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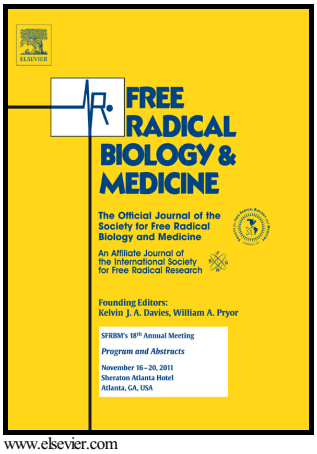

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Expression of reactive species related genes is associated with patient survival in luminal B breast cancer

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ABSTRACT:

Increased reactive species (RS; reactive oxygen and nitrogen species) are a byproduct of both enzymatic and non-enzymatic systems, and critical in cancer development, including breast tumorigenesis. To investigate the role of RS-related genes in breast cancer, expression levels of the most common annotated genes involved in regulating cellular RS levels and proteins that are substrates of RS in specific subtypes of breast cancer 9 were evaluated using public data bases. Based on the premise that increased RS promote tumor formation, and breast cancer subtypes vary in aggressiveness, we hypothesized that specific RS gene expression signatures are associated with breast cancer aggressiveness and patient survival. We identified a group of genes (*GSTK1, PRDX2, PRDX3* and *SLC36A1*) that differentiate Luminal B tumors in two clusters and predict survival of patients with Luminal B breast cancers. Furthermore, network analyses of these four genes revealed an