Supplementary Table 1. Association of MnSOD Val16Ala and patient characteristics with race/ethnicity

	Norwegian Patients (n=329)	European-Americans (n=105)	African-Americans (n=139)	*P*-value[†]
Val16Ala Genotype				
Val/Val	75 (23%)	30 (28%)	46 (33%)	0.155
Val/Ala	174 (53%)	52 (50%)	69 (50%)	
Ala/Ala	80 (24%)	23 (22%)	24 (17%)	
Patient Characteristic*				
Age at diagnosis (Mean ± S.D.)	62.5 ± 13.8	55.9 ± 13.2	54.3 ± 14.2	0.735[1]
Tumor Size				
T1	90 (28%)	25 (29%)	28 (25%)	0.001[2]
T2	95 (30%)	42 (49%)	51 (46%)	
T3	78 (24%)	15 (17%)	26 (23%)	
T4	56 (18%)	4 (5%)	6 (5%)	
Node Involvement				
No	136 (45%)	63 (64%)	46 (61%)	<0.001[3]
Yes	167(55%)	35 (36%)	69 (39%)	
Grade				
1	41 (13%)	17 (20%)	16 (13%)	<0.001[4]
2	177 (56%)	37 (43%)	37 (30%)	
3	100 (31%)	32 (37%)	72 (57%)	
Estrogen Receptor Status				
Negative	96 (31%)	34 (33%)	66 (47%)	0.002[5]
Positive	216 (69%)	70 (67%)	53 (53%)	
TP53 Mutation Status				
Negative	226 (70%)	90 (86%)	108 (77%)	0.003[6]
Positive	98 (30%)	15 (14%)	31 (22%)	
Adjuvant Chemotherapy				
No	123 (39%)	46 (49%)	52 (40%)	0.201
Yes	194 (61%)	48 (51%)	80 (60%)	

* Cases with missing information are not included

[†] Chi-square test and One-Way Anova (age at diagnosis) were used to compare differences in patient characteristics.

[1]One-way ANOVA with Bonferroni's correction for multiple comparisons found a significant difference in age at diagnosis between Norwegians and European-Americans (P <0.001) and Norwegians and African-Americans (P <0.001), but not between European-Americans and African-Americans (P =1.0)

[2] Individual Chi-square tests found a significant difference in tumor size between Norwegians and European-Americans (P <0.001), Norwegians and African-Americans (P =0.002), but not between European-Americans and African-Americans (P =0.744)

[3] Individual Chi-square tests found a significant difference in nodal involvement between Norwegians and European-Americans (P <0.001), Norwegians and African-Americans (P =0.002), but not between European-Americans and African-Americans (P =0.607)

[4] Individual Chi-square tests found a significant difference in tumor grade between Norwegians and African-Americans (P <0.001), European-Americans and African-Americans (P =0.014), but not Norwegians and European-Americans (P =0.084)

[5] Individual Chi-square tests found a significant difference in estrogen receptor status between Norwegians and African-Americans (P =0.001), European-Americans and African-Americans (P =0.02), but not Norwegians and European-Americans (P =0.71)

[6] Individual Chi-square tests found a significant difference in *TP53* mutation status between Norwegians and European-Americans (P =0.001), but not European-Americans and African-Americans (P =0.113), nor Norwegians and African-Americans (P =0.08)

Supplementary Table 2. Race/ethnicity and breast cancer-specific survival

	Univariate		Multivariate*	
	HR (95% CI)	***P*-value**	**HR (95% CI)**	***P*-value**
5-year survival				
African-American (n=139)	1 (ref.)		1	
European descent (n=434)	0.77 (0.55–1.02)	0.152	0.65 (0.42–1.01)	0.051
10-year survival				
African-American (n=139)	1		1	
European descent (n=434)	0.82 (0.59–1.13)	0.232	0.75 (0.50–1.10)	0.139

Cox Proportional-Hazards regression with adjustments for age at diagnosis, study site, tumor size, tumor grade, nodal involvement, and estrogen receptor and p53 mutational status

Supplementary Table 3. Effect of tamoxifen treatment* on the association of Val16Ala with 10-year breast cancer-specific survival in ER-positive patients

	Univariate		Multivariate†	
	HR (95% CI)	***P*-value**	**HR (95% CI)**	***P*-value**
Norway ER-positive (with Tamoxifen)	**(n=216)**		**(n=198)**	
Val/Val	1 (ref.)		1 (ref.)	
Val/Ala	1.09 (0.57-2.11)	0.774	0.95 (0.47-1.91)	0.881
Ala/Ala	2.11 (1.08-4.13)	0.028	2.45 (1.18-5.06)	0.016
Val/Ala & Ala/Ala	1.42 (0.77-2.58)	0.260	1.33 (0.70-2.53)	0.383
	P_{trend}	0.014		
Val/Val & Val/Ala	1 (ref.)		1 (ref.)	
Ala/Ala	1.99 (1.22-3.25)	0.005	2.26 (1.36-3.77)	0.002
US ER-positive (no Tamoxifen)	**(n=64)**		**(n=43)**	
Val/Val	1 (ref.)		1 (ref.)	
Val/Ala	1.48 (0.54-4.09)	0.441	0.94 (0.19-4.52)	0.936
Ala/Ala	0.80 (0.21-3.01)	0.747	n/a	
Val/Ala & Ala/Ala	1.25 (0.47-3.38)	0.647	1.01 (0.22-4.55)	0.989
	P_{trend}	0.754		
Val/Val & Val/Ala	1 (ref.)		1 (ref.)	
Ala/Ala	0.59 (0.20-1.73)	0.338	2.61 (0.37-18.6)	0.338
US ER-positive (with Tamoxifen)	**(n=68)**		**(n=58)**	
Val/Val	1 (ref.)		1 (ref.)	
Val/Ala	1.91 (0.46-8.02)	0.374	n/a	
Ala/Ala	4.13 (0.92-18.5)	0.064	35.0 (0.3-3768)	0.137
Val/Ala & Ala/Ala	2.53 (0.68-9.37)	0.163	3.40 (0.64-17.9)	0.149
	P_{trend}	0.057		
Val/Val & Val/Ala	1 (ref.)		1 (ref.)	
Ala/Ala	2.86 (0.86-9.52)	0.087	4.51 (0.71-28.4)	0.109

* Information on tamoxifen treatment was abstracted from medical records. All ER-positive patients in Norway received tamoxifen

† Cox Proportional-Hazards regression with adjustments for age at diagnosis, study site, race, tumor size, tumor grade, nodal involvement, and p53 mutation. n/a = could not computed

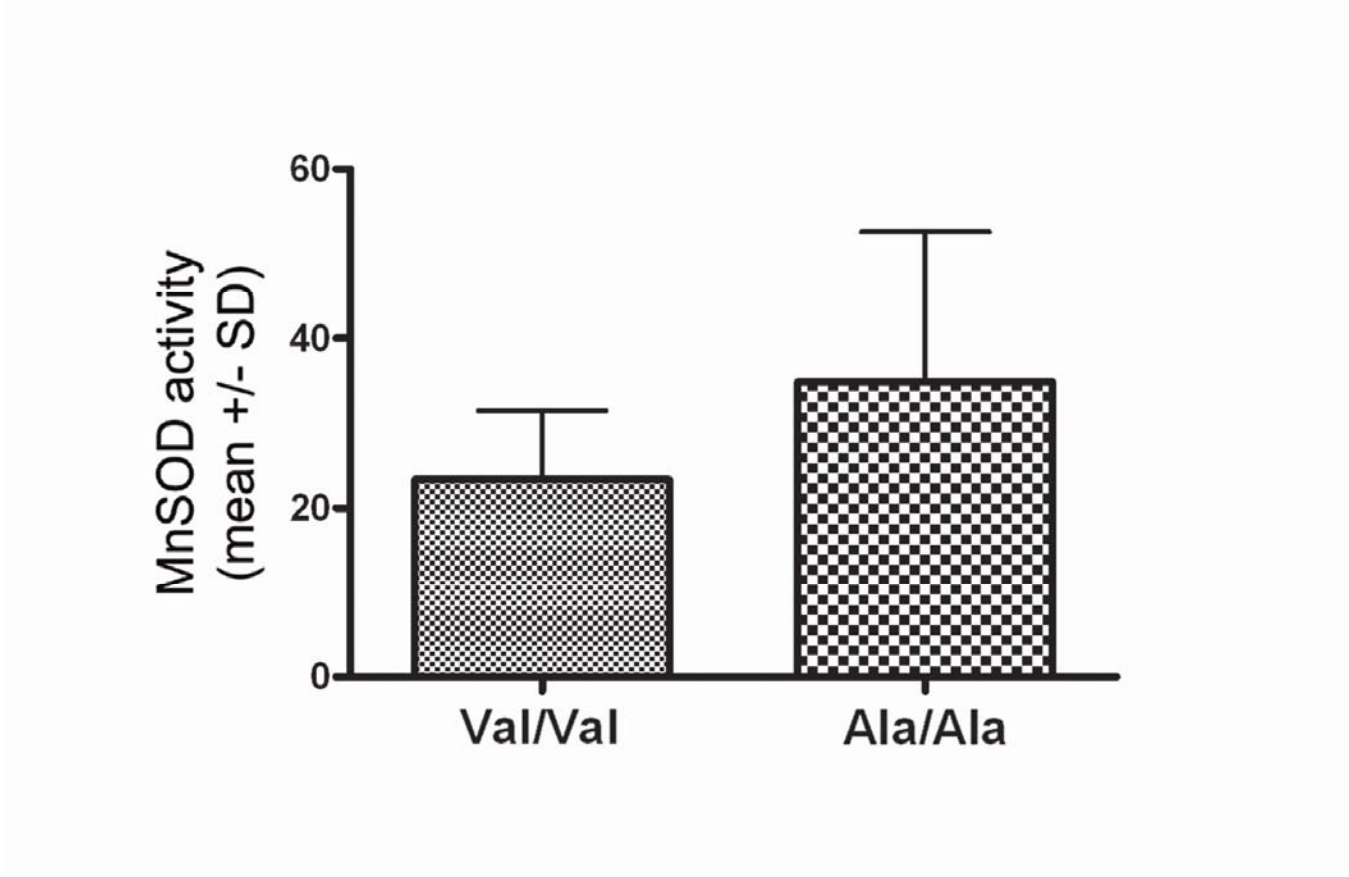

Figure S1: MnSOD activity in human lymphoblast cells by Val16Ala genotype. Shown is the mean MnSOD activity ± SD for lymphoblast cell lines with the Val/Val (n=5) and Ala/Ala (n=5) *SOD2* genotypes. Lymphoblast cells with the Ala/Ala genotype have an average 49% increase in MnSOD activity compared with cells that have the Val/Val genotype (P = 0.052).