

Title: CITO-CERENE – Circulating Tumor Cell Reducing Nephrectomy

Synopsis:

Renal cell carcinoma (RCC) accounts for 330,000 cases and 140,000 deaths each year. One of the most promising developments in translational cancer medicine has been the study of Circulating Tumor Cells (CTC) as a biomarker. Surgery is the best treatment for RCC, although recurrences can occur in 30% of patients. We know that surgery can release CTCs into the bloodstream, although its role in the metastatic process is still unknown.

In this translational project we aim to study CTC release during RCC surgery. We will apply a new approach for CTC detection in RCC, using automated imaging flow cytometry with a promising set of immunofluorescence markers for RCC CTC detection.

CTCs will be isolated and counted from blood samples of patients undergoing radical nephrectomy (RN) for RCC. Peripheral blood samples will be processed with RBC lysis followed by immunomagnetic negative enrichment with MACS for CD45. CTC identification will be done by imaging flow cytometry, using the Amnis® Imaging Flow Cytometry with positive identification with cytomorphological analysis and immunofluorescence with antibodies specific for CD 147, CA IX and vimentin (for detection of epithelial to mesenchymal transition).

After testing and validating this CTC isolation technique, a translational study will follow, aiming to reduce CTC release during RN.

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[Webpage of the group](#)

Remunerated or volunteer training: Volunteer