EARLY DIAGNOSTIC OF B CELL CHRONIC LEUKEMIA BY NOVEL BIOMARKERS

M. Fuentes[1], R. Bartolomé Casado[1], M. Gonzalez-Gonzalez[1], F. Lund-Johansen[2], A. Orfao [1].

[1] Centro de Investigación del Cáncer. Universidad de Salamanca-CSIC, [2] Riks Hospitalet Medical Center, Oslo, Norway.

B-cell chronic lymphocytic leukemia (B-CLL) is the most common type of leukemias. Normally, CLL is a disease of adults, but in most cases, it can occur in teenagers and occasionally in children (inherited). Most of the people are diagnosed without symptoms as the result of a routine blood test that returns a high white blood cell count. CLL is first suspected by the presence of lymphocytosis; however, it is increasing the number of adults with an increment of aberrant B cells populations before a lymphocytosis appears.

In our study, we have developed two functional proteomics approaches for biomarker discovery useful in early diagnostic:

i.-Determination of cell surface proteins by antibody arrays (antigens CDs). This simple methodology enables rapid and semi-quantitative immuno-phenotyping. By this approach, it is easy identify aberrant B-cells populations, all of them positive for: CD44, CD5, CD37, CD19, CD20, CD52, CD45RA, CD22, CD24, CD45,...).

ii.-Beads based arrays: This methodology allows to determine, by flow cytometry, simultaneously hundreds of sera and/or intracellular proteins. Differences in protein expression profiles of aberrant B cells and normal B cells open a new hallmark in diagnostic and prognostic; among others ZAP-70, AKT1, JAK-STAT,MDM2,....