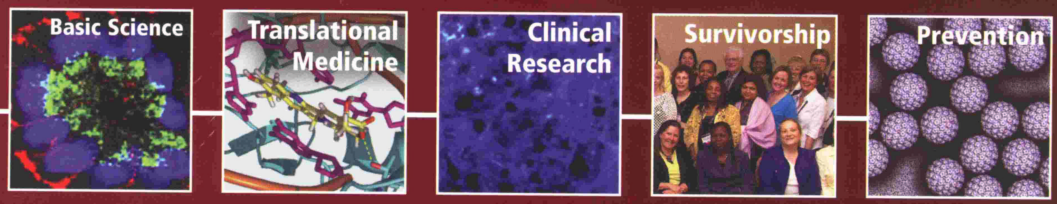
# Proceedings Supplement: Late-Breaking Abstracts

# AACR ANNUAL MEETING 2008




*Translating the latest discoveries into cancer prevention and cures*

**April 12-16, 2008**
**San Diego Convention Center**
**San Diego, California**

CME jointly sponsored by the Vanderbilt University School of Medicine and the American Association for Cancer Research.

AACR CENTENNIAL 1907 - 2007

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**LB-183 Targeting circulating epithelial tumor cells (CETC) to assess the effectivity and mode of action of new cytotoxic agents in breast cancer patients.** Katharina Pachmann,[1] Ernst Ludwig Stein,[2] Carola Rabenstein,[2] Joachim H. Clement,[2] Ulrich Pachmann[2]. [1]Friedrich Schiller University Jena, Jena, Germany; [2]Transfusion Center, Bayreuth, Germany.

**Purpose:** CETC, the systemic part of solid tumors are present in most breast cancer patients in sufficient amounts to allow determination of the effect of cytotoxic agents in individual patients. In previous work we have shown that the response of CETC to treatment highly significantly predicts therapy success and relapse free survival (JCO in press). Here we present data that CETC in short time culture can specifically be assessed for apoptosis and cell killing to correctly predict the cytotoxic activity of chemotherapeutic agents in individual patients.

**Method:** After red blood cell lysis white blood cells containing the CETC were suspended in colourless culture medium supplemented with 10% FCS and the respective chemotherapeutic agent in concentrations covering the range of the agent under therapeutic conditions. Cells were cultivated for different times between 1h and 3days and apoptosis and cell death analysed of the cells staining with FITC- anti- EpCAM by the Annexin test, the Tunel test and Propidium Iodide staining of dead cells.

**Results:** Concentration and time dependent cell apoptosis and cell killing could be observed, with the highest effectivity observed with the known most effective agents taxanes and anthracyclines. In patients treated with the respective chemotherapeutic agents the *in vitro* response of CETC paralleled the reduction of CETC *in vivo.* First results of the clinical impact of these analyses strongly indicate they also predict indiviual relapse free survival.

**Conclusion:** These are the first results indicating that the in-vitro responses of CETC correctly mirror the *in vivo* response with known chemotherapeutic agents and that this also translates into clinical response. Thus, CETC may in the future be used to test new agents in invidual patients. Cryopreservation of CETC is possible and allows application of this method also for agents in development.