

**Supplementary Table 1.** Clinicopathological characteristics associated with number of positive ALNs

Characteristic	No. of positive ALNs		P-value
	0-2	≥3	
No. of patients	1,925	58	
Age (yr)	53.22 ± 10.80	52.48 ± 10.60	0.609
<50	849 (44.1)	24 (41.4)	0.680
≥50	1,076 (55.9)	34 (58.6)	
Preoperative diagnosis method			
Core needle biopsy	1,838 (95.5)	55 (94.8)	0.814
Excision	87 (4.5)	3 (5.2)	
Tumor size (cm)	1.61 ± 0.85	2.49 ± 0.70	<0.001
≤2	1,412 (73.4)	14 (24.1)	<0.001
>2, ≤5	513 (26.6)	44 (75.9)	
Multifocality by MRI			
Unifocal	447 (23.4)	16 (27.6)	0.753
Multifocal	1,429 (74.7)	41 (70.7)	
Unknown	38 (2.0)	1 (1.7)	
Tumor location			
Upper outer	1,053 (54.7)	43 (74.1)	0.011
Lower outer	239 (12.4)	8 (13.8)	
Central	75 (3.9)	1 (1.7)	
Upper inner	461 (23.9)	3 (5.2)	
Lower inner	97 (5.0)	3 (5.2)	
Histologic subtype			
IDCa	1,600 (83.1)	54 (93.1)	0.189
ILCa	98 (5.1)	2 (3.4)	
Tubular, mucinous	91 (4.7)	0 (0)	
Others	136 (7.1)	2 (3.4)	
Histologic grade			
Low <sup>a)</sup>	1,366 (71.0)	28 (48.3)	<0.001
High <sup>b)</sup>	516 (26.8)	30 (51.7)	
Unknown	43 (2.2)	0 (0)	
ER and/or PR			
Positive	1,546 (80.3)	46 (79.3)	0.850
Negative	379 (19.7)	12 (20.7)	
HER2			
Positive	236 (12.3)	10 (17.2)	0.591
Negative	1,667 (86.6)	48 (82.8)	
Equivocal	22 (1.1)	0 (0)	
Ki67 (%)			
<25	1,014 (52.7)	17 (29.3)	<0.001
≥25	909 (47.3)	41 (70.7)	
Mammography			
No suspicious ALN	1,634 (84.9)	30 (51.7)	<0.001
Only 1 suspicious ALN	76 (3.9)	7 (12.1)	
>1 suspicious ALN	107 (5.6)	16 (27.5)	
Sonography			
No suspicious ALN	1,107 (57.5)	11 (19.0)	<0.001
Only 1 suspicious ALN	223 (11.6)	12 (20.7)	
>1 Suspicious ALN	494 (25.7)	29 (50.5)	
MRI			
No suspicious ALN	779 (40.5)	4 (6.9)	<0.001
Only 1 suspicious ALN	166 (8.6)	6 (10.3)	
>1 Suspicious ALN	954 (49.6)	46 (79.3)	

**Supplementary Table 1.** Continued

Characteristic	No. of positive ALNs		P-value
	0-2	≥3	
PET-CT or chest CT			
No suspicious ALN	1,137 (59.1)	15 (25.9)	<0.001
Only 1 suspicious ALN	130 (6.8)	11 (19.0)	
>1 Suspicious ALN	559 (29.0)	29 (50.0)	

Values are presented as number only, mean ± standard deviation, or number (%).

ALN, axillary lymph node; IDCa, invasive ductal carcinoma; ILCa, invasive lobular carcinoma; ER, estrogen receptor; PR, progesterone receptor; HER2, human epidermal growth factor receptor 2.

<sup>a)</sup>Grade 1 and 2, <sup>b)</sup>grade 3.