**Extracellular vesicles from lymphatic exudative seroma as surrogate markers of melanoma residual disease**

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**ABSTRACT**

Liquid biopsies from cancer patients have the potential to improve diagnosis and prognosis. The assessment of surrogate markers of tumor progression in circulating extracellular vesicles (EVs) could be a powerful non-invasive approach in this setting. We
have characterized extracellular vesicles purified from the lymphatic drainage also known as exudative seroma (ES) of stage III melanoma patients obtained post-lymphadenectomy. We showed that exudative seroma is an enriched source of EVs compared to plasma from the same patients. Proteomic analysis uncovered that seroma-derived exosomes are enriched in proteins and oncogenic pathways associated to melanoma progression. In addition, we found that the $\text{BRAF}^{\text{V600E}}$ mutation can be detected in ES-derived extracellular vesicles and its presence correlated with patients at risk of faster relapse. These data support the analysis of seroma-derived EVs for detection of residual disease and recurrence in melanoma right after lymphadenectomy and could be useful for the identification of patients suitable for targeted therapies.