Comparison of the Immunomodulatory effects of isolated stage 2 and stage 4 carcinoma associated fibroblasts in mouse Breast Cancer model

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Background: studies have shown that the microenvironment of solid tumors, specifically carcinoma associated fibroblasts, affect the development and progression of cancer. Additionally, it is responsible for immune evasion and drug resistance of cancer cells. However, the crosstalk between CAFs and the immune system is still unidentified.

Methods: in this study, we characterized and compared the phenotype and the immunomodulatory properties of stage 2 and 4 CAFs isolated from mammary tumor of Balb/C mouse. Results: Flow cytometry of the surface marker panel showed that stage 4 CAFs express significantly higher levels of HLA-DR. Also, Higher levels of IL10, COX-2 and MMP9 enzyme was also observed in stage 4 CAFs. Whereas in stage 2 CAFs higher amounts of TFG-β and IDO expression was observed. Conclusion: CAFs represent the supporting stroma of cancer. They are known responsible for immune evading and growth of cancer. Functional differences showed by their surface markers, cytokine and enzyme production indicates to induction of different microenvironments in their presence. The discrepancy observed in cancer therapies may be attributed to the influence of CAFs. Therefore, further studies are required to fully elucidate the role of CAFs in various stages of cancer.

Speaker Biography

Ladan Langroudi did her Ph.D. in Medical Immunology, Tarbiat modares university, Tehran. Master of Medical Immunology, Tarbiat modares university, Tehran. BSc in laboratory sciences, Kerman University of Medical Sciences. Currently she is a professor of laboratory sciences, Kerman University of Medical Sciences in the Department of Immunology.

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