



Category: Tumor Biology 28

Session Title: Determinants Of Metastasis

#3692 Enrichment and detection of circulating tumor cells in breast cancer patients. Dong-Min Wang¹, Yin-Hua Liu¹, Yu-He Liu², Chun-Yu Wang³, Hong-Mei Bao³, Huai-Jie Hao³, Shu-Lan Wang³, Yao Zhang³, Hai-Bo Yu³, Xiao-Yan Xing³, Gioulnar Harvie³, Elizabeth Vuong³, Jian-Yu Rao⁴, Tony Reid⁵, Ping Lin³, Jia Xu³. ¹Breast Cancer Center, Beijing University Medical Center, Beijing, China; ²Dept. of Anesthesia, Beijing University Medical Center, Beijing, China; ³AVIVA Biosciences, San Diego, CA; ⁴Dept. of Pathology, UCLA Medical Center, Los Angeles, CA; ⁵UCSD Moore Cancer Center, San Diego, CA.

Objective: Correlation of staging and response to therapy with CTC count in breast cancer patients

Background: Detection of disseminated tumor cells which circulate in peripheral blood (i.e. circulating tumor cell, CTC) is of clinical relevance in terms of monitoring of chemotherapy, staging as well as prognosis, etc. Epithelial cell surface marker EpCAM based positive selection has been applied to isolate CTC. However, the expression level of this protein on CTCs has been known to vary significantly in different patients at different stages. Moreover, further downstream analysis of captured CTC could be impaired by inevitable touching and triggering of isolated tumor cells during positive selection. Instead of actively capturing cells, we have successfully developed a negative depletion based technology to enrich circulating tumor cells from peripheral blood. This non-cell surface molecule based technology has been shown to be very efficient for the enrichment of circulating tumor cells from various cancer patients. Enriched, intact CTCs are suitable for a variety of follow-up analyses, manipulations and applications.

Method: The proprietary negative depletion method was used to enrich CTCs from peripheral blood of breast cancer patients, followed by identification using both immunofluorescence and IHC staining (Bright field).

Result and Significance: To date, more than 70 blood samples from breast cancer patients (in different stages) have been tested. Good cellular morphology was observed both in bright field and by immunofluorescence, which facilitates appropriate identification of enriched tumor cells. In addition, A high degree of clinical correlation was observed between clinical staging, treatment status, and the number of CTCs

Citation Format

Wang D, Liu Y, Liu Y, Wang C, Bao H, Hao H, Wang S, Zhang Y, Yu H, Xing X, Harvie G, Vuong E, Rao J, Reid T, Lin P, Xu J. Enrichment and detection of circulating tumor cells in breast cancer patients [abstract]. In: Proceedings of the 99th Annual Meeting of the American Association for Cancer Research; 2008 Apr 12-16; San Diego, CA. Philadelphia (PA): AACR; 2008. Abstract nr 3692.