

Targeted Comparative Proteomics Analysis of Integral Plasma Membrane Proteins on AML and CML

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A targeted proteomics method utilization of biotinylation of cell surface proteins was carried out on K562, a chronic myeloid leukemia cell line (CML) and NB4, an acute myeloid leukemia cell line (AML). In order to circumvent the various problems associated with the study of membrane proteins, we used membrane-impermeable biotinylation reagent, sulfo-NHS-SS-biotin. Comparative proteomic analysis of cell surface antigens of AML and CML revealed 137 proteins and 136 proteins, respectively, of these 25% proteins were common. The major different proteins were ABC A13, glial fibrillary acidic protein, and PI3Kinase family protein, anion transporter/exchanger-8 for AML and cGMP-gated ion channel, ABC A9, RSU-1 and angiotensin-1 for CML. This versatile method could provide an accurate picture of the cell surface antigens discriminating AML and CML.