



## **Information About Our Diseased Cell Products**

### **Background**

Leukemia is a cancer of the blood forming cells. This cancer starts in the bone marrow but usually spreads quickly in to the blood. Over time, it spreads to lymph nodes, the spleen, liver, the covering of the brain and spinal fluid and other organs.

There are four major types of leukemia, where are classified as (1) acute or chronic; (2) lymphocytic or myelogenous. In acute leukemia the leukemia cells come from early cells – the immature blasts (more like stem cells). In chronic leukemia the leukemia cells come from further differentiated cells but they are not completely normal. They live too long and build up. Lymphocytic leukemia develops from lymphoblasts or lymphocytes in the bone marrow. Myelogenous leukemia develops from myeloid cells and/or hematopoietic progenitor cells.

### **Classifications**

There are different subtypes as well as phases in each leukemia group based upon (1) morphology and cytochemistry; (2) cytogenetic; (3) immunophenotype and (4) molecular diagnostics. We are able to provide the details of the diagnosis for each sample upon request but we cannot guarantee that such details exist with each sample.

### **Certificate of Analysis**

A Certificate of Analysis (CofA) for each product will be provided with the shipment. The information about the patient is including the age, gender, race, weight, height, classification of the disease, the treatment history and the status of the disease when the cells were obtained. The CofA is also including the information about the product such as the number of cells and the viability of the cells in the product vial.

### **Clinical Reports**

The clinical reports for each product will be provided with the shipment. A sample of AML clinical reports is attached to this general information sheet. Below is a sample of a clinical report.

### **Specifically Selected Cells from the Patient**

We provide highly purified mononuclear cells from peripheral blood and bone marrow. In addition we can also provide specifically selected cells from leukemia patients such as CD34<sup>+</sup> stem/progenitor cells, CD2<sup>+</sup> and CD5<sup>+</sup> with CD5<sup>+</sup>, CD19<sup>+</sup> B Cells with CD5<sup>+</sup> and CD10<sup>+</sup> subsets, CD56<sup>+</sup> NK Cells, CD14<sup>+</sup> Monocytes, CD16<sup>+</sup> Neutrophils, Eosinophils and CD138<sup>+</sup> plasma cells. Please contact us for any other special requests.



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Patient ID: EBO-PB0046, EBO-BM0046

Clinical Report

Date of Acquisition: 05/15/2009

MM, IgM, IgD, Relapsed/Refractory

General Information

Clinical Diagnosis: Multiple Myeloma		Form and Stage: IgM, IgD (30% plasma cell dyscrasia), Relapsed/Refractory	
Gender	<input type="checkbox"/> M <input checked="" type="checkbox"/> F <input type="checkbox"/> Unknown	Date of birth: 1929	
Date of First Diagnosis: 06/22/2005		Ethnicity: n/a	
Age at beginning of disease: 76		Duration of the disease: 4 years	% of Cancer Cells: $\geq$ 30%
WBC count ( $10^9/L$ )		<input type="checkbox"/> $\geq$ 25	<input checked="" type="checkbox"/> 10-25 <input type="checkbox"/> $<$ 10
HIV 1 and 2 tests: Negative			
Previous treatment		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Treatment history not available	

Complete Blood Count

Date: 04/30/2009

Item	Value	Reference Range	Units
WBC	10.3	4-10.5	$10^9/L$
RBC	3.26	3.80-5.10	$10^{12}/L$
HGB	9.7	11.5-15.0	g/dL
HCT	29.8	34.0-44.0	%
MCV	92	80-98	fL
MCH	29.8	27.0-34.0	pg
MCHC	32.6	32.0-36.0	g/dL
RDW	17.4	11.7-15.0	%
PLT	108	140-415	$10^9/L$
NEUT%	47	40-74	%

Item	Value	Reference Range	Units
LY%	46	14-46	%
MO%	3	4-13	%
EOS%	3	0-17	%
BASO%	1	0-3	%
NEUT#	4.8	1.8-7.8	$10^9/L$
LY#	4.7	0.7-4.5	$10^9/L$
MO#	0.3	0.1-1.0	$10^9/L$
EOS#	0.3	0.0-0.4	$10^9/L$
BASO#	0.1	0.0-0.2	$10^9/L$

Peripheral Smear

Date: 07/24/2007

Summary

Platelets are present in adequate numbers and the red blood cells are slightly hypochromatic. The white cells consist mainly of neutrophils and lymphocytes.

Bone Marrow Aspirate Smear Analysis

Date: 07/24/2007

Bone Marrow Aspirated from: Posterior Iliac Crest  
 Myelocytic/Erythrocytic Ratio: 4:1

Cellularity: 40-50%  
 Number of nucleated cells counted/slide: N/A



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Patient ID: EBO-PB0046, EBO-BM0046

Clinical Report

Date of Acquisition: 05/15/2009

MM, IgM, IgD, Relapsed/Refractory

Summary

Stainable iron is absent. The smears contain many spicules; megakaryocytes are present in adequate numbers. Myelopoiesis is complete, and erythropoiesis is unremarkable. The scattered plasma cells comprise less than 5% of the cell population. The lymphocytes are small and lack nuclear membrane irregularities. Plasmacytic differentiation is not appreciated.

Serum Biochemistry

Date: 04/30/2009

	Value	Reference Range	Units
Glucose	64	65-99	mg/dL
BUN	46	5-26	mg/dL
Creatinine	5.03	0.57-1.00	mg/dL
eGFR	8	>59	mL/min/1.73
eGFR African-American	10	>59	mL/min/1.73
BUN/Creatinine Ratio	9	8-27	
Sodium	143	135-145	mmol/L
Potassium	3.6	3.5-5.2	mmol/L
Chloride	107	97-108	mmol/L
Carbon Dioxide	20	20-32	mmol/L
Calcium	9.0	8.5-10.6	mg/dL
Protein, Total	6.6	6.0-8.5	g/dL
Albumin	3.0	3.5-4.7	g/dL
$\alpha_1$ -Globulin	0.3	0.1-0.4	mg/dL
$\alpha_2$ -Globulin	0.6	0.4-1.2	mg/dL
$\beta$ -Globulin	0.6	0.6-1.3	mg/dL
$\gamma$ -Globulin	2.0	0.5-1.6	mg/dL
M-Spike	1.2	not observed	
Globulin, Total	3.4	2.0-4.5	mg/dL
A/G Ratio	0.9	0.7-2.0	mg/dL
Immunoglobulin G	986	700-1600	mg/dL
Immunoglobulin A	81	70-400	mg/dL
Immunoglobulin M	2046	40-230	mg/dL
Kappa Light Chain	52.58	3.30-19.40	mg/L
Lambda Light Chain	179.05	5.71-26.30	mg/L
Kappa/Lambda Ratio	0.29	0.26-1.65	
Immunoglobulin D Quant.	0.87	0.13-15.27	mg/dL
Immunoglobulin E, Quant.	71	0-158	U/mL



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Comment: Immunofixation shows IgM monoclonal protein with lambda light chain specificity.

Chromosomal Analysis

Date: 07/24/2007

Karyotype	Method	Chromosomal Abnormality
46, XX, del (3)(p21),+18[cp2]/26, XX[18]	GTG Banding	2 mitotic cells were examined and characterized by the inclusion of a deleted chromosome 3 and a gain of chromosome 18.

Immunophenotyping: Bone Marrow Aspirate Analysis

Date: 07/25/2007

FACS

IFA

Immunofixation

Antigen	Pattern
sLambda	Bright
CD19	Moderate
CD20	Bright
CD38	Subset
CD45	Bright
CD138	Subset
cLambda	Moderate
clgM	Moderate
clgD	Dim to Moderate
CD5	Subset
CD11c	Dim to Moderate

Immunophenotyping: Bone Marrow Aspirate Analysis II

Date: 07/24/2007

Gate	Expression (%)
Lymphocyte	53.70
Blast	0.78
Monocyte	1.25
Granulocyte/Myeloid	41.92
Erythroid/Plasma Cells	1.48
CD38-bright Plasma cells	0.22

Comment:

Analysis detected monotypic IgD, M-lambda B-cell population comprising approximately 30% of total. This population expresses bright surface lambda light chain, CD20 there appears to be a dim to moderate CD5 and dim CD23 detected. In addition, a tiny IgM lambda restricted plasma cell population comprising at least 0.1% of total is detected.