A marker of homologous recombination predicts pathological complete response to neoadjuvant chemotherapy in primary breast cancer

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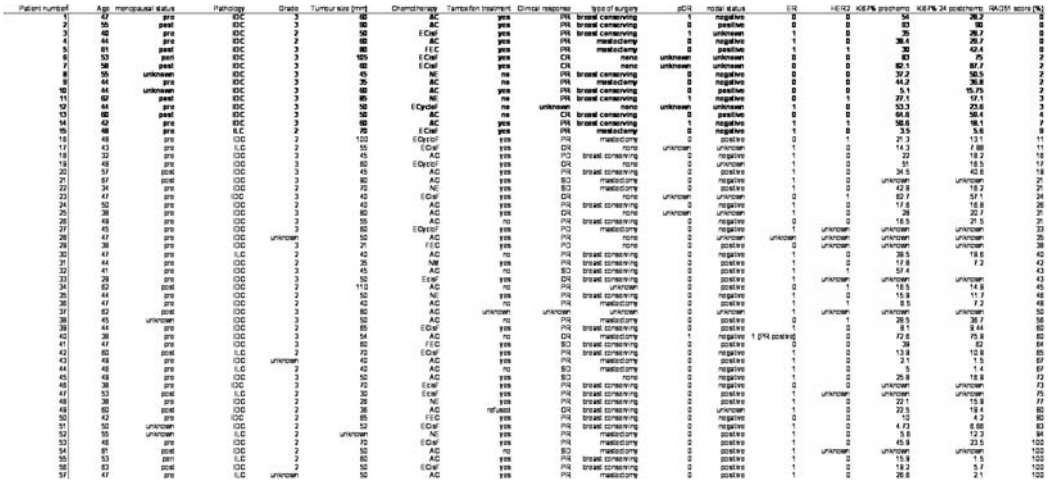
Supplementary table and figure legends

Supplementary Table 1. Antibodies used for assessment of Rad51 foci in FFPE material.

Antigen	Supplier	Clone
Rad51	Abcam	ab54188
Rad51	Abcam	ab1837
Rad51	Abcam	ab20240
Rad51	Abcam	ab213
Rad51	Abcam	ab12448
Rad51	GeneTex	13E4
Rad51	GeneTex	14B4
Rad51	Calbiochem	Ab-1

Supplementary Table 2. Full data set of clinicopathological data from study



Supplementary Table 3. Multivariate analysis of clinicopathological features that are associated with RAD51 score in univariate analysis.

Model 1

	OR	95%CI_lower	95%CI_upper	P value
ER+/HER2- subtype	1	-	-	
HER2 subtype	1.76	0.25	12.64	0.57
TN subtype	5.74	0.66	50	0.11
Grade	1.74	0.23	13.38	0.59
Baseline Ki67	1.02	0.98	1.06	0.28

Model 2

	OR	95%CI_lower	95%CI_upper	P value
ER+/HER2- subtype	1	-	-	
Baseline Ki67	1.03	0.992275985	1.068583564	0.12
TN subtype	5.78	1.021599156	32.67371069	**0.047**

In the first model all factors significant in univariate analysis are included. No variables reach statistical significance, potentially due to the number of variables for a data set of this size. A second model was fitted using tumour subtype and baseline Ki67, identifying TN subtype as an independent predictor.

Method. Modeling of predictors of RAD51 foci was performed by fitting generalised linear models in R. Ki67 was treated as a continuous predictor; all other dependent variables were categorical and the most common group of each category was chosen as the referent. The best fitting models was selected by AIC using a backward stepwise algorithm.

Reference. R Development Core Team (2009). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org.

Supplementary Figure 1. Flow chart of patients included in study, and reasons for exclusion.

Supplementary Figure 2. Assessment of γH2AX in cancers with and without RAD51 foci.

Assessment of γH2AX in baseline and 24 hours post chemotherapy biopsies, from 3 patients with high RAD51 score and four patients with low RAD51 score (RAD51 score displayed below graph). Displayed is the percentage of cancer cells positive for γH2AX in each biopsy, and the absolute change in γH2AX percentage. γH2AX was assessed in the consecutive section to that assessed for RAD51. Only tumour cells that have transitioned through S phase during the 24 hour post chemotherapy are likely to be γH2AX positive.

Supplementary Figure 3. Assessment of γH2AX in cancers without RAD51 foci.

Illustrative images from supplementary figure 2, γH2AX (green) and DAPI nuclear stain (Blue). γH2AX staining was induced across tissue core. A Slide 157 (RAD51 score 0%), B Slide 97 (RAD51 score 7%), C Slide 53 (RAD51 score 0%), D Slide 159 (RAD51 score 0%).