

	Study A		Study B	
Age Distribution	30-39	>39	30-39	>39
# of patients	3	37	5	35
Race	3 – White 0- Black	36 – White 1– Black	3 – White 1- Black 1-others	32 – White 3– Black
Ethnicity	3 – Non-hispanic	36 – Non-hispanic 1 Hispanic	5 – Non-hispanic	34 – Non-hispanic 0 Hispanic 1- unknown
Metastasis	3 – No	27 – No 9 – Yes 1 – Unknown	3 – No 1-Yes 1-unknown	17 – No 10 – Yes 8– Unknown
Cancer Type*	2 – INV 1 – DCIS	28 – INV 9 – DCIS	1 – INV 3 – DCIS 1-unknown	22 – INV 5 – DCIS 8-Unknown
Tumor Size**	m = 1.15 [0.2,1.7]	m = 1.98 [0,5]	m = 1.3 [0.5,3.0]	m = 2.57 [0,5.4]
Tumor Grade***	1-GII 2-GIII	8-GI 10-GII 15-GIII 4-unknown	1-GII 3-GIII 1-unknown	3-GI 8-GII 15-GIII 9-unknown

* - INV: invasive; DCIS: ductal carcinoma in situ

** - the mean (m) is based on all defined values, including 0; the range shown excludes tumor size of 0

*** GI: tumor grade I, GII: tumor grade II, GIII, tumor grade III

Supplementary Table S1. Breast cancer plasma sources. The patients from Study A and Study B showed comparable age, metastasis, cancer type, tumor size and tumor grade. The healthy samples from both Study A and Study B were obtained from women with an average age of 47 years and a median of 49 years, which showed comparable mean ages with breast cancer samples in Study A and Study B (an average age of 52 years and a median of 52 years).