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## **Trace elements homeostasis in biological samples as new candidate biomarkers for early diagnosis and prognostic of female breast cancer and therapeutic response**

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**Background:** Female breast cancer (BC) remains the most Common cause of total deaths cancer around the world. Several studies were investigated for BC biomarkers; however vital circulating biomarkers (CB) for early diagnosis of malignancy are still scarce.

**Aims:** This study investigates sensitive emerging biomarkers in biological fluids in order to get better BC outcome and prolong patient's survival.

**Methods:** Relevant studies on dyshomeostasis of essential and toxics trace elements (TEs) were assessed in BC patients.

**Results:** Four essential TEs (Se, Cu, Zn and Mn) were significantly down regulated and one essential TEs (Fe) was up regulated consistently, while five toxic TEs (Cd, Cr, Pb, Co, Mo) were up regulated significantly compared to healthy groups. Se and Cu were the most consistently reported TEs decreased. Regarding toxic TEs, Cd and Pb were the most increased significantly compared to healthy groups. Among the essential TEs, Se and Zn are as the most potential biomarkers, whereas Cd and Pb may be the most

potential biomarkers among the toxic TEs of being utilized.

**Conclusion:** While, no evidence based on clinical practice, the present findings provide insights into the tumor TEs CB in fluids for BC patients. Because of heterogeneity, further investigation is requiring to extrapolate these outcomes to clinical practice in BC with high sensitivity and specificity.

**Keywords:** Breast cancer, Trace elements, Biomarker, Diagnosis, Homeostasis.

### **Biography**

Alphonse Laya has done his PhD in Biochemistry, Faculty of Science, Department of Biological Sciences and University of Maroua, Cameroon. He was a Postgraduate Fellow CSIR-CFTRI, India and Postdoctoral Fellow at the Federal University of Sao Paulo, Brazil. He published more than 15 articles in reputed journals. He was actually serving as an editorial board member of reputed Journals. Current ongoing project: Biomarker of Breast cancer and Trace Elements as well as Bioactive compounds in Fermented Food Condiments as an Adjuvant to Cancer Prevention and Treatment.

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