

**Supplementary Table S1. Updated objective response rate for the ITT population.**

	Abemaciclib + Trastuzumab + Fulvestrant (Arm A) (N=79)		Abemaciclib + Trastuzumab (Arm B) (N=79)		Trastuzumab + Chemotherapy (Arm C) (N=79)		Stratified Odds Ratio (95% CI) <sup>b</sup>		Stratified p-value <sup>c</sup>	
	n (%)	(95% CI) <sup>a</sup>	n (%)	(95% CI) <sup>a</sup>	n (%)	(95% CI) <sup>a</sup>	Arm A/ Arm C	Arm B/ Arm C	Arm A vs Arm C	Arm B vs Arm C
<b>Best Overall Response</b>										
CR	1 (1.3)	(0.0-3.7)	0 (0.0)	N/A	1 (1.3)	(0.0-3.7)				
PR	27 (34.2)	(23.7-44.6)	11 (13.9)	(6.3-21.6)	10 (12.7)	(5.3-20.0)				
SD	34 (43.0)	(32.1-54.0)	48 (60.8)	(50.0-71.5)	42 (53.2)	(42.2-64.2)				
SD persistent for ≥6 month	18 (22.8)	(13.5-32.0)	25 (31.6)	(21.4-41.9)	19 (24.1)	(14.6-33.5)				
PD	10 (12.7)	(5.3-20.0)	13 (16.5)	(8.3-24.6)	14 (17.7)	(9.3-26.1)				
Objective PD	10 (12.7)	(5.3-20.0)	13 (16.5)	(8.3-24.6)	14 (17.7)	(9.3-26.1)				
NE	7 (8.9)	(2.6-15.1)	7 (8.9)	(2.6-15.1)	12 (15.2)	(7.3-23.1)				
ORR	28 (35.4)	(24.9-46.0)	11 (13.9)	(6.3-21.6)	11 (13.9)	(6.3-21.6)	3.5 (1.6-7.8)	0.9 (0.4-2.4)	0.001	1.000
DCR	62 (78.5)	(69.4-87.5)	59 (74.7)	(65.1-84.3)	53 (67.1)	(56.7-77.5)	2.1 (1.0-4.3)	1.4 (0.7-2.8)	0.065	0.376
CBR	46 (58.2)	(47.4-69.1)	36 (45.6)	(34.6-56.6)	30 (38.0)	(27.3-48.7)	2.7 (1.4-5.3)	1.3 (0.7-2.5)	0.003	0.413

Abbreviations: Arm A = abemaciclib 150mg + trastuzumab 8mg/kg + fulvestrant 500mg; Arm B = abemaciclib 150mg + trastuzumab 8mg/kg; Arm C = trastuzumab 8mg/kg + chemotherapy. CBR: clinical benefit rate (CR/PR/SD persistent for ≥6 month); CR: complete response; CI: confidence interval; DCR: disease control rate (CR/PR/SD); N: number of subjects in population; n: number of subjects; NE: non evaluable; ORR: overall response rate (CR/PR); PD: progressive disease; PR: partial response; SD: stable disease. Response criteria used was RECIST 1.1.

<sup>a</sup> CIs are based on the normal approximation.

<sup>b</sup> Stratified by number of previous systemic regimens, measurable disease at baseline

<sup>c</sup> p-value is calculated by Exact Cochran-Mantel-Haenszel test stratified by the randomization strata number of previous systemic regimens, measurable disease at baseline.