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EDITORIAL

In this issue

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The highlighted papers illustrate the variety of questions addressed in original work in this issue.

Sajanti et al. [1] address a problem that stirred up quite some discussion lately: that of the diagnosis of serrated neoplasms in the colorectum. At least 10 % of colorectal carcinomas purportedly develop from a (sessile) serrated adenoma but while the adenomas are in classical cases easy to recognize morphologically, the carcinomas are often not unless the serrated precursor lesion is still recognizable. With as background previously described expression data in which Annexin A10 emerged as a gene strongly expressed in serrated adenomas, the study addresses the question whether Annexin A10 might be a potential marker for serrated adenocarcinoma. In adenomas, the authors found Annexin A100 to be specifically expressed in sessile serrated adenomas and in a large proportion of hyperplastic polyps but not in traditional serrated or conventional adenomas. Annexin A10 was specifically expressed in carcinomas with serrated morphology, but not all neoplasms with serrated features expressed the marker. The authors conclude that ANXA10 is a marker with high specificity for colorectal carcinomas developed along the serrated pathway. This seems rather promising but further studies will have to substantiate the clinical utility of this promising marker.

Boecker et al. [2] address the question what the cellular origin is of the foci of squamous differentiation in particular tumors of breast and salivary glands or even in non-neoplastic breast and salivary tissue. Using elegant triple immunofluorescence experiments, they show that markers for the squamous/epidermoid differentiation lineage (basal keratins K5/14 and p63 and squamous keratins K10 and K13) are expressed in foci of squamous differentiation in neoplastic lesions as well as squamous metaplasia in non-neoplastic glandular epithelia. The authors conclude that in these epithelia or epithelial neoplasms in salivary glands as well as in the breast, p63/K5/14+ precursor cells undergo a transition to a K10/13+ squamous lineage state. They thus enlighten us about lineage evolution in these neoplasms.

In their paper, Serenaite et al. [3] report on heterogeneity in prostate cancer. Tumor heterogeneity is a hot issue and almost daily new findings are reported which question many of the paradigms in cancer biology. Not only the paradigms change, but there are also practical implications. What is the value of molecular analysis of a single tumor sample if different tumor subclones exist with differences in molecular make-up impacting on the choice of therapy? Prostate cancer is often multifocal and separate foci are histologically heterogeneous, which might be a reflection of molecular heterogeneity. The authors examined methylation of promoter sequences of a set of tumor suppressor genes in paired samples of multifocal prostate cancer and benign prostate tissue. They found promoter methylation of many tumor suppressor genes in most or all of the cancer samples. Of several genes, methylations levels differed between paired cancer foci. Methylation levels were generally higher in prostate cancer than in benign prostate tissue. The highest levels of DNA methylation were found in cases with biochemical recurrence. Tumor suppressor gene loss through promoter methylation might therefore be a mechanism involved in prostate cancer progression.

We rarely publish purely experimental papers but the paper by Van Oosterwijk et al. [4] is a noticeable exception. The paper describes a mouse model for chondrosarcoma, which can be used for screening of new treatment options. The authors transduced existing chondrosarcoma cell lines with a lentiviral expression vector to make the cells bioluminescent. These were implanted subcutaneously and orthotopically in nude mice. Tumor growth could then be monitored over time by in vivo imaging. As proof of principle, the authors show that doxorubicin does not affect in vivo tumor growth. For testing new drugs before entering into the clinic, such models are essential.

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