FFPE Rescue - Lab Services

LABSERVICES
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Analyze FFPE samples with low tumor cellularity

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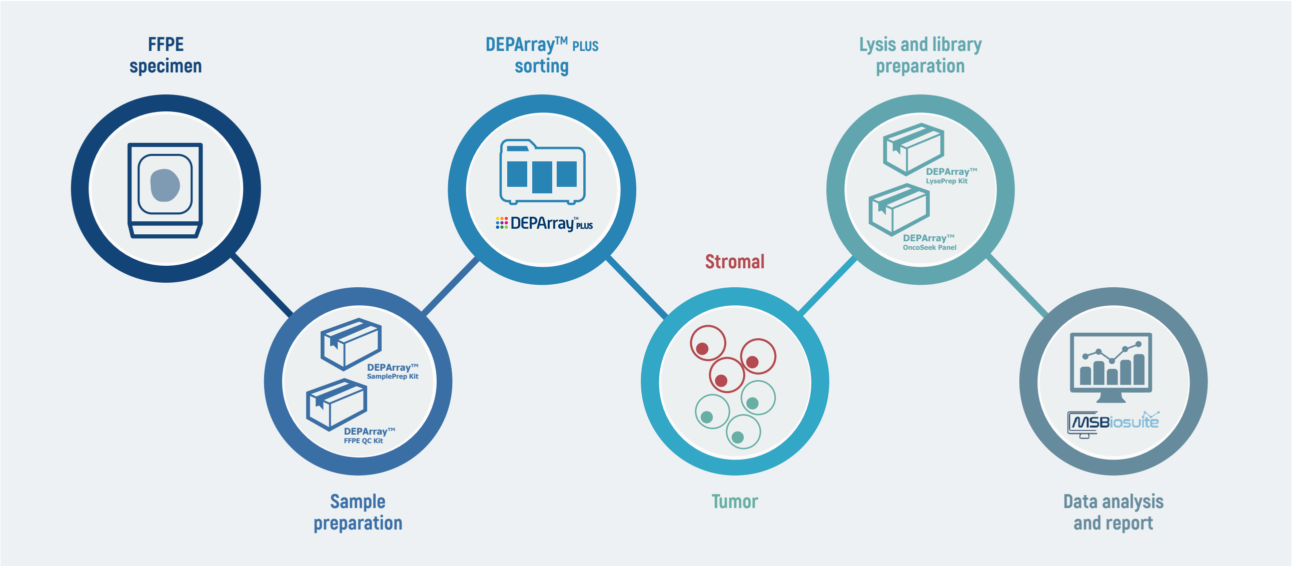
Analyze ANY FFPE sample

NGS analysis of FFPE samples is becoming more widespread in pathology laboratories due to the increasing requirement to identify actionable genes linked to therapeutic targets. DNA tumor content is a critical factor to obtain good data. **However not all FFPE samples are suitable for molecular analysis.**

DEPArray™ PLUS offers an unprecedent opportunity to overcome the problem of low tumor cellularity in FFPE samples by isolating tumor cells and stromal cells. Recovered cells are used for subsequent downstream analysis, enabling accurate and sensitive molecular characterization.

Our FFPE Rescue workflow

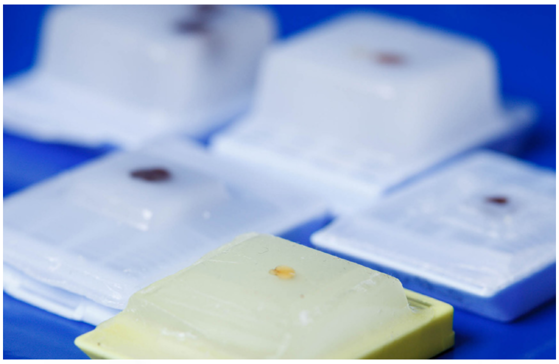


Process samples with less than 5% of tumor cellularity

The failure rate for molecular testing of FFPE samples is more than 8% according to internal market research.

Low tumor content is the primary driver of failed FFPE samples (accounting for 80% of failures as opposed to poor quality of DNA.

Thanks to **DEPArray™ PLUS** you can now RESCUE samples that were discarded in routine pathology labs.



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How low can we go with DEPArray FFPE Application?

Four cancer FFPE tissue sections, which were considered not suitable for standard NGS analysis due to low tumor cell content, were successfully analyzed with the **DEPArray FFPE Rescue Workflow.**

Small groups of tumor cells were sorted with DEPArray and subsequently analyzed by NGS using **DEPArray OncoSeek Panel.** Hotspot mutations were identified in the four tumor samples as reported in the table below.

Tumor	Breast	Breast	Lung	Lung				
Sample	1	2	3	4				
N cells	100	178	113	208				
Reads	2.535.672	1.656.682	995.888	978.912				
Coverage	2.413	1.419	1.028	1.106				
Gene					**Hotspot**	**Variant-type**	**Effect**	**Var**
TP53	92,88	0,00	0,00	0,00	True	SNV	Stop_gained	**chr17:7577142:C:A**
PIK3CA	57,18	0,00	0,00	0,00	True	SNV	Missense_variant	**chr3:178936091:G:A**
TP53	0,00	85,12	0,00	0,00	True	SNV	Missense_variant	**chr17:7578551:A:G**
PTEN	0,00	50,38	0,00	0,00	False	Deletion	Frameshift_variant	**chr10:89690819:TA:-**
EGFR	0,00	0,00	36,86	0,00	True	Deletion	Frameshift_variant	**chr7:55242468:ATTAAGAGAAGCAAC:-**
TP53	0,00	0,00	0,00	29,12	True	SNV	Missense_variant	**chr17:7577548:C:T**

DEPArray™ PLUS

The table presents the variant frequencies detected in small tumor cells populations obtained with DEPArray sorting.

***DEPArray FFPE Rescue Application** allowed identification of putative actionable mutations in FFPE that were discarded due to low tumor cellularity.*

KEY BENEFITS

Powerful

Analyze any FFPE sample regardless of its tumor cellularity (%).

Precise

Succesfully sort small groups of 100-300 cells for NGS analysis.

Easy

Obtain precise information on tumor mutations in a comprehensive report.

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Target sequencing of FFPE sorted populations

DEPArray OncoSeek Panel is conceived for the preparation of high-quality targeted NGS libraries from FFPE cell populations isolated with the DEPArray technology and for the simultaneous detection of single nucleotide variants (SNVs), insertion-deletion (indels) and copy number alterations (CNAs) from 63 oncology relevant genes. Starting from a very low amount of input DNA you can analyze around 100-300 FFPE cells.

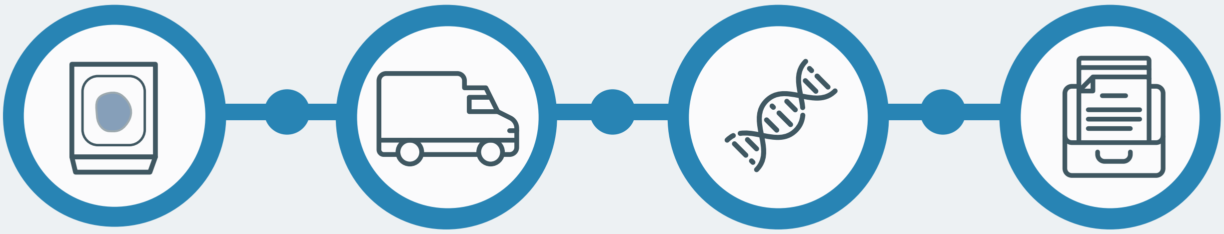
ABL1	5	CDK4	10	ERBB4	8	GNA11	2	KDR	9	MYCN	9	RET	6
AKT1	12	CDK6	10	EXH2	1	GNAQ	2	KIT	24	NOTCH1	3	SMAD4	10
ALK	12	CDKN2A	2	FBXW7	6	GNAS	2	KRAS	11	NPM1	1	SMARCB1	4
APC	9	CSF1R	2	FGFR1	12	HNF1A	4	MAP2K1	5	NRAS	3	SMO	5
AR	10	CTNNB1	1	FGFR2	13	HRAS	2	MET	16	PDGFRA	13	SRC	1
ATM	19	DDR2	1	FGFR3	14	IDH1	1	MLH1	1	PIK3CA	19	STK11	5
BRAF	12	DNMT3A	1	FGFR4	9	IDH2	2	MPL	1	PTEN	14	TP53	21
CCND1	8	EGFR	19	FLT3	4	JAK2	2	MSH6	4	PTPN11	2	TSC1	1
CDH1	3	ERBB2	14	FOXL2	1	JAK3	3	MYC	9	RB1	12	VHL	3

🟦 Genes with contiguous, overlapping coverage
Genes with amplicons for CNA calling and SNV calling

🟧 Genes with comprehensive coding exon
Genes with only amplicons for CNA calling

DEPArray™ PLUS FFPE Rescue - Lab Services

You can now access FFPE Rescue Application through our Lab Services



Low cellularity FFPE sample

Sample shipment

Sample testing

Genetic information report*

*The report provided by MSB is intended for Research Use Only

EU Shipping address

Send the package to the following address:
Menarini Silicon Biosystems S.p.A.
Via Giuseppe di Vittorio, 21 b/3 40013 Castel Maggiore (BO) ITALY

USA Shipping address

Send the package to the following address:
Menarini Silicon Biosystems Inc.
3401 Masons Mill Rd., Suite 100 - Huntingdon Valley, PA 19006

Menarini Silicon Biosystems Spa

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