Reviewer’s report

Title: Expression of the embryonic stem cell marker SOX2 in early-stage breast carcinoma

Version: 1 Date: 30 November 2010

Reviewer: Holm Zaehres

Reviewer’s report:

General comment
The description and functional analysis of the pluripotency – associated transcription factors OCT4, SOX2 and NANOG in human cancer cells is a relevant topic of current cancer biology research. The report describes SOX2 expression in early stage breast carcinomas and related metastatic lymph nodes of 95 patient samples using immunohistochemistry and qRT-PCR analysis. Four different scores of SOX2 positivity are statistically correlated with clinical pathological parameters. The report extends previous studies by Rodriguez-Pinilla et al. (2007) Mod Pathol und Bass et al. (2009) Nature Genetics. The report has merit as a rather descriptive study, which has to be complemented with future more functional studies of SOX2 in breast carcinoma (knockdown, overexpression, promoter studies).

Major Compulsory Revisions
We do not understand the presentation of the qRT-PCR analysis. Why are SOX2, NANOG and OCT4 expression presented as one bar ? The three factors should be represented independently or we would like to know why the authors used this representation. On which 18 samples is the analysis done ? Has the analysis be done in triplicates ? Figure 3 is currently also not part of the Results section.

Minor Essential Revisions
Bass et al. (2009) Nature Genetics is cited three times as reference 11, 20 and 43.

Discretionary Revisions
Is it BMC Cancer style to allow citation of submitted papers (Wilbertz et al., page 9) - is this report from the same group ?

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests' below.