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## Metastatic breast cancer: Getting the facts from peripheral blood

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**Background:** Breast cancer is still a major challenge for oncologists worldwide, though giant steps made on orienting treatment, however, understanding tumor biology and cancer cell behavior is still at the beginning especially when we deal with an immortal, pluripotent cell.

**Objective:** The study is aiming at isolating both circulating breast cancer cells and breast cancer stem cells, expanding them by cell culture and transforming them to paraffin embedded tissue like biopsy with a good yield upon immunohistochemistry.

**Patients and methods:** The study was performed at al Bairouni University Hospital and Kenj Cytogenetic Lab in Damascus (SYRIA). Blood samples were obtained from 100 chemo-naïve metastatic breast cancer patients. Samples were cultured in (DMEM) media, and after certain passages we obtained breast cancer stem cells CD44 high/CD24 low confirmed through passage in flowcytometer and PCR of protein product of CD44 surface protein. Then, obtained cells were subjected to immunohistochemistry for ER/PR/Her-2 after they were embedded in paraffin by means of Liquid based cytology.

**Results and discussion:** We obtained good population of cells through expanding the circulating cancer cells and results of immunophenotyping were the same with the results obtained from the primary tumors (P 0.0001) except in 4 cases where Her-2 was positive on circulating cancer cells while it was negative on the primary.

**Conclusion:** Isolating tumor cells from circulation seems to be an efficient method in evaluating tumor characteristics and behavior. Our method is simple, cheap and informative; however, much work should be done to validate our results.

### Biography

Maher Salamoon obtained his MD from the Faculty of Medicine from Damascus University School of Medicine (Syria) in 1998 then a Master degree in Medical Oncology and Hemato-Oncology from the Nuclear Medicine Centre, Damascus University in 2003, then a Post-doctoral study in Medical Oncology and Molecular Biology from Curie Institution in Paris (France). He did subspecialty in Non-Hodgkin Lymphoma and bone marrow transplant from Lyon-Sud University Hospital in Lyon (France) in 2006. He is the Head of Breast Cancer Department at Al Bairouni University Hospital 2008-2011, Damascus (Syria) and Head of Department of Soft Tissue Sarcoma at the same hospital (2011-2013). At present, he is the Team Leader of translational research at al Bairouni University Hospital and the institute of bio-technology. He contributed more than 10 papers on translational research in several international oncology and hematology conference and 7 of them are in peer review, with more than 50 national and international publications. He was a speaker in several international and national meetings and reviewed more than 200 papers for international reputable journals.

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