Abstract

Title: CD74 a Potential Therapeutic Target for Breast Cancer Therapy: Interferon Gamma Up-regulates its Expression in CAMA-1 and MDA-MB-231 Cancer Cells

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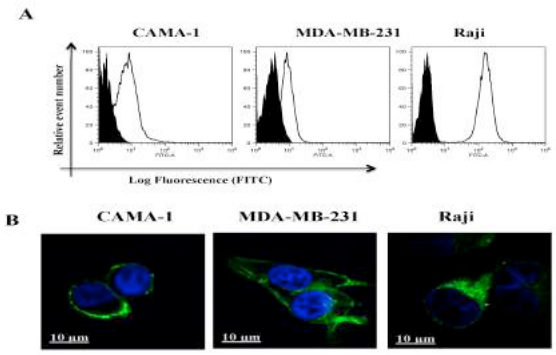
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I. Abstract Body (up to 250 words)

Background and Objective: Cluster of differentiation (CD) 74 is well known for its diverse proinflammatory and immunological functions. This study was undertaken to investigate the role of interferon (IFN)-γ on CD74 expression in breast cancer cells. **Materials and Methods**: The CAMA-1 and MDA-MB-231 cancer cells were stimulated with IFN-γ and expression of CD74 was determined by flow cytometry and western immunoblotting using Raji cells as a positive control. The MTT assays were used to determine the effect of IFN-γ on the proliferation and migration of cells. Whereas, cell surface expression of HLA-ABC and HLA-DR were acquired by flow cytometry. **Results**: Treatment of CAMA-1 and MDA-MB-231cells with IFN-γ significantly increased the expression of CD74. Not only have these, IFN-γ also stimulates the expression of HLA-ABC and HLA-DR in a dose-dependent manner in CAMA-1 and MDA-MB-231cells. Moreover, IFN-γ treatment also inhibited the proliferation and migration of CAMA-1 and MDA-MB-231cells. **Conclusion**: The IFN-γ up-regulates CD74 expression in human breast cancer cells. The results concluded that IFN-γ played a key role in modulating the expression of CD74, as well as in the proliferation and the migration of CAMA-1 and MDA-MB-231 cancer cells. Data suggest that CD74 plays a key role in tumor immunogenicity as well as in breast cancer immunoediting in humans.

II. Image:



III. Reference:

1. Zhao, Y.H., T. Wang, G.F. Yu, D.M. Zhuang and Z. Zhang et al., 2013. Anti-proliferation effects of interferon-gamma on gastric cancer cells. Asian Pac. J. Cancer Prev., 14: 5513-5518.

2. Ekmekcioglu, S., M.A. Davies, K. Tanese, J. Roszik and M. Shin-Sim et al., 2016. Inflammatory marker testing identifies CD74 expression in melanoma tumor cells and its expression associates with favorable survival for stage III melanoma. Clin. Cancer Res., 22: 3016-3024

3. Al Ssadh, H., P.S. Spencer, W. Alabdulmenaim, R. Alghamdi, I.H. Madar, J.M. Miranda-Sayago and N. Fernandez, 2017. Measurements of heterotypic associations between cluster of differentiation CD74 and CD44 in human breast cancer-derived cells. Oncotarget, 8: 92143-92156.

IV. Biography:

Hussain Alssadh holds a PhD in Tumour Immunology from University of Essex, UK. his main research interest resides in the role of immunological receptors CD74 and CD44 in association with the Macrophage Migration Inhibitory Factor (MIF) on human Breast cancer derived cells. He is currently working as field applications specialist with Agilent Technologies, genomics line.

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