

# CTCs contribution in cancer therapy and progression

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**Background:** Circulating tumor cells (CTCs) constitute a cell subpopulation with great importance for oncologists, because of their prognostic value. CTCs detach from the primary tumor, circulate through the blood stream, and can initiate metastatic spread to other organs. This study presents clinical data from cancer patients in Brazil, incorporating CTCs number and profiling.

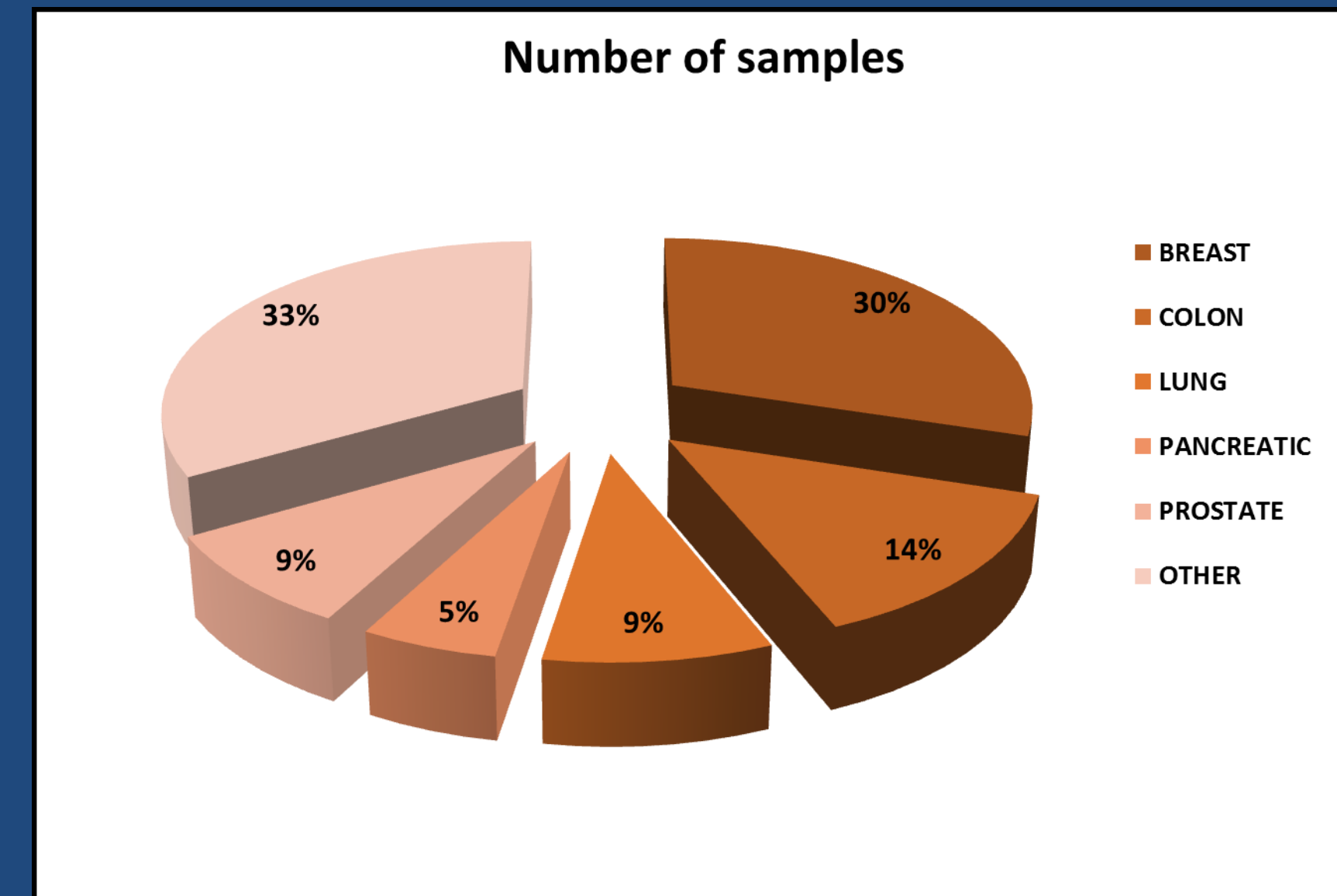


Figure 1: Number of samples according to cancer type

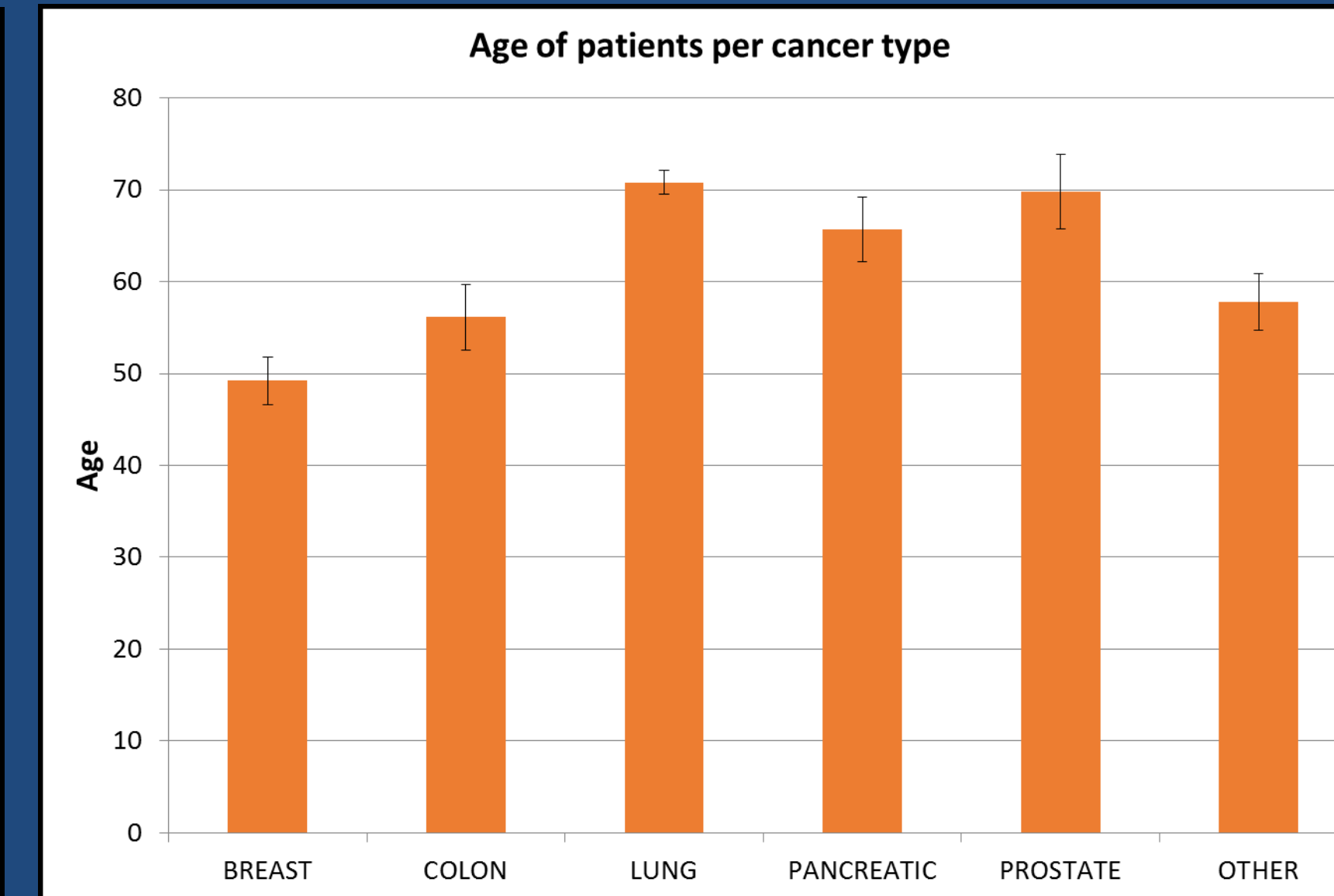


Figure 2: Age of samples per cancer type

**Materials & Methods:** Blood samples from 57 patients suffering from cancer (Figure 1-2) were collected and CTCs were isolated using enrichment protocols. Flow cytometry assays were performed to identify markers that expressed in CTCs and enumerate them. Furthermore, cells were sub-cultured and different chemotherapeutic agents were added. Then chemosensitivity/viability assays and molecular-based assays (Microarrays, qRT-PCR) were performed for each cell population. The information from the above assays were used to design more beneficial therapeutic approaches, which were given to clinical therapists and oncologists.

**Conclusion:** The study of CTCs is very important for the scientific and medical community. Their profile might be the key for predicting response to therapy as well as for monitoring the progression of the disease. Analysis of a wide spectrum of genes and proteins correlated with crucial biological procedures could be useful at clinical level.

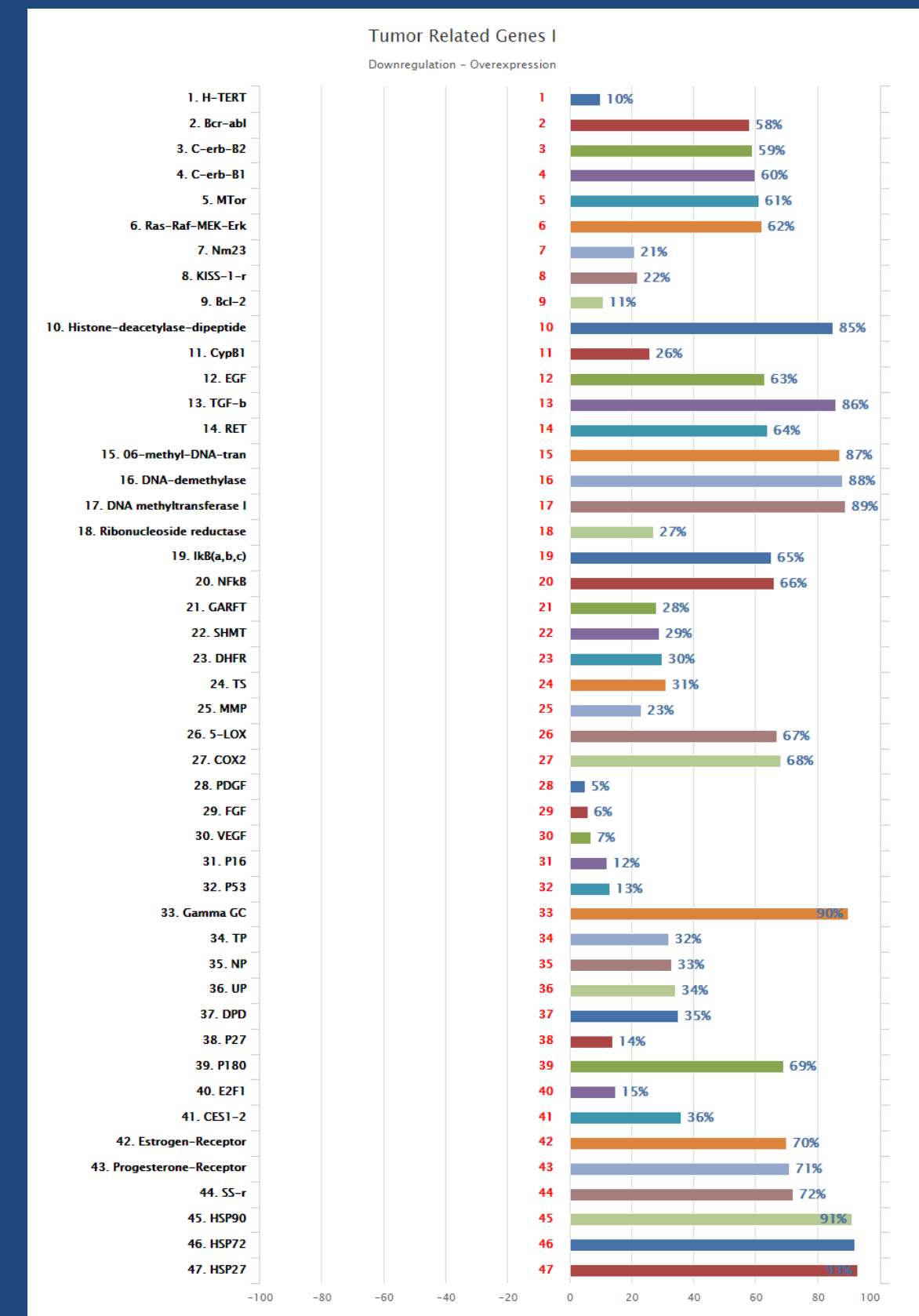


Figure 3 : Data from analysis in CTCs using different methodologies (sample from one case)

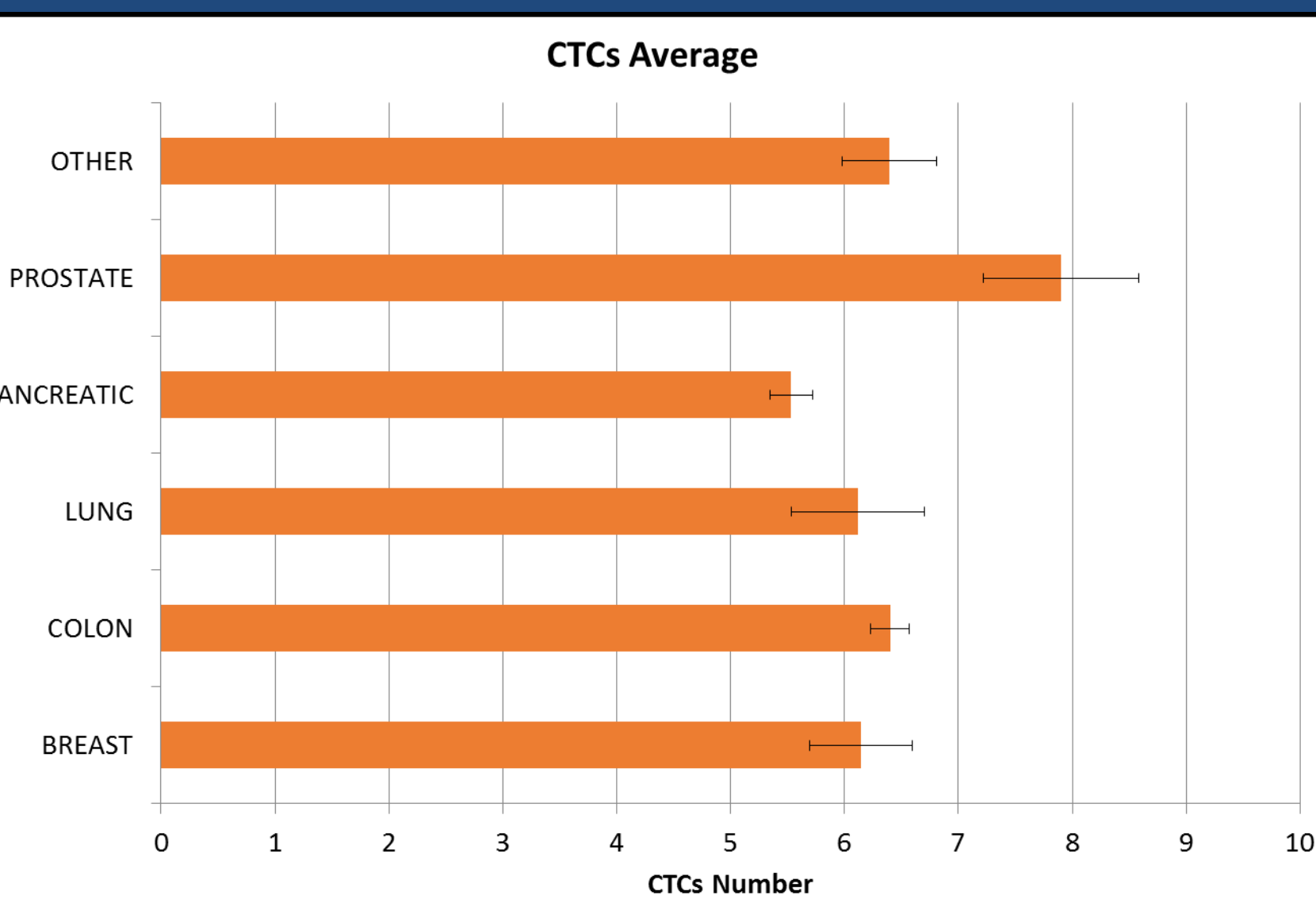
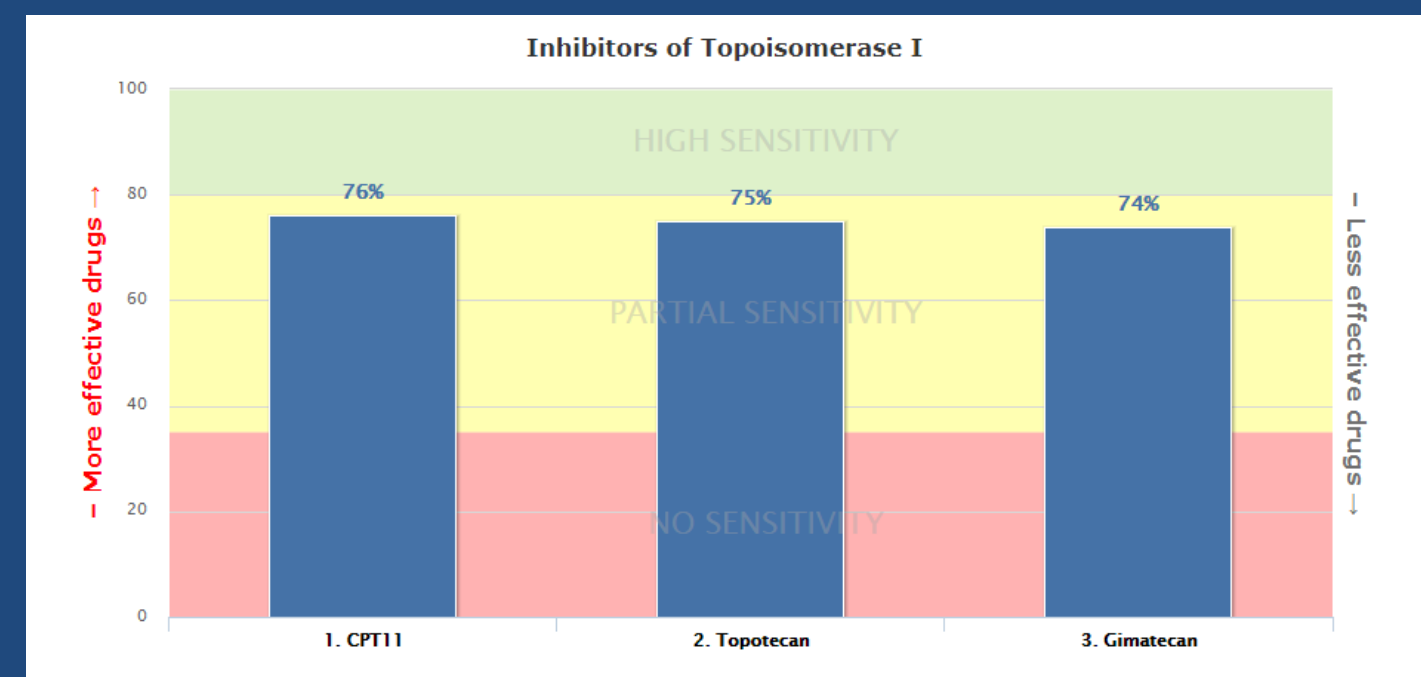
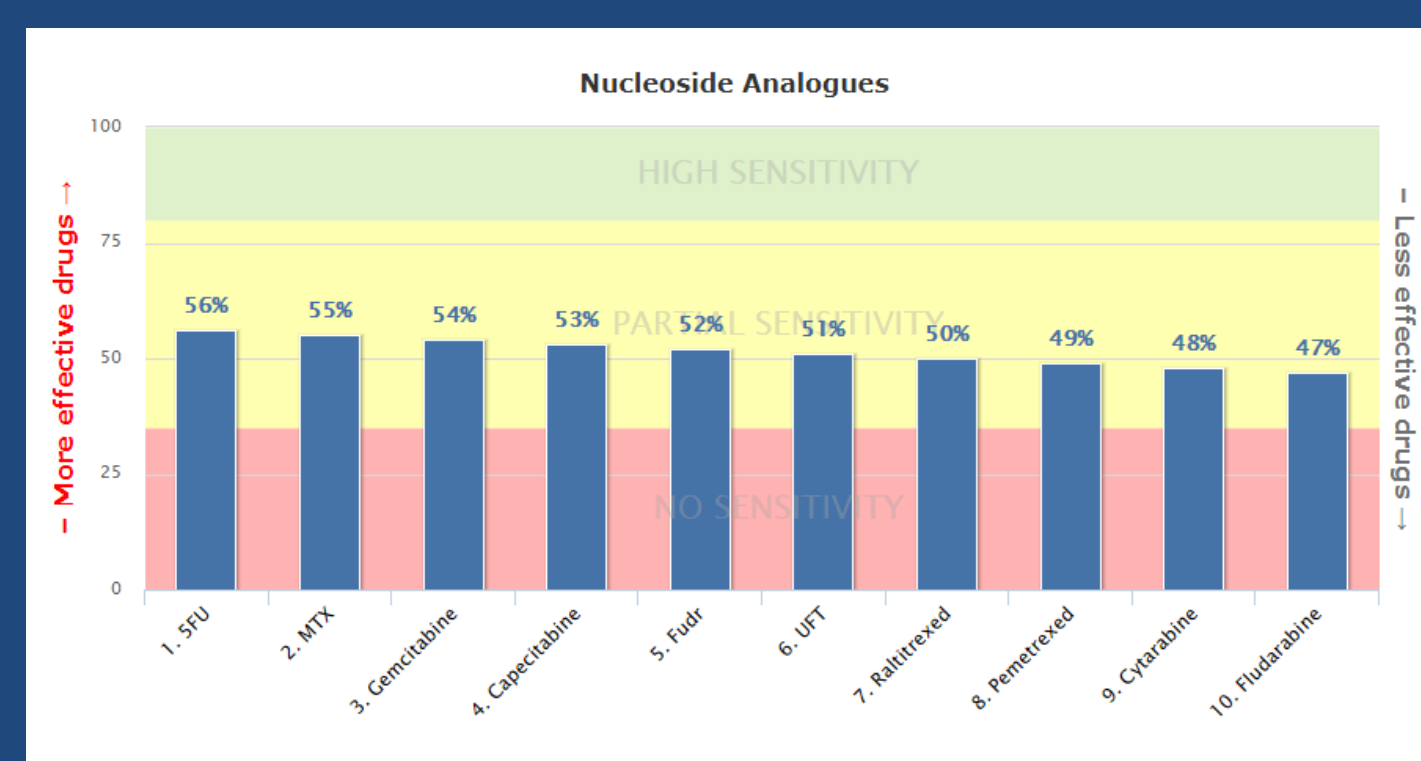


Figure 4: Number of CTC. In breast the amount of CTCs is per 7.5ml, while in the rest per 1ml

## Disclosure of Potential Conflicts of Interest

None of the authors of the above study has declared any conflict of interest

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