

**OptiCancer**<sup>®</sup>  
Originated in Frankfurt



**Welcome to cedem's Collaboration with  
FiZ Frankfurt Innovation Center.**

**cedem**  
Germany

**FiZ**  
Frankfurter Innovationszentrum  
Biotechnologie

**Have you ever met somebody who  
didn't respond to a drug?**

## About Cedem AG Germany

Cedem AG is a leading service provider of healthcare products for emerging markets and the MENA region. With over 25 years of experience, Cedem built a chain of distributors, wholesalers, retailers, associates, and affiliates in several countries. CEDEM AG is the sole representative of FiZ in the MENA region.

## What is OptiCancer?

OptiCancer is a test that analyzes the biopsy of a cancer patient and produces an electronic report - made in Germany- that considers individual differences in people's genes to define individual patterns of disease. It utilizes the newest and well- established German capabilities and expertise which are available in the Frankfurt Innovation Center for Biotechnology "FiZ".

Our Vision is to implement this market-oriented test which improves public healthcare by tailoring cancer medicines using genetic profiling. Cancer has enormous diversity and it behaves differently from one person to another. Treatments that are unlikely to work on patients can be avoided and treatments that are more likely to be beneficial are administered instead. In addition to saving time and money, new treatment options are recommended based on the analysis of the biological pathways taken by the cancer cells.

## What does the report include?

We provide the oncologist with a report that contains detailed molecular analysis of the tumor in connection with available therapies, clinical studies and drugs. The treating doctor is thus enabled to make an informed and tailored decision for each cancer patient. Excellent scientific expertise, short turn-over time and reliable German data protection standards are our guiding principles.

A solid and safe - German Engineered –reporting service is provided to international clinics and doctors and is shown in the figure on the right.

## Benefits

- More-efficient drug therapies.
- Helping to avoid adverse drug reactions.
- Increasing treatment options.
- Reduce economic burden.

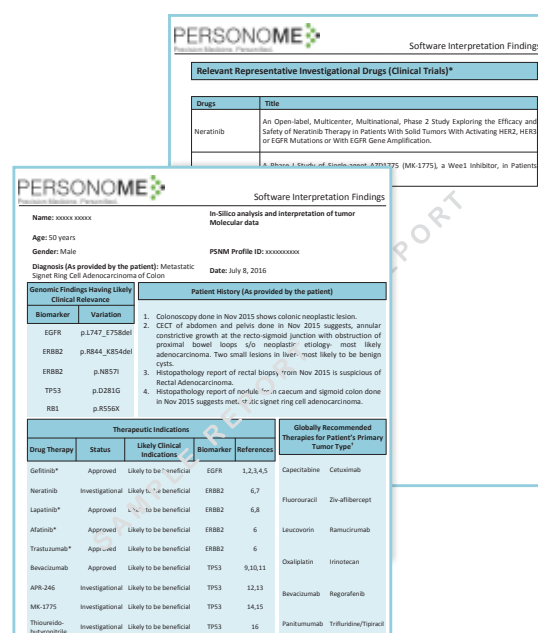
## Our Solutions

We offer targeted sequencing, exome sequencing and ctDNA analysis.

Our standard panel is the Swift Biosciences panel: Accel Amplicon 56G Oncology Panel v2. It is compatible with short DNA fragments from the samples and to generate targeted libraries compatible with Illumina sequencing platforms. This panel utilizes a -263amplicon design, covering over 16,000 COSMIC mutations and includes 104 exonic.

ABL1	5	CSF1R	2	FBXW7	6	GNAS	2	KIT	14	NPM1	1	SKT11	5
AKT1	2	CTNNB1	1	FGFR1	2	HNF1A	4	KRAS	3	NRAS	3	SMAD4	10
ALK	2	DDR2	1	FGFR2	4	HRAS	2	MAP2K1	5	PDGFRA	4	SMARCB1	4
APC	9	DNMT3A	1	FGFR3	6	IDH1	1	MET	6	PIK3CA	11	SMO	5
ATM	19	EGFR	9	FLT3	4	IDH2	2	MLH1	1	PTEN	14	SRC	1
BRAF	2	ERBB2	4	FOXL2	1	JAK2	2	MPL	1	PTPN11	2	TP53	21
CDH1	3	ERBB4	8	GNA11	2	JAK3	3	MSH6	4	RB1	12	TSC1	1
CDKN2A	2	EZH2	1	GNAQ	2	KDR	9	NOTCH1	3	RET	6	VHL	3

A 263 - amplicon design to generate multiplex libraries compatible with Illumina sequencing platforms



## What is FiZ?

The FiZ Frankfurt Innovation Center Biotechnology is a governmentally owned market-oriented nonprofit technology center established in 2002. It is operated under the ownership of the state of Hesse, the city of Frankfurt, and the Frankfurt am Main Chamber of Commerce and Industry.



## What FiZ does

The purpose of the company is to support the development of the biotechnology economy, to promote and maintain the biotechnology potential available, and to establish companies in the biotechnology area in the region.

## Global Prospect

Driven by innovation, FiZ realizes that bringing fresh knowhow to the emerging markets promotes their development. The purpose is to adapt existing solutions to the specific needs of the target market. With the political support from the State of Hesse and the City Council of Frankfurt am Main, FiZ would be pleased to have you as a global partner in precision medicine.

## Network Partners

There are currently 16 tenants companies with about 700 highly specialized employees residing at FiZ and are using a customized infrastructure with access to shared services. FiZ has further network companies, from which 7 are collaborating to bring forward the German Genethics project.

FiZ provides a unique knowledge- and IT infrastructure (House of "New. German Engineering"), on which the individual network companies are coordinated.

The combined capabilities, expertise and experience of the companies and institutions create high additional value and attract other entities to join.

## Evolvus

Provides large scale annotation of biological, therapeutic, secondary evidence and clinical data.

## Interxion

Interxion (a server farm and a data center) is the backbone of the highly professional IT infrastructure.

## GFE Blut

GFE Blut has an expertise in a high-throughput blood-screening and supports the project in the field of liquid biopsy.

## Dr. Senckenberg Institute of Pathology, University Hospital Frankfurt

The Institute of Pathology provides pathological-anatomical services of histology, as well as molecular pathology services.

## GenXPro

DNA sequencing, epigenetics, analysis of ctDNA ("Liquid Biopsies") and gene expression analysis as well as bioinformatics.

## Personome Inc.

The American company Personome operates in the area of cancer diagnostics and constructs a complex knowledge base in the field of oncology for clinical interpretation of Precision Medicine datasets.

## Cedem AG Germany

Cedem AG is an international privately owned healthcare company headquartered in Zurich, Switzerland.

## Max Planck Research Unit for Neurogenetics

Max Planck Research Unit for Neurogenetics provides a NanoString technology for the gene expression analysis.



## Every Cancer is Unique

Cancer is a disease of the genome, and as we learn more about the molecular changes that are associated with cancer we are able to tailor more effective treatment strategies to the genetic profile of each patient's cancer.

### Work Flow

#### Acquire the sample

A standard biopsy sample in the form of FFPE or Fresh Frozen is required.

#### Analyze the sample

Perform modern DNA Next-Generation sequencing. Comparison of the molecular characterization of the tumor with the cancer treatments using algorithms.

#### Optimize the decision

A report with the most suitable treatment options is provided to empower the decision.

### Sample Specifications

**Preferred Type:**

Fresh Frozen

**Alternative Type:**

FFPE\*

**Required Material:**

- Fresh Frozen samples should have a size of 2 cubic mm and must be placed in a tube containing our storage buffer directly after excision during surgery.
- An FFPE sample can be a block or slices. If slices are to be generated, 10 slices of 10 µm are usually enough if they contain at least a 5 mm square area of sample.

**Procedure:**

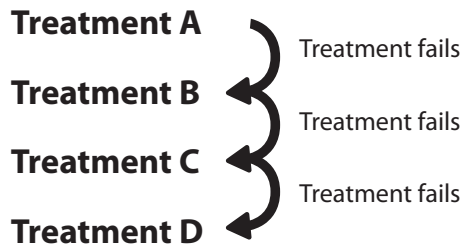
The biopsy must be stored/stabilized into the buffer or FFPE solution immediately after excision. The following must be done:

1. Pathological analysis of cancer tissue
2. Identification of specific cancer type
3. Isolation of cancer tissue as to ensure the high reliability of the sequencing results

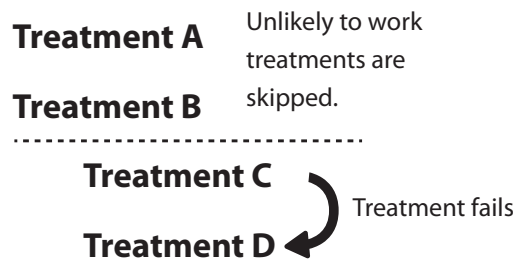
The biopsy must have a good distinction between tumor material and surrounding material. A high amount of tumor material is required.

\*Around 20% DNA degraded due to fixation and poor paraffin quality when using FFPE. For the gene expression analyses as well as to decipher somatic from germ line mutations, it is important that we also to obtain a sample of the healthy tissue.

### Traditional Treatments



### Tailored Treatments



## Why Us?

- 1. Affordable!** Favorable price guaranteed
- 2. Fast data analysis!** High computing power
- 3. Reliable!** German data security and process quality standards

**For more information visit us at**

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