

# 12<sup>th</sup> World Cancer Conference

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### Maintrac® CTC detection as a tool to uncover the strategies of tumor cells to evade elimination

The most fearful feature of malignant tumors is their ability to form distant metastases in vital organs leading to fatal outcome, therefore the most important task of tumor therapy is the prevention of metastasis formation. Metastases develop from cells that leave the tumor and travel via the blood until they find a niche to settle and grow. Different measures have been applied to detect tumors by screening before they might seed cells, destroy the disseminated cells by neoadjuvant and adjuvant chemotherapy and/or prevent them from re-growing by surveillance after primary therapy. However, all these actions are taken without being able to directly control to what extent they influence tumor cell dissemination. The Maintrac® approach enables physicians and patients to timely and individually determines the effect of different therapeutic actions on dissemination and elimination from blood and to monitor the behavior of the circulating tumor cells during the whole course of disease by enumerating these cells at any time of point of the disease. Assumptions which have not been explainable before now can be confirmed by direct observation of the behavior of the circulating tumor cells. Surgery can lead to convey metastasis formation because it leads to tumor cell dissemination and activation. Chemotherapy is effective only in a fraction of patients because in some patients the circulating tumor cells become resistant against the drugs and can re-grow in their presence. Hormone blocking silences the circulating tumor cells but in most cases is not able to eliminate them so they can re-grow after stopping treatment. And finally, we are able to show that the circulating tumor cells can up-regulate ligands which prevent immune cells from recognizing them. Thus, this method will in the future contribute to take action at the time when treatment shows insufficient effect and thus optimally tailor tumor therapy.

### Biography

Katharina Pachmann is a Senior Researcher at Transfusion Center Bayreuth, Germany since 2012. She is the Head of Marketing Oncology CTCs at SIMFO GmbH. She has received her PhD from Institute for Hematology der GSF, München. She has also served as the Head of the Department of Experimental Hematology and Oncology, Friedrich Schiller-Universität Jena. She is a Visiting Scientist at LKH Universität sklinikum Graz Gemeinsame Einrichtung für Klinische Immunologie, Jean-Dausset Laboratorium. She has also served as a Visiting Scientist in MD Anderson Cancer Center Houston Texas Section of Molecular Hematology and Therapy from 1996-1998.

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