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IMMUNOPHENOTYPING OF CD74, MIF AND CD44 EXPRESSION ON HUMAN BREAST CANCER DERIVED CELL LINES

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Objective: Cluster of differentiation (CD) 74, CD44 and MIF are well known for their immunological functions however it has been shown recently that CD74, CD44 and MIF have a role in tumor and tumor progression. This study was undertaken to investigate the expression of CD74, MIF and CD44 in breast cancer cells as well as normal breast cells.

Methods: The expression of CD74, MIF and CD44 molecules on the breast cancer derived cell lines CAMA-1, MDA-MB-231 and MDA-MB-43 were determined by flow cytometry, western immunoblotting and confocal microscope. The study was validated studying the expression of CD74, MIF and CD44 on the normal breast cell line 266LDM, whole cell lysate obtained from adult normal breast tissue and normal breast tissue.

Results: The results showed that all breast cancer cells overexpress CD74 isoforms, MIF and CD44, in contrast to the normal cell lines and normal breast tissues, which express only CD44 and MIF in low levels. The expression of CD74, MIF and CD44 was studied in the immortalized normal breast luminal cell line 226LDM, normal breast tissues and lysate to validate the study.

Conclusion: The data shown in this study represents the first evidence of breast cancer cell lines expressing three different isoforms of CD74. Taken together, the results of the present study indicate a crucial role of CD74 in breast cancer cells along with MIF and CD44. The results also suggest that CAMA-1, MDA-MB-231 and MDA-MB-435 cells are poorly immunogenic, expressing low levels of HLA-A, B, C and HLA-DR.

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