

World Congress on **Breast Cancer**

August 03-05, 2015 Birmingham, UK

Diagnostic utility of immunohistochemical staining for basal keratins, K5 and K14, and p63 in the differential diagnosis of malignant glandular lesions

Igor Buchwalow¹, Thomas Loening², Markus Tiemann¹, Ivan Pavlov³ and Werner Boecker¹

¹Institute for Hematopathology, Germany

²Albertinen Pathology, Germany

³Belgorod State University, Russia

In previous studies, we demonstrated that K5/K14-positive basal cells of the stratified glandular epithelia co-expressing p63 give rise to both glandular and/or myoepithelial cell lineages. Assuming that the cells of this immunophenotype may be regarded as putative adult progenitor cells (basal/somatic stem cells), we analyzed the co-expression of p63 with cytokeratins K5 and K14 in tumor cells and in their physiological p63/K5/14+ counterparts in the breast and salivary gland. As the main instrument in this study, we used the in situ multiple immunofluorescence lineage-tracing for keratin subgroups, p63 and SMA as a myoepithelial marker. The epithelium of the breast and salivary gland and tumors arising from these glands showed striking similarities in their cellular composition, as they contain p63/K5/14-positive progenitor cells which differentiate to glandular cell lineages via intermediary cells, with a sequential expression of basal and lineage specific proteins. This study provides evidence that cells undergoing malignant transformation tend to be fairly advanced in the glandular lineage of differentiation. We generated corresponding stem-cell models describing the role of the immunophenotypically identical progenitor p63/K5/14+ cells in both the glandular benign proliferative and neoplastic lesions. This concept may serve as a valuable tool in the differential diagnosis of benign versus malignant glandular lesions of the human breast and salivary glands.

Biography

Igor Buchwalow completed his dissertation at the Institute of Developmental Biology of the USSR Academy of Sciences in Moscow. At the age of 45 he was appointed as Professor at the Moscow Research Institute of Biotechnology. Since 1994 he works in Germany, first at the University of Ulm as a guest Professor of the Max Planck Society, then at the Max Delbrueck Center for Molecular Medicine in Berlin-Buch and later in the Gerhard-Domagk-Institute of Pathology at the University of Muenster. Now he works at the Institute for Hematopathology in Hamburg. He published more than 200 papers in reputed journals. His handbook "Immunohistochemistry: Basics and Methods" written together with W. Boecker was published by Springer in 2010.

Notes: