Cerba Research

Cerba Research's Multi-Omics Approaches in Hematological Malignancies

40+ Years Running Successful Oncology Trials

Hematological malignancies originate from the uncontrolled growth of hematopoietic and lymphoid tissues. These biologically and clinically heterogeneous disorders account for 6.5% of all cancers around the world, for approximately 9.5% of newly diagnosed cancers every year.[1]

Due to the high level of heterogeneity in terms of cytogenetic, genetic, epigenetic, transcriptional, post-transcriptional, and metabolic alterations of hematological diseases, integrated multi-omics analyses are needed to improve clinical outcomes.

At Cerba Research, we aim to bring a multi-modal approach to precision medicine to disease. From discovery to clinical development, we provide world-class teams and capabilities worldwide to help you in your quest of novel treatment against hematological malignancies.

Oncology Highlights:

- **40+** years of expertise
- **190+** oncology trials in past 5 years
- **75%** trials include speciality testing
- **55+** countries
- **3000+** clinical sites
- **CAP, CLIA, ISO & FDA-Registered** accredited

1. Epidemiology of Hematologic Malignancies in Real-World Settings: Findings From the Hemato-Oncology Latin America Observational Registry Study. Vania Tietsche de Moraes Hungria et al. J Glob Oncol. 2019

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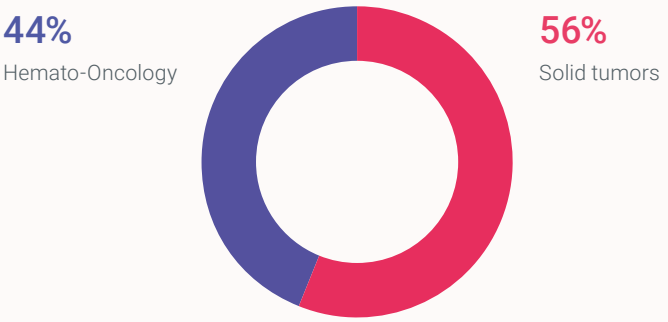
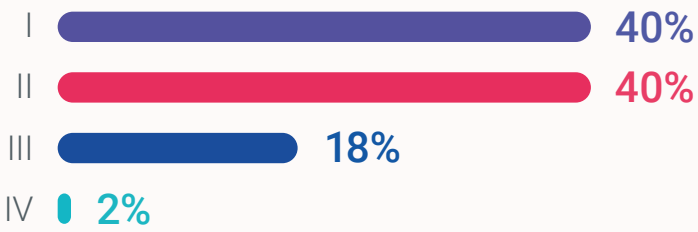
A Look From The Past 5 Years

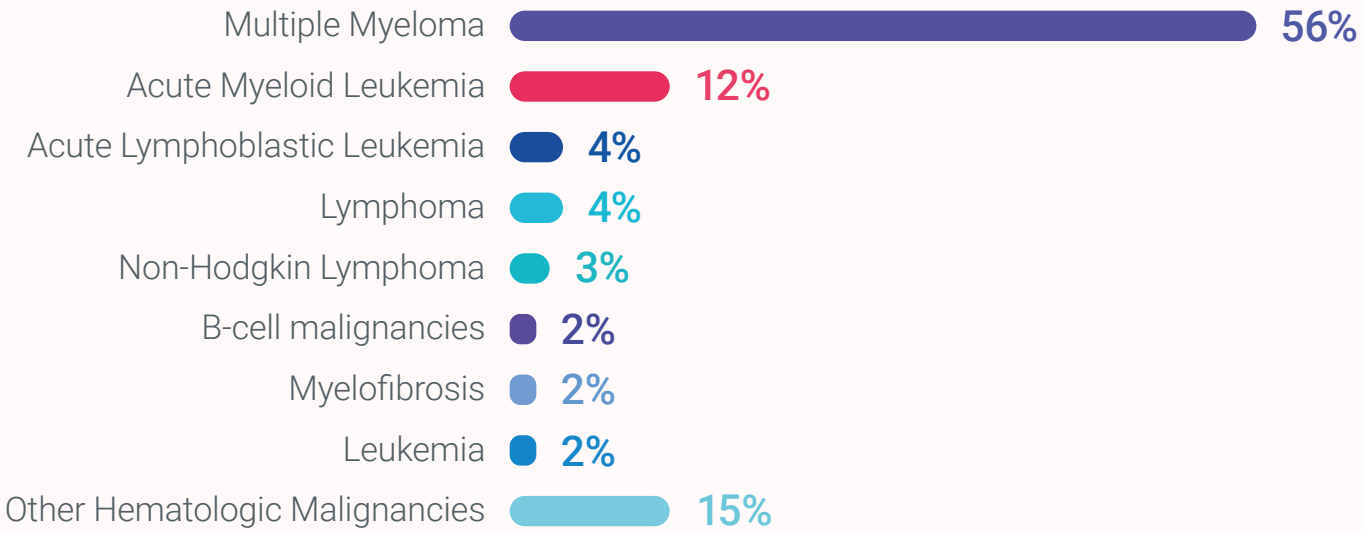
44% Of Our Oncology Trials Are Hemato-Oncology-Related:



Clinical Trial Phases Overview



% Hemato-Oncology Trials By Indication



Cerba Research Data In-house, based on # of trials (updated 6 Oct 2022)

Simplifying Hematological Malignancy Profiling
Expertise | Customization | Fast Turnaround Times

DNA
- NGS
- Karyotype
- qPCR, ddPCR
- FISH
- Sequencing: whole genome/whole exome
- SNP-array

RNA
- NGS
- RNAseq (fusion genes)
- RT-PCR, RT-qPCR
- Gene expression profiling (Nanostring)

Routine
- Coagulation
- Hematology
- Biochemistry
- Serologies
- Urinalysis

Protein
- Multiplex cytokine profiling (37-plex)
- 50+ ligand binding assays - ELISA, MSD
- Free light chain assay
- sPEP, uPEP

Cell
- Flow cytometry
  - Receptor occupancy
  - MRD detection
  - Immunophenotyping (including intra-cellular markers)
  - CAR-T cell enumeration
  - CAR-T cell phenotyping
  - Intra-cellular cytokine detection

Tissue
- Biorepository - wide range of healthy & pathological tissues
- Immuno-onco simplex & multiplex IHC panels
- Spatial analysis in the tumor microenvironment
- FISH, ISH
- Myelogram
- Biobanking

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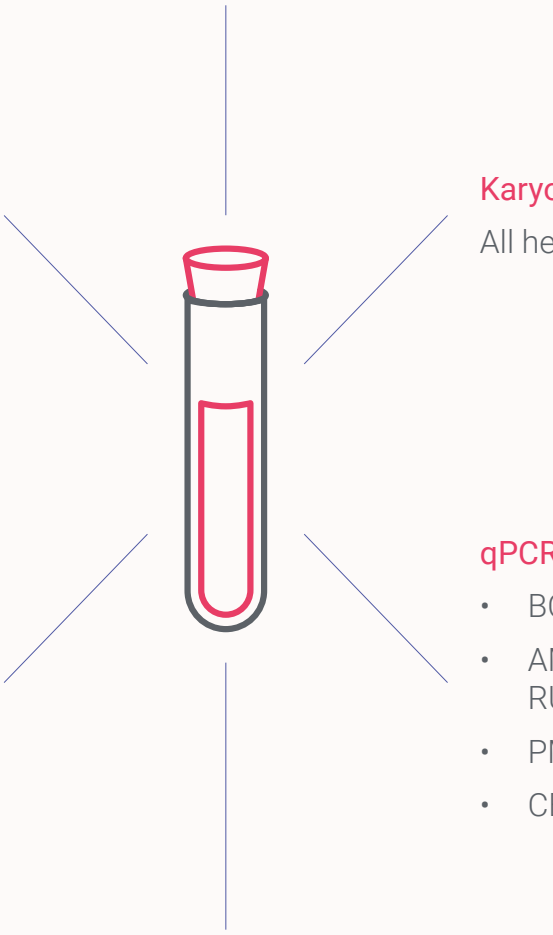
Comprehensive Genomic Analysis for Hematological Malignancies

Digital PCR

- JAK2
- V617F
- MYD88

Fragment Analysis

- B/T clonality
- AML/MPNs analysis



Karyotype/FISH

All hematological malignancies

qPCR

- BCR-ABL
- AML1-ETO/ RUNX1 – RUNX1T1
- PML-RARA
- CBFB – MYH11

Sanger Sequencing

Confirmation analysis

Dedicated NGS panels

- Myelo proliferative neoplasms
- Chronic myelomonosystic leukemia and myelodysplasic syndroms
- Acute myeloblastic leukemia
- Lymphoid malignancies

These lists are not exhaustive. Please contact us for further information on any specific biomarker or panel.

Detailed Proteomic View With a Range of Assay Technologies

37-Plex Panel MSD (Matrix : EDTA Plasma/Serum)

Proinflammatory	Chemokine	Cytokine	Angiogenesis	Vascular
TNF-α	Eotaxin	GM-CSF	VEGF-A	SAA
IFN-γ	Eotaxin-3	IL-5	VEGF-D	CRP
IL-1ß	MIP-1α	IL-7	Tie-2	VAM-1
IL-2	MIP-1ß	IL-12/IL23p40	Flt-1	ICAM-1
IL-4	IL-10	IL-15	PIGF	
IL-6	MCP-1	IL-16	bFGF	
IL-8	MCP-4	IL-17A		
IL-10	MDC	TNF-ß		
IL-12p70	TARC			
IL-13				

MSD = meso scale discovery

Detailed Insight Into Cell Populations & Subpopulations With our Validated Flow Cytometry Panels

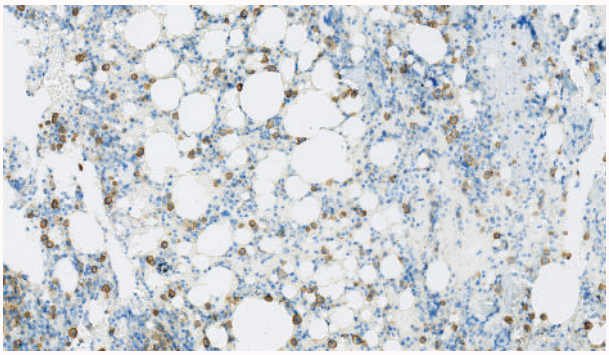
Panel name	Antigen markers	Matrix	Location
Standard TBNK BD FACSLyric / Canto	**Tube 1:** CD3, CD4, CD8, CD16, CD56, CD19, CD45	Blood & BMA	US, EU, AU, TW, CN
Expanded TBNKM Cytek Aurora	**Tube 1:** CD3, CD4, CD8, CD14, CD16, CD19, CD25, CD27, CD45, CD56, CD127, CD45RA, CCR7, IgD, Viability	PBMCs	US, EU
MM MRD (EuroFlow) RUO only BD FACSLyric	**Tube 1:** CD19, CD27, CD38, CD45, CD56, CD81, CD117, CD138 **Tube 2:** CD19, CD27, CD38, CD45, CD56, CD81, CyIgkappa, CyIgLambda	BMA	US, EU, AU

BMA = bone marrow aspirate

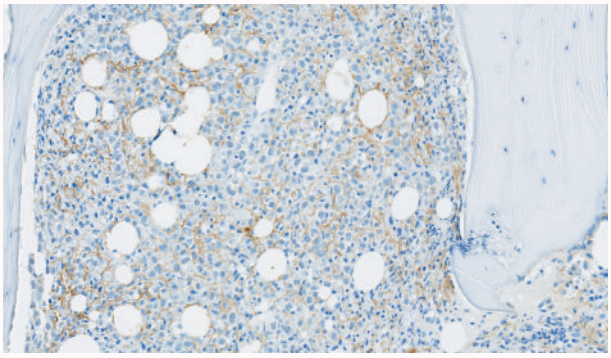
*BD FACS Canto - 8-color Flow cytometer
*BD FACS Lyric - 12-color Flow cytometer
*Cytek Aurora - 40+ color, Spectral Flow cytometer

Diagnosis Based on Immunohistological Assessment: CD138+ Plasma Cells Quantification Including Kappa/Lambda Clonality

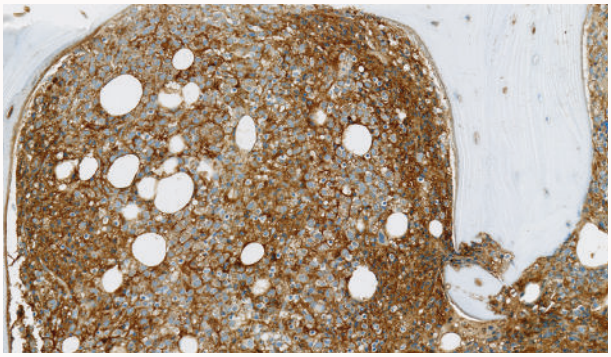
CD138



Kappa



Lambda



Cerba Research Data In-house; Alexy Promonet, PhD

Specimen

Bone Marrow FFPE

Platform

Benchmark Ultra

Validation level

Clinical

Validated tissue

Bone Marrow

Ab

CD138 (B-A38, Roche)
Kappa (rabbit polyclonal, Roche)
Lambda (rabbit polyclonal, Roche)

Clinical value

CD138 IHC can be used to identify normal and abnormal (multiple myeloma) plasma cells. The clonality of the plasma cells is determined through Kappa and Lambda IHC

These lists are not exhaustive. Please contact us for further information on any specific biomarker or panel.

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