

## **Detection and molecular characterization of chemo-resistance genes of circulating tumor cells for individualized chemotherapy**

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The molecular techniques established by Biofocus GmbH allow new ways in cancer treatment. The detection of residual circulating cancer cells, their isolation from the patients blood and their molecular characterization can be applied to:

i.) early detection of residual disseminated cancer cells after therapy (e.g. surgery, radiation, chemotherapy)

ii.) determination of therapy resistance of circulating cancer cells towards chemotherapy, hormone therapy, immunotherapy, hyperthermia

Circulating tumor cells (CTCs) are physically isolated from blood samples and analyzed for typical cancer associated genetic alterations for identification of the isolated cells as tumor cells. Subsequently, these CTCs can be further analyzed for expression of chemo-resistance markers and genes involved in the metabolism of the chemo-drugs. This allows the exclusion of potentially ineffective therapies and recommendation of the use of alternative agents capable of modulating drug-resistance.

The application of these techniques provide means towards an earlier, additional or more intense, personalized therapy.