

## **Bone Marrow or Blood Test that Reveals Complexities of Leukemia & Lymphoma is Gold Standard for Diagnosis, Prognosis and Monitoring**

*Benefits of using immunophenotyping with flow cytometry.*

Plainview, NY ([PRWEB](#)) May 19, 2008 -- According to estimates from the Leukemia & Lymphoma Society, more than 100,000 adults and children in the U.S. were diagnosed with some form of these two cancers last year alone - and more than a half a million Americans are now living with these diseases. While survival rates have skyrocketed over the past 50 years, with five-year survival ranging from 50-95% depending on patient age and the type of cancer, early detection and prompt, proper treatment remain the keys to surviving leukemia and lymphoma.

Fortunately, researchers have perfected a blood or bone marrow test that can establish, quantify and qualify the cancer cells quickly for diagnosis, identification of residual disease, monitoring of remission and determination of treatment eligibility for certain protocols.

"Immunophenotyping is a way for us to 'see' certain cancers in a whole complex way," explains Dr. Zsuzsanna Vegh-Goyarts, PhD, Assistant Director of Flow Cytometry and Tumor Markers at Acupath Laboratories. "Using flow cytometry, we identify up to 30 different antigens on the white blood cells. These antigens or CD molecules are present on the normal blood cells as well. But when cells become malignant, one type of cell starts to proliferate and with this methodology we can see a distinct population of cells (a monoclonal population) that normally is not present. We can also identify the cell type and the differentiation stage of the cell based on the immunophenotype. Dr. Vegh-Goyarts explains. "Looking at the flow cytometry data correlated with other clinical pathology tests the hematopathologists can differentiate between various types and subtypes of leukemias and lymphomas or myeloma."

### **The Antigen-Antibody Connection**

According to Dr. Vegh-Goyarts, different leukemia and lymphoma cells have different glycoproteins, or antigens, associated with them. They are present on the surface of the cells, and fortunately, specific antibodies were developed against them that are tagged with various fluorescein dyes. These antibodies react with the antigens so we can "stain" the bone marrow or blood cells to determine whether the antigens are present." Dr. Vegh-Goyarts notes. The flow cytometer measures numerous parameters of each single cell, such as the light scatter depending on the size and granularity, as well as four color fluorescence properties that allows for precise characterization of thousands of cells in a very short period of time after a complex and sophisticated computer analysis.

"Immunophenotyping is of great value for cancer patients and their doctors at every stage of disease management," Dr Vegh-Goyarts stresses. For example, an antigen panel can be customized to determine a general diagnosis of myeloma, lymphoma or leukemia, and to differentiate between acute or chronic disease. It can determine the types of blood cells that are malignant - if the cells are myeloid or lymphoid, if they are B-cells, T-cells, NK cells or if they are immature or mature cells. The quantity or percentage of cells in the sample and the intensity of the fluorescence are also analyzed and have significance. "These answers are critical for doctors and their patients when treatment plans are being crafted and implemented," Dr Vegh-Goyarts notes. What's more, treatment success can be gauged and remission status monitored with immunophenotyping. " This extremely sensitive and specific method can identify very few abnormal cells present in the bone marrow or in the blood, so it is one of the most accurate and timely method for evaluating patients' response to therapy,

residual disease as well as remission," Dr Vegh-Goyarts points out.

#### Eligibility for Cutting Edge Treatments

Finally, immunophenotyping with Flow Cytometry can determine a patient's individual eligibility for certain new treatment protocols for leukemia and lymphoma. "These new treatments have been developed as an antidote to the antigens that are present on the cancer cells themselves," Dr. Vegh-Goyarts explains. "Because cancer cells are the body's own cells, simply in a malignant state, the immune system often does not recognize them as a threat, and therefore patients need a variety of treatment options when facing a cancer diagnosis," she adds. These cutting edge treatments include a drug protocol called monoclonal antibody therapy. These specific antibodies deliver drugs or radiation very specifically and directly to the cancer cell, that has great advantages over traditional chemotherapy treatments.

#### About Dr. Zsuzsanna Vegh-Goyarts, PhD

Dr Vegh-Goyarts has a Ph.D. in Immunology and extensive training and experience in the field of tumor biology and immunology. She spent her postdoctoral years in prestigious research institutes such as the Tumor Biology Department of the Karolinska Institute in Stockholm, Sweden, and the Immunology Department of Albert Einstein College of Medicine, NY. Before joining Acupath she worked as an Assistant Professor in immunology research at SUNY Stony Brook and she was trained in Clinical Immunology at Stony Brook UHMC. Dr Vegh-Goyarts presented her own work in numerous peer reviewed publications in well known scientific journals and on international conferences. She holds a Certificate of Qualification in the areas of Soluble Tumor Markers, Diagnostic Immunology and all four areas of Cellular Immunology (Flow Cytometry) from the New York State Department of Health. [www.acupath.com](http://www.acupath.com).

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