

Supplementary Table S1. Plasma cytokine levels and determination of cutpoint concentrations

plasma markers		N	average	median	low	high	cutpoint
IL-RA1	total	105	858.6	379.3	0	5842.1	300
	group 1	60	659.5	309.4	0	4755.2	
	group2	45	1119.8	641.1	0	5842.1	
IL-1 β	total	113	24.61	2.24	0	402.9	3
	group 1	60	16.1	2.1	0	240	
	group2	53	34.2	2.2	0	402.9	
TNF α	total	113	102.4	16.7	0	821.4	60
	group 1	60	94.3	17.3	0	642.4	
	group2	53	110.8	16.7	0	821.4	
IL-6	total	94	45.41	10.51	0	429.8	18
	group 1	54	38.9	13.2	0.8	370.5	
	group2	40	53.2	4.7	0	429.8	
IL-2	total	101	44.97	0	0	927.8	3
	group 1	59	38.1	0.2	0	526.7	
	group2	42	54.5	0	0	927.8	

Supplementary Table S2. Identification of DNA probes used to detect cytokine SNPs

Gene	Gene Name	other names	Polymorphism	Context Sequence [VIC/FAM]:	SNP #
IL1RN	interleukin 1 receptor antagonist		A/G	GGCCTTGGCTTCTGCTGAT GGTGCC[A/G]TGTATTTAC CAGACTTAGTGGTCCA	rs579543
IL1RN	interleukin 1 receptor antagonist		C/T	TAAGTCTAAGATAGGGCA GTAGCA[C/T]CAGGTCCAT TTTGCAGCTGTCAAAA	rs4251961
IL1B	interleukin 1 beta	aka+3954	G/A	TACCTTGGGTGCTGTTCTC TGCCTC[G/A]GGAGCTCTC TGTC AATTGCAGGAGC	rs16944
IL1B	interleukin 1 beta	aka-511	G/A	CATAAGCCTCGTTATCCCA TGTGTC[G/A]AAGAAGATA GGTTCTGAAATGTGGA	rs1143634
IL6	interleukin 6	IL-6-01, ex2C>G, aka-174	C/G	ACTTTTCCCCCTAGTTGTG TCTTGC[C/G]ATGCTAAAG GACGTCACATTGCACA	rs1800795
TNF	tumor necrosis factor alpha	TNF-02, -487A>G, aka-308	A/G	GAGGCAATAGGTTTTGAG GGGCATG[A/G]GGACGGG GTTCAGCCTCCAGGGTCC	rs1800629

Supplementary Table S3. Patient clinicopathological characteristics and clinical outcome.

Hormone receptor status	breast cancer specific survival														
	total					Group1					Group 2				
	N	median survival (months)	Hazard ratio (95% CI)	X ²	p	N	median survival (months)	Hazard ratio (95% CI)	X ²	p	N	median survival (months)	Hazard ratio (95% CI)	X ²	p
HER-2	117	28.4 vs 15.5	0.56 (0.38-0.83)	8.41	0.004	67	27.4 vs 12.7	0.51 (0.30-0.86)	6.28	0.012	50	31.1 vs 16.6	0.50 (0.27-0.93)	4.8	0.03
Estrogen receptor	113	13.7 vs 27.4	1.38 (0.92-2.06)	2.45	0.12	64	11.6 vs 28.4	1.50 (0.87-2.58)	2.09	0.15	49	14.4 vs 25.7	1.41 (0.77-2.56)	1.24	0.27
Progesterone receptor	108	15.2 vs 28.6	1.35 (0.91-2.00)	2.22	0.14	62	11.6 vs 28.4	1.52 (0.87-2.66)	2.19	0.14	46	17.9 vs 30.7	1.21 (0.66-2.22)	0.38	0.56
Metastasis															
# metastatic sites	130	26.6 vs 17.2	0.62 (0.43-0.91)	6.1	0.014	74	20.7 vs 17.5	0.68 (0.41-1.15)	2.07	0.15	56	28.1 vs 16.0	0.51 (0.29-0.90)	5.48	0.02
Other	130	23.1 vs 17.5	0.65 (0.39-1.06)	3	0.08	74	19.9 vs 12.1	0.75 (0.40-1.43)	0.76	0.38	56	14.9 vs 22.4	0.59 (0.29-1.22)	2	0.16
Lymph	130	21.4 vs 22.4	1.18 (0.91-1.71)	0.75	0.38	74	21.4 vs 22.4	1.07 (0.63-1.82)	0.07	0.79	56	20.8 vs 24.3	1.23 (0.71-2.13)	0.53	0.47
Liver	130	25.1 vs 8.7	0.24 (0.12-0.48)	16.8	1E-04	74	25.1 vs 8.4	0.13 (0.04-0.36)	15	0.0001	56	25.3 vs 8.4	0.34 (0.14-0.82)	5.8	0.01
Lung	130	25.3 vs 16.3	0.53 (0.35-0.82)	8.3	0.004	74	19.9 vs 20.3	0.76 (0.43-1.33)	0.93	0.33	56	28.1 vs 15.4	0.33 (0.17-0.65)	10.4	0
Bone	130	15.1 vs 21.6	1.33 (0.93-1.89)	2.44	0.12	74	13.6 vs 27.5	1.34 (0.83-2.16)	1.5	0.23	56	17.4 vs 27.4	1.43 (0.83-2.47)	1.7	0.2
progression-free survival															
HER-2	117	12.5 vs 7.8	0.52 (0.35-0.78)	10.2	0.001	67	11.7 vs 6.9	0.44 (0.25-0.76)	8.82	0.003	50	12.9 vs 7.8	0.65 (0.36-1.16)	2.14	0.14
Estrogen receptor	113	6.9 vs 12.5	1.20 (0.81-1.78)	0.791	0.37	64	6.3 vs 13.2	1.58 (0.90-2.75)	2.55	0.11	49	8.3 vs 9.1	1.00 (0.56-1.78)	1E-04	0.99
Progesterone receptor	108	7.4 vs 11.2	1.12 (0.76-1.65)	0.31	0.58	62	6.3 vs 12.0	1.40 (0.81-2.44)	1.44	0.23	46	8.8 vs 10.6	0.85 (0.46-1.57)	0.268	0.6
Metastasis															
# metastatic sites	130	12.4 vs 8.0	0.50 (0.34-0.74)	12.1	5E-04	74	11.8 vs 8.4	0.54 (0.32-0.94)	4.83	0.28	56	12.4 vs 7.8	0.44 (0.25-0.79)	7.7	0.01
Other	130	10.3 vs 8.6	0.54 (0.32-0.91)	5.3	0.02	74	10.4 vs 8.3	0.50 (0.25-1.04)	3.5	0.06	56	9.2 vs 8.2	0.57 (0.27-1.19)	2.26	0.13

Lymph	130	10.4 vs 8.2	0.93 (0.64-1.38)	0.11	0.74	74	12.4 vs 6.9	0.74 (0.42-1.32)	1	0.31	56	8.7 vs 11.8	1.31 (0.76-2.24)	0.95	0.33
Liver	130	10.7 vs 6.8	0.35 (0.19-0.66)	10.5	0.001	74	10.9 vs 4.2	0.10 (0.03-0.28)	17.8	<0.001	56	10.6 vs 6.8	0.31 (0.13-0.77)	6.4	0.01
Lung	130	10.7 vs 8.0	0.57 (0.37-0.87)	6.7	0.009	74	10.5 vs 9.3	0.76 (0.43-1.32)	0.96	0.33	56	10.7 vs 6.9	0.41 (0.22-0.78)	7.3	0.01
Bone	130	7.4 vs 12.4	1.29 (0.91-1.84)	1.9	0.16	74	6.9 vs 13.0	1.34 (0.83-2.16)	1.4	0.23	56	8.8 vs 9.1	1.21 (0.71-2.07)	0.5	0.48