Cerba Research

Genomics Services at Cerba Research

With An Oncology Focus

Cerba Research

Cerba Research Offers a Broad Range of Genomics Solutions to Support your Trial

Cerba Research is committed beside you with the most insightful and state-of-the-art genomics technology platforms. At Cerba Research, we have optimized our genomics workflow and support through scientific expertise to unleash the full potential of your therapeutic agent and advance your clinical trial.

From custom panel development to data delivery, Cerba Research is willing to tailor your genomics assay from the very beginning.

An integrated team of project managers, subject matter experts, and experienced scientists dedicated to your study will ensure that the genomics biomarkers for your clinical trial are fully supported from start to finish!

Fully Automated Nucleic Acids Extraction Platforms

Cerba Research can ensure extraction of nucleic acid (RNA/DNA/ctDNA/cfDNA) from the following sample types:

- Body fluids (feces, scrapes/smears/swabs in collection medium)
- Bone marrow aspirates
- BMMCs
- Buffy Coat
- Core needle biopsies
- FFPE tissue
- Liquid biopsies (ctDNA/cfDNA)
- Fine needle aspirates
- Flash frozen biopsies
- PBMCs
- Plasma/Serum (could be frozen EDTA plasma)
- Punch biopsies
- Whole blood

And a full range of instruments for an automated workflow

- Promega MaxPrep
- Promega Maxwell RCS 48
- Perkin Elmer Janus G3
- Perkin Elmer Chemagic

Full Spectrum of Capabilities for Clinical Genomics Endpoints

- Next Generation Sequencing (NGS)
- qPCR
- ddPCR
- Nanostring™ (nCounter® and GeoMx®)

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Wide Range of Comprehensive Platforms for your NGS Needs

Cerba Research has experience in a variety of NGS applications, including the following:

- **Solid tumors:** Targeted panels for somatic oncology in solid tumors including, but not limited to, our OncoSign, OncoSign ctDNA and OncoSign 600+ broad panel assays. These panels cover alterations with established, emerging and exploratory value across lung, ovarian, breast, colon, melanoma, bladder, GIST, rare tumors and more
- **Liquid tumors:** Targeted panels for somatic oncology in hematological malignancies. These panels cover mutations with established and emerging value for myeloproliferative neoplasms, chronic myelomonosystic leukemia, myelodysplastic syndroms, acute myeloid leukemia (AML) and more
- **Hereditary cancers:** Oncogenetic panels for hereditary cancers, such as the OncoStar, cover mutations within breast, ovarian, prostate, colon, GI, pancreatic, kidney, neuroendocrine tumors and more
- **Rare disorders:** Germline sequencing such as, but not limited, to BRCA1/BRCA2 with more than 100 off the shelf panels available for numerous rare disorders
- **Constitutional genomics:** Whole exome sequencing (WES) for your constitutional genomic assessments
- **Pathogens identification:** Whole genome sequencing (WGS) for various pathogens identification
- **Viral & Microbiome sequencing:** Various sample type may be analyzed, including but not limited to feces
- **Translocations & Fusions:** With RNA-based NGS sequencing, targeted FISH and IHC screening
- **Cell & Gene therapy:** TCR/BCR immune repertoire sequencing, HLA typing and more for your cell & gene therapy trials

A full range of library preparation platforms

- Perkin Elmer Sciclone® G3 LiquidHandling Workstations
- Agilent Bravo A & B
- Perkin Elmer Zephyr G3
- Hamilton NGS star
- Hamilton Microlab Nimbus

And a broad range of high throughput sequencing platforms

- Illumina (MiSeqDx, NextSeq500, NextSeq2000, NextSeq 550Dx)
- PacBio
- Ion Torrent
- Nanopore

Practice Guidelines Aligned with Cerba Research NGS Offerings

An Example with Non-small Cell Lung Cancer (NSCLC)

According to the NCCN guidelines[1], "broad-based genomic testing approaches that efficiently utilize limited biopsy tissue while maximizing diagnostic genomic information are most commonly NGS-based" and "broad genomic profiling may be the most informative approach to examining potential mechanisms of resistance". Check out the table below that outlines relevant lung cancer biomarkers mapped against what Cerba Research may offer.

Lung Cancer Biomarkers	Most commonly deployed[1–4]	Additional Assay(s)[1]	Cerba Research NGS[†]	Cerba Research IHC[†*]	Cerba Research FISH[†]
EGFR	NGS, RT-PCR, Sanger sequencing		X	X	
ALK	NGS, IHC, Liquid Biopsy	FISH (reflex), RT-PCR	X	X	X
ROS1	NGS	FISH (reflex), IHC, RT-PCR	X	X	X
BRAF	NGS, RT-PCR, Sanger sequencing	IHC	X	X	
KRAS	NGS, RT-PCR, Sanger sequencing		X	MEK1	
MET	NGS, RNA-based NGS		X	X	X
RET	NGS, RNA-based NGS	FISH, RT-PCR	X	X	X
NTRK1/2/3	NGS, RNA-based NGS	FISH, IHC, PCR	X	X	X
EGFR T790M	NGS, Liquid Biopsy		X		
PD-L1	IHC			X	
HER2	NGS	Sanger sequencing, targeted PCR	X	X	X

1. NCCN guidelines 2023; 2. Bebb *et al. Curr Oncol* 2021; 3. Cabillic *et al. ESMO Open* 2018;3(6):e419; 4. Li *et al. J Nat Cancer Center* 2021; [†]Cerba Research Data In-house mostly available through the ACTOnco®/Cerba Paris (NGS) or CR Montpellier/NY (IHC) or Cerba Paris (FISH); *Validation level may vary; IHC=ImmunoHistoChemistry; NGS=Next-Generation Sequencing

Discover our OncoSign FFPE & ctDNA For Solid Tumors*

Cerba Research OncoSign FFPE & ctDNA panels, alongside our OncoSign600+, covers mutations with established, emerging and exploratory value across lung, ovarian, breast, colon, melanoma, bladder, GIST, rare tumors and more. It will also determine MSI-H, TMB, HRD status and will be on FFPE & ctDNA (liquid biopsies).

DNA

- *AKT1*
- *ALK*
- *AR*
- *BRCA1*
- *BRCA2*
- *BAP1*
- *BRAF*
- *CDK4*
- *CDK6*
- *CTNNB1*
- *EGFR*
- *ERBB2*
- *ESR1*
- *EIF1AX*
- *FGFR2*
- *FGFR3*
- *FOXL2*
- *GNA11*
- *GNAQ*
- *GNAS*
- *ALK*
- *BRAF*
- *EGFR*
- *ERBB2*
- *FGFR1*
- *FGFR2*
- *MAP2K1*
- *MET*
- *MYD88*
- *NRAS*
- *FGFR3*
- *KRAS*
- *MET*
- *NRG1*
- *NTRK1*
- *NTRK2*
- *RAF1*
- *RET*
- *SF3B1*
- *STK11*
- *NTRK3*
- *PIK3CA*
- *PPARG*
- *ROS1*
- *RET*

**The gene list and samples requirement if for OncoSign FFPE only. The gene list is not exhaustive - please contact us for further informations*

RNA – Fusion

- *ALK*
- *BRAF*
- *EGFR*
- *ERBB2*
- *FGFR1*
- *FGFR2*
- *FGFR3*
- *KRAS*
- *MET*
- *NRG1*
- *NTRK1*
- *NTRK2*
- *NTRK3*
- *PIK3CA*
- *PPARG*
- *ROS1*
- *RET*

Microsatellites

- *BAT25*
- *BAT26*
- *D2S123*
- *D5S346*
- *D17S250*
- *NR-21*
- *NR-24*
- *MONO-27*
- *ACVR2A*
- *BTBD7*
- *DIDO1*
- *MRE11*
- *RYR3*
- *SEC31A*
- *SULF2*

About Sample requirements...

Tumor cell content	>Min 10% and if less then 20% microdissection required
Minimum surface for small samples	4mm^2 with 100% tumor cells
Lymphocyte invasion	<25%
Fixation time	**Ideal:** <24h
Type	**Ideal:** FFPE block or FFPE curls (5 um, n=5) **Accepted (not preferred):** 5-6 slides

Cerba Research is committed to providing extensive support in genomics for your trials in oncology, rare disorders, infectious diseases, cell & gene therapies, and more…

From sample management to project management, Cerba Research is your trusted partner at every step of your trials; by following the international guidelines and quality requirements.

Don't hesitate to reach us to know more about how we can support your trial!

Cerba Research

Medical Grade Analysis Pipelines to Unlock Critical Information

Cerba Research provides fully interpreted, medical grade reports to analyze the following:

Next Generation Sequencing

- Single Nucleotide Variants
- Insertion and Deletions (Numerous broad panel assays aligned with guidelines)
- Copy number variants
- Gene Fusions
- Tumor Mutational Burden
- Microsatellite Instability
- Minimal Residual Disease on demand
- Homologous Recombination Deficiency
- Somatic Hypermutation

miRNA analysis

qPCR

- Gene expression
- Mutation detection
- Copy number variation

ddPCR

- Gene expression
- Mutation detection

Other applications available

- Genotyping (Massarray)
- Optical Genome Mapping
- Cytogenetics
- CGH array
- HLA Typing
- PGx
- And more...

Cerba Research

Where to Find us?

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