Supplementary Table 1. **Association of ERα status in a cohort of invasive ductal breast carcinomas with clinicopathological parameters and AR immunostaining**

	ERα positive (≥10%) (n=157)	ERα negative (<10%) (n=58)	p value*
Age (median years, range)	54.0 (29-87)	55.9 (24.0-80.0)	*p*=0.435
Tumor size (mm)	15.5 (3.0-75.0)	23.0 (7.0-80.0)	*p*<0.0001
Histological grade			
well	33	3	*p*<0.0001
moderate	74	8	
poor	50	47	
Nodal status			
negative	79	29	*p*=0.879
positive	75	29	
missing	3		
PR status			
negative (≤10%)	39	53	*p*<0.0001
positive (>10%	118	5	
HER-2/neu status[a]			
negative	133	38	*p*=0.002
positive	19	18	
missing	5	2	
AR level (median % positive cells, range)	83.0 (0-96.0)	25.5 (0-95.0)	*p*<0.0001
Death to breast cancer			
No	136	39	*p*=0.003
Yes	21	19	

a= HER-2/*neu* status determined using fluorescence in situ hybridization
* p value by Chi-Squared test for all variables except Age, Tumor size and AR, which were assessed by the Mann Whitney U test

Supplementary Table 2. **Univariate Cox Regression analyses for relapse-free survival and overall survival in ERα positive cohort**

Variable	Relapse-free survival			Overall survival		
	Relative risk	95% CI	P value	Relative risk	95% CI	P value
Tumor size [a] (n=149)	1.63	0.82-3.23	0.163	1.49	0.61-3.66	0.383
Grade[b] (n=145)	7.19	0.97-53.1	0.053	4.10	0.54-30.98	**0.170**
Lymph status[c] (n=150)	2.74	1.33-5.65	**0.008**	1.65	0.67-4.05	**0.27**
PR status[d] (n=153)	0.35	0.18-0.69	**0.002**	0.21	0.09-0.50	**<0.0001**
HER-2/neu status [e] (n=148)	3.59	1.72-7.51	**0.001**	5.10	1.99-13.08	**0.001**
AR status [f] (n=153)	0.42	0.21-0.82	**0.011**	0.24	0.09-0.62	**0.003**

Supplementary Table 3. Multivariate analysis of all significant variables in univariate analysis in ERα positive cohort

Variable	Relapse-free survival (n=137)			Overall survival (n=141)		
	Relative risk	95% CI	P value	Relative risk	95% CI	P value
Lymph node status[c]	2.30	1.13-5.46	0.033	-	-	-
Grade	3.77		0.198	-	-	-
PR status[d]	0.41	0.21-0.91	**0.016**	0.21	0.09-0.50	**<0.0001**
HER-2/neu status[e]	3.62	1.63-8.05	**0.002**	7.38	2.69-20.27	**<0.0001**
AR status[f]	0.33	0.20-0.85	**0.003**	0.22	0.08-0.58	**0.002**

a = tumor size (mm) as a dichotomous variable cut point <20 vs ≥20

b= tumor grade (well or moderate vs poor)

c= lymph node status (negative vs positive)

d = PR status (% positive cells) as a dichotomous variable cut point <10 vs ≥10

e=HER-2/*neu* status (negative vs positive) determined by fluorescence in situ hybridization

f= AR status (% positive cells) as a dichotomous variable median cut point <75 vs ≥75