to 192 enriched libraries.



### Advantages

- Process samples faster and more efficiently with a 90-minute hybridization and master-mixed reagents
- Transform samples into sequencing-ready libraries in less than one day
- Streamline data analysis with the Agilent SureCall software



# SureSelect Library Prep & Target Enrichment Solution

Agilent has a wide variety of library prep and target enrichment solutions that suit both cancer and constitutional applications. Starting with as little as 10 ng, or as much as 3 ug of DNA, there is a library prep and target enrichment solution that works seamlessly with a ClearSeq Panel, a SureSelect Exome or a Custom Panel.



**Table 1.** SureSelect library prep solutions for cancer and constitutional applications.

Product Name	SureSelect <sup>XT HS</sup>	SureSelect <sup>XT Low Input</sup>	SureSelect <sup>XT</sup>	SureSelect <sup>XT2</sup>	SureSelect <sup>QXT</sup>
DNA Input	10 ng - 200 ng	<b>10 ng - 200 ng</b>	200 ng - 3 µg	100 ng - 1 µg	50 ng
Turnaround Time	8 hr	<b>8 hr</b>	1.5 day	1.5 day	7 hours
Covaris Needed	Yes	<b>Yes</b>	Yes	Yes	No
Library Complexity	Highest	<b>Highest</b>	High	Medium	Medium
Unique Features	<ul style="list-style-type: none"> <li>- FFPE optimized</li> <li>- Enzymatic shearing (optional)</li> <li>- Molecular barcodes</li> <li>- Mastermixed reagents</li> <li>- Samples indexed prior to capture eliminating concern of cross sample contamination</li> </ul>	<ul style="list-style-type: none"> <li>- <b>FFPE optimized</b></li> <li>- <b>Enzymatic shearing (optional)</b></li> <li>- <b>Molecular barcodes (optional)</b></li> <li>- <b>Unique dual sample indexes (optional)</b></li> <li>- <b>Mastermixed reagents</b></li> <li>- <b>Samples indexed prior to capture eliminating concern of cross sample contamination</b></li> <li>- <b>Automation available</b></li> </ul>	<ul style="list-style-type: none"> <li>- Compatible with FFPE samples</li> <li>- Robust variant identification</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-capture pooling</li> <li>- Mastermix reagents</li> </ul>	<ul style="list-style-type: none"> <li>- Transposase-based</li> <li>- Mastermix reagents</li> <li>- Whole genome sequencing and target enrichment compatible</li> <li>- For intact DNA only</li> </ul>
Key Benefits	High sensitivity for ≤1% VAF	<b>Unique dual sample indexes and automation</b>	High-complexity libraries for rare allele detection	Cost-effective	Covaris-free workflow

Ordering information

Product Description	Part Number
<b>96 Reactions</b>	
SureSelectXT Low Input Reagent Kit, Index 1-96	G9703A
SureSelectXT Low Input Reagent Kit, index 1-96 + 1-499 kb Target Enrichment Baits, 96 rxn	G9707A
SureSelectXT Low Input Reagent Kit, index 1-96 + 0.5-2.9 Mb Target Enrichment Baits, 96 rxn	G9707B
SureSelectXT Low Input Reagent Kit, index 1-96 + 3-5.9 Mb Target Enrichment Baits, 96 rxn	G9707C
SureSelectXT Low Input Reagent Kit, index 1-96 + 6-11.9 Mb Target Enrichment Baits, 96 rxn	G9707D
SureSelectXT Low Input Reagent Kit, index 1-96 + 12-24 Mb Target Enrichment Baits, 96 rxn	G9707E
SureSelectXT Low Input Reagent Kit, index 1-96 + ClearSeq Comprehensive Cancer Target Enrichment Baits, 96 rxn	G9707G
SureSelectXT Low Input Reagent Kit, index 1-96 + Clinical Research Exome v2 Target Enrichment Baits, 96 rxn	G9707H
SureSelectXT Low Input Reagent Kit, index 1-96 + Clinical Research Exome v2 Plus Target Enrichment Baits, 96 rxn	G9707J
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon v6 Target Enrichment Baits, 96 rxn	G9707K
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon v6 Plus Target Enrichment Baits, 96 rxn	G9707L
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon v6+UTR Target Enrichment Baits, 96 rxn	G9707M
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon V7 Target Enrichment Baits	G9707N
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon V7 Plus 1 Target Enrichment Baits	G9707P
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon V7 Plus 2 Target Enrichment Baits	G9707Q
SureSelectXT Low Input Reagent Kit, Index 97-192	G9703B
SureSelectXT Low Input Reagent Kit, index 97-192 + 1-499 kb Target Enrichment Baits, 96 rxn	G9708A
SureSelectXT Low Input Reagent Kit, index 97-192 + 0.5-2.9 Mb Target Enrichment Baits, 96 rxn	G9708B
SureSelect XT Low Input Reagent Kit, index 97-192 + 3-5.9 Mb Target Enrichment Baits, 96 rxn	G9708C
SureSelectXT Low Input Reagent Kit, index 97-192 + 6-11.9 Mb Target Enrichment Baits, 96 rxn	G9708D
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SureSelectXT Low Input Reagent Kit, index 97-192 + Human All Exon v6+UTR Target Enrichment Baits, 96 rxn	G9708M
SureSelectXT Low Input Reagent Kit, index 97-192 + Human All Exon V7 Target Enrichment Baits	G9708N
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SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon v6 Plus Target Enrichment Baits, 96 rxn, Auto	G9507L
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon v6+UTR Target Enrichment Baits, 96 rxn, Auto	G9507M
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon V7 Target Enrichment Baits, Auto	G9507N
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon V7 Plus 1 Target Enrichment Baits, Auto	G9507P
SureSelectXT Low Input Reagent Kit, index 1-96 + Human All Exon V7 Plus 2 Target Enrichment Baits, Auto	G9507Q

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SureSelectXT Low Input Reagent Kit, index 97-192 + Human All Exon V7 Plus 1 Target Enrichment Baits, Auto	G9508P
SureSelectXT Low Input Reagent Kit, index 97-192 + Human All Exon V7 Plus 2 Target Enrichment Baits, Auto	G9508Q

Product Description	Part Number
SureSelect XT Low Input Dual Index P5 Indexed Adapters 1-96 for ILM	5191-4056
SureSelect XT HS and XT Low Input Enzymatic Fragmentation Kit, 96 Reactions	5191-4080

Learn more:

[www.agilent.com/genomics/xtlowinput](http://www.agilent.com/genomics/xtlowinput)

U.S. and Canada

**1-800-227-9770**

[agilent\\_inquiries@agilent.com](mailto:agilent_inquiries@agilent.com)

Europe

[info\\_agilent@agilent.com](mailto:info_agilent@agilent.com)

Asia Pacific

[inquiry\\_lsca@agilent.com](mailto:inquiry_lsca@agilent.com)

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