## **SUPPLEMENTARY INFORMATION**

## **SUPPLEMENTARY TABLES**

 Table \$1.
 Summary of studies included in the analysis

Study identifier	Study design	Study drug administration	Patients, N	Patient diagnosis	Sampling schedule
DS8201-A-J101	Phase 1, 2-part,	FL-DP1 or FL-DP2 T-DXd IV infusion	<u>Planned</u>	Part 1: advanced breast cancer or	Prior to and after the infusion for
(Study J101)	multicenter,	Q3W	Dose escalation	gastric/gastroesophageal junction	cycles 1, 2, 3, 4, 6, and 8; at 2, 4, and 7
	nonrandomized,	Dose escalation (part 1)	(part 1):	adenocarcinoma	hours after start of infusion on cycle
	open-label, multiple-	0.8, 1.6, 3.2, 5.4, 6.4, or 8.0 mg/kg	≥ 18	Part 2a: T-DM1-treated HER2-	1; on day 2, 4, 8, and 15 of cycle 1;
	dose, first-in-human	Dose expansion (part 2)	Dose expansion	overexpressing breast cancer	and on day 8 and 15 of cycle 3 <sup>a,b</sup>
	study	5.4 or 6.4 mg/kg	(part 2):	Part 2b: Trastuzumab-treated HER2-	
			≈ 260	overexpressing gastric or gastroesophageal	
			<u>Treated</u>	junction adenocarcinoma	
			Part 1: 27	Part 2c: low HER2-expressing breast cancer	
			Part 2: 262	Part 2d: other HER2-expressing solid	
				malignant tumors	
				Part 2e: HER2-expressing breast cancer	
DS8201-A-U201	Phase 2, 2-part,	FL-DP2 or Lyo-DP T-DXd IV infusion	<u>Planned</u>	T-DM1-treated HER2-positive, unresectable	Prior to and after the infusion on
(Study U201)	global, multicenter,	Q3W	Part 1: ≈ 120	and/or metastatic breast cancer	cycles 1, 2, 3, 4, 6, and 8; at 2, 4, and 7
	randomized, open-	Part 1	Part 2: ≥ 100		hours after start of infusion on cycle
	label, multiple-dose	5.4, 6.4, or 7.4 mg/kg	<u>Treated</u>		1; on days 8 and 15 of cycle 1; and at
	study	Part 2	Part 1: 119		4 and 7 hours after the start of
		5.4 mg/kg	Part 2: 134		infusion in cycle 3 <sup>b,c</sup>
DS8201-A-J102	Phase 1, multicenter,	Lyo-DP T-DXd 6.4 mg/kg IV infusion	<u>Planned</u>	HER2-expressing metastatic and/or	Similar to the PK stage of study U201
(Study J102)	nonrandomized,	Q3W	50	unresectable breast cancer	but with additional collection points
	open-label, multiple-		<u>Treated</u>		at 2 hours after the start of infusion
500001 1 1100	dose study		51		and days 2, 4, 8, and 15 of cycle 3
DS8201-A-A103	Phase 1, multicenter,	Lyo-DP T-DXd 6.4 mg/kg IV infusion	<u>Planned</u>	HER2-positive, advanced, unresectable	Similar to the PK stage of study U201
(Study A103)	nonrandomized,	Q3W	12	and/or refractory gastric/gastroesophageal	but with additional collection points
	open-label study		<u>Treated</u>	junction adenocarcinoma or breast cancer	at 2 hours after the start of infusion
	51 4 10 .		12		and days 2, 4, 8, and 15 of cycle 3
DS8201-A-A104	Phase 1, multicenter,	Lyo-DP T-DXd 5.4 mg/kg IV Q3W	<u>Planned</u>	HER2-expressing advanced solid tumors	Prior to and after the infusion on
(Study A104)	nonrandomized,	Cohort 1	Cohort 1: 16		cycles 1, 2, 3, 4, 6, and 8; at 2, 4, and 7
	open-label, single-	+ ritonavir 200 mg BID on day 17 of	Cohort 2: 16		hours after the start of infusion on
	sequence crossover	cycle 2 until day 21 of cycle 3	Treated Cohort 1: 17		cycles 2 and 3; and at days 2, 4, 8, 12,
	DDI study	Cohort 2 + itraconazole 200 mg BID on day	Cohort 1: 17		and 17 of cycles 2 and 3 <sup>b</sup>
		17 of cycle 2 followed by 200 mg	CU1011 2. 23		
		, ,			
		once daily until day 21 of cycle 3			

BID, twice daily; DDI, drug-drug interaction; FL-DP1, frozen liquid drug product 1; FL-DP2, frozen liquid drug product 2; HER2, human epidermal growth factor receptor 2; IV, intravenous; Lyo-DP, lyophilized powder drug product; PK, pharmacokinetics; Q3W, every 3 weeks; T-DM1, trastuzumab emtansine; T-DXd, trastuzumab deruxtecan.

<sup>&</sup>lt;sup>a</sup> Additional PK samples were collected at 4 hours from the start of infusion in cycle 3 during dose-escalation phase.

The following time window was allowed for PK samples collected beyond day 1 of cycle 1: ± 2 hours for days 2 and 4; ± 1 day for days 8, 12, 15, and 17; and ± 2 days for day 22.

<sup>&</sup>lt;sup>b</sup> PK samples were also conditionally collected on day 22 if day 1 of the next cycle was delayed by ≥ 3 days or the patient could not continue to the next cycle.

 $<sup>^{\</sup>rm c}$  Additional sampling at days 2 and 4 of cycle 1 was performed for the PK stage of Part 1.

## Table S2. List of covariates

OATP1B/CYP3A inhibitor

Intact T-DXd							
Formulation (FL-DP1, FL-DP2, Lyo-DP)							
Baseline tumor size (ie, sum of diameters of target lesions at baseline)							
Baseline albumin							
Baseline LDH							
HER2 status (positive vs negative vs unknown)							
Tumor type (breast vs gastric vs other)							
Baseline body weight							
Age							
Sex							
Race (white, black or African American, Asian, other)							
Country (Japan vs non-Japan Asia vs non-Japan other)							
Prior HER2 therapy (no vs yes)							
Released Drug							
Formulation (FL-DP1, FL-DP2, Lyo-DP)							
Baseline body weight							
Age							
Sex							
Race (white, black or African American, Asian, other)							
Country (Japan vs non-Japan Asia vs non-Japan other)							
Baseline liver function parameters (alanine aminotransferase, AST, total bilirubin [TBIL]							
Hepatic impairment/function by National Cancer Institute organ dysfunction working group [NCI ODWG]							
criteria)							
Baseline renal function parameters (creatinine clearance)							
Baseline tumor size							

CYP3A, cytochrome P450 gene, 3A subfamily; FL-DP1, frozen liquid drug product 1; FL-DP2, frozen liquid drug product 2; HER2, human epidermal growth factor receptor 2; LDH, lactate dehydrogenase; Lyo-DP, lyophilized powder; OATP1B, organic anion transporting polypeptide 1B transporter.

**Table S3**. Summary of baseline categorical covariates by study

Covariate category	Count (%) <sup>a</sup>							
	Study J101	Study U201	Study J102	Study A103	Study A104	Overall		
	(N = 286)	(N = 250)	(N = 51)	(N = 12)	(N = 40)	(N = 639)		
Formulation								
FL-DP1	265 (92.7)	0	0	0	0	265 (41.5)		
FL-DP2	21 (7.3)	142 (56.8)	0	0	0	163 (25.5)		
Lyo-DP	0	108 (43.2)	51 (100)	12 (100)	40 (100)	211 (33.0)		
Sex								
Female	224 (78.3)	250 (100)	51 (100)	12 (100)	22 (55.0)	559 (87.5)		
Male	62 (21.7)	0	0	0	18 (45.0)	80 (12.5)		
Race								
Asian	190 (66.4)	101 (40.4)	51 (100)	12 (100)	40 (100)	394 (61.7)		
White	80 (28.0)	132 (52.8)	0	0	0	212 (33.2)		
Black or African American	8 (2.8)	5 (2.0)	0	0	0	13 (2.0)		
Other	8 (2.8)	7 (2.8)	0	0	0	15 (2.3)		
Unknown	0	5 (2.0)	0	0	0	5 (0.8)		
Country								
Japan	177 (61.9)	53 (21.2)	51 (100)	0	31 (77.5)	312 (48.8)		
Non-Japan Asia	14 (4.90)	49 (19.6)	0	12 (100)	9 (22.5)	84 (13.2)		
Other	95 (33.2)	148 (59.2)	0	0	0	243 (38.0)		
Hepatic function								
Normal	169 (59.1)	141 (56.4)	26 (51.0)	9 (75.0)	30 (75.0)	375 (58.7)		
Mild impairment	117 (40.9)	105 (42.0)	25 (49.0)	3 (25.0)	10 (25.0)	260 (40.7)		
Moderate impairment	0	1 (0.40)	0	0	0	1 (0.2)		
Unknown	0	3 (1.20)	0	0	0	3 (0.5)		
Tumor type								
Breast cancer	182 (63.6)	250 (100)	51 (100)	12 (100)	17 (42.5)	512 (80.1)		
Gastric/gastroesophageal cancer	47 (16.4)	0	0	0	1 (2.5)	48 (7.5)		
Colorectal cancer	20 (7.0)	0	0	0	1 (2.5)	21 (3.3)		
NSCLC	18 (6.3)	0	0	0	6 (15.0)	24 (3.8)		
Other cancer	19 (6.6)	0	0	0	15 (37.5)	34 (5.3)		
HER2 status								
Positive <sup>b</sup>	187 (65.4)	249 (99.6)	4 (7.8)	12 (100)	23 (57.5)	475 (74.3)		
Negative	69 (24.1)	1 (0.4)	47 (92.2)	0	14 (35.0)	131 (20.5)		
Unknown/other <sup>c</sup>	30 (10.5)	0	0	0	3 (7.50)	33 (5.2)		
Prior HER2 therapy								
Yes	201 (70.3)	250 (100)	12 (23.5)	12 (100)	24 (60.0)	499 (78.1)		
No	85 (29.7)	0	39 (76.5)	0	16 (40.0)	140 (21.9)		

CYP3A, cytochrome P450 gene, 3A subfamily; ECOG PS, Eastern Cooperative Oncology Group Performance Status; FL-DP1, frozen liquid drug product 1; FL-DP2, frozen liquid drug product 2; HER2, human epidermal growth factor receptor 2; IHC, immunohistochemistry; ISH, in situ hybridization; Lyo-DP, lyophilized powder; NSCLC, non-small-cell lung cancer; OATP1B, organic anion transporting polypeptide 1B transporter.

Note: OATP1B/CYP3A inhibitor use was determined only in Study A104 (not shown).

<sup>&</sup>lt;sup>a</sup> Per-study percentage for each category was computed by dividing with the study total; overall percentage per category was computed by dividing with the total number of patients included in the analysis (639).

<sup>&</sup>lt;sup>b</sup> HER2 positive was determined as HER2 ISH positive and/or IHC 3+.

<sup>&</sup>lt;sup>c</sup> HER2 unknown/other includes unknown HER2 status in breast/gastric cancer and other tumor types.

Table S4. Summary of baseline continuous covariates by study

Covariate	J101	U201	J102	A103	A 104	Overall
statistic	(N = 286)	(N = 250)	(N = 51)	(N = 12)	(N = 40)	(N = 639)
Age, years						
Mean (SD)	58.3 (11.4)	55.8 (11.9)	55.9 (10.5)	54.9 (8.7)	56.5 (12.0)	57.0 (11.6)
Median	58.0 (23.0-	56.0 (28.0-	56.0 (31.0-	54.5 (36.0-	57.0 (31.0-	57.0 (23.0-
(range)	83.0)	96.0)	79.0)	69.0)	80.0)	96.0)
Body weight, kg	,	,	,	,	,	,
Mean (SD)	59.8 (14.9)	61.4 (13.8)	52.7 (7.8)	60.4 (5.8)	59.2 (12.9)	59.9 (13.9)
Median	58.1 (34.6-	59.7 (37.9-	51.5 (38.9-	60.0 (51.0-	55.8 (41.3-	57.8 (34.6-
(range)	125.4)	121.0)	75.2)	68.0)	90.7)	125.4)
BSA, m <sup>2</sup>	- ,	- /	- ,		,	- ,
Mean (SD)	1.6 (0.2)	1.6 (0.2)	1.5 (0.1)	1.6 (0.1)	1.6 (0.2)	1.6 (0.2)
Median	1.6 (1.2-2.3)	1.6 (1.3-2.2)	1.5 (1.2-1.8)	1.6 (1.5-1.8)	1.6 (1.3-2.0)	1.6 (1.2-2.3)
(range)						
Albumin, g/L						
Mean (SD)	37.9 (4.5)	40.2 (3.7)	39.1 (4.5)	42.0 (4.2)	40.8 (3.7)	39.1 (4.3)
Median	38.0 (23.0-	41.0 (22.0-	40.0 (28.0-	41.5 (31.0-	41.0 (31.0-	40.0 (22.0-
(range)	50.0)	50.0)	48.0)	47.0)	49.0)	50.0)
LDH, U/L		,	/	- 7		,
Mean (SD)	336.7 (378.2)	276.8 (205.9)	271.7 (137.2)	403.6 (592.3)	254.6 (130.9)	304.2 (300.3)
Median	238.0 (115.0-	221.5 (109.0-	242.0 (142.0-	234.5 (140.0-	206.5 (148.0-	227 (109.0-
(range)	3815.0)	1896.0)	891.0)	2262.0)	865.0)	3815.0)
ALT, U/L	,	,	,	,	,	,
Mean (SD)	24.3 (20.3)	24.8 (17.1)	24.8 (15.1)	16.6 (9.8)	21.4 (16.0)	24.2 (18.3)
Median	18.0 (5.0-	19.5 (6.0-	21.0 (6.0-88.0)	12.5 (9.0-41.0)	17.0 (7.0-87.0)	19.0 (5.0-
(range)	202.0)	138.0)	(,	- (	. ( ,	202.0)
AST, U/L						,
Mean (SD)	37.7 (24.9)	39.7 (25.9)	35.6 (19.6)	29.3 (15.9)	28.9 (15.4)	37.6 (24.4)
Median	30.0 (10.0-	32.0 (13.0-	28.0 (15.0-	21.5 (16.0-	24.5 (12.0-	30.0 (10.0-
(range)	170.0)	189.0)	103.0)	63.0)	82.0)	189.0)
Total bilirubin,						,
μmol/L	9.5 (4.5)	8.1 (5.2)	10.8 (4.3)	9.6 (1.8)	9.5 (3.2)	9.1 (4.7)
Mean (SD)	8.6 (3.4-28.2)	7.0 (3.0-56.0)	10.3 (5.1-23.9)	9.1 (6.7-12.5)	8.6 (5.1-18.8)	8.0 (3.0-56.0)
Median	(00)	(0.0 00.0)		(011 (011 ==10)	0.0 (0.2 20.0)	(0.0 00.0)
(range)						
CrCL, mL/min						
Mean (SD)	89.8 (30.0)	93.0 (29.8)	91.6 (23.4)	87.9 (24.2)	94.8 (30.3)	91.5 (29.3)
Median	84.8 (28.3-	89.2 (31.8-	87.5 (55.8-	77.4 (61.0-	88.1 (50.5-	87.2 (28.3-
(range)	188.0)	189.2)	143.8)	139.1)	188.1)	189.2)
Tumor size, mm	==3.0,		_ :3.5,		== 3.=,	,
Mean (SD)	70.4 (46.0)	66.5 (43.8)	63.4 (40.0)	73.6 (45.6)	60.9 (36.0)	67.8 (44.1)
Median	57.0 (10.0-	57.0 (11.0-	57.0 (14.0-	62.0 (23.0-	55.0 (16.0-	57.0 (10.0-
(range)	267.0)	245.0)	230.0)	177.0)	189.0)	267.0)
	•	243.0)	· · · · · · · · · · · · · · · · · · ·	177.0)		,

ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; BSA, body surface area; CrCL, creatinine clearance, derived using Cockcroft-Gault formula; LDH, lactate dehydrogenase; U, unit.

Table S5. Summary of baseline categorical covariates by T-DXd dose level

Covariate category	Count (%) <sup>a</sup>								
	0.8 mg/kg	1.6 mg/kg	3.2 mg/kg	5.4 mg/kg	6.4 mg/kg	7.4 mg/kg	8.0 mg/kg	Overall	
	(N = 3)	(N = 3)	(N = 3)	(N = 313)	(N = 290)	(N = 21)	(N = 6)	(N = 639)	
Formulation									
FL-DP1	3 (100)	3 (100)	3 (100)	91 (29.1)	159 (54.8)	0	6 (100)	265 (41.5)	
FL-DP2	0	0	0	74 (23.6)	68 (23.4)	21 (100)	0	163 (25.5)	
Lyo-DP	0	0	0	148 (47.3)	63 (21.7)	0	0	211 (33.0)	
Sex									
Female	3 (100)	3 (100)	3 (100)	282 (90.1)	242 (83.4)	21 (100)	5 (83.3)	559 (87.5)	
Male	0	0	0	31 (9.9)	48 (16.6)	0	1 (16.7)	80 (12.5)	
Race									
Asian	3 (100)	3 (100)	3 (100)	155 (49.5)	215 (74.1)	12 (57.1)	3 (50.0)	394 (61.7)	
White	0	0	0	137 (43.8)	64 (22.1)	8 (38.1)	3 (50.0)	212 (33.2)	
Black or African American	0	0	0	8 (2.6)	4 (1.4)	1 (4.8)	0	13 (2.0)	
Other	0	0	0	9 (2.9)	6 (2.1)	0	0	15 (2.3)	
Unknown	0	0	0	4 (1.3)	1 (0.3)	0	0	5 (0.8)	
Country									
Japan	3 (100)	3 (100)	3 (100)	99 (31.6)	190 (65.5)	11 (52.4)	3 (50.0)	312 (48.8)	
Non-Japan Asia	0	0	0	58 (18.5)	25 (8.6)	1 (4.8)	0	84 (13.1)	
Other	0	0	0	156 (49.8)	75 (25.9)	9 (42.9)	3 (50.0)	243 (38.0)	
Hepatic function									
Normal	2 (66.7)	2 (66.7)	2 (66.7)	182 (58.1)	169 (58.3)	14 (66.7)	4 (66.7)	375 (58.7)	
Mild impairment	1 (33.3)	1 (33.3)	1 (33.3)	128 (40.9)	120 (41.4)	7 (33.3)	2 (33.3)	260 (40.7)	
Moderate impairment	0	0	0	1 (0.3)	0	0	0	1 (0.2)	
Unknown	0	0	0	2 (0.6)	1 (0.3)	0	0	3 (0.5)	
Tumor type									
Breast cancer	3 (100)	1 (33.3)	3 (100)	270 (86.3)	209 (72.1)	21 (100)	5 (83.3)	512 (80.1)	
Gastric/gastroesophageal	0	2 (66.7)	0	21 (6.7)	24 (8.3)	0	1 (16.7)	48 (7.5)	
cancer									
Colorectal cancer	0	0	0	1 (0.3)	20 (6.9)	0	0	21 (3.3)	
NSCLC	0	0	0	6 (1.9)	18 (6.2)	0	0	24 (3.8)	
Other cancer	0	0	0	15 (4.8)	19 (6.6)	0	0	34 (5.3)	
HER2 status									
Positive <sup>b</sup>	2 (66.7)	3 (100)	0	273 (87.2)	174 (60.0)	21 (100)	2 (33.3)	475 (74.3)	
Negative	1 (33.3)	0	2 (66.7)	37 (11.8)	87 (30.0)	0	4 (66.7)	131 (20.5)	
Unknown/other <sup>c</sup>	0	0	1 (33.3)	3 (1.0)	29 (10.0)	0	0	33 (5.2)	
Prior HER2 therapy									
Yes	2 (66.7)	3 (100)	1 (33.3)	277 (88.5)	191 (65.9)	21 (100)	4 (66.7)	499 (78.1)	
No	1 (33.3)	0	2 (66.7)	36 (11.5)	99 (34.1)	0	2 (33.3)	140 (21.9)	

FL-DP1, frozen liquid drug product 1; FL-DP2, frozen liquid drug product 2; HER2, human epidermal growth factor receptor 2; IHC, immunohistochemistry; ISH, in situ hybridization; Lyo-DP, lyophilized powder; NSCLC, non-small-cell lung cancer.

<sup>&</sup>lt;sup>a</sup> Per-study percentage for each category was computed by dividing with the study total; overall percentage per category was computed by dividing with the total number of patients included in the analysis (639).

<sup>&</sup>lt;sup>b</sup> HER2 positive was determined as HER2 ISH positive and/or IHC 3+.

<sup>&</sup>lt;sup>c</sup> HER2 unknown/other includes unknown HER2 status in breast/gastric cancer and other tumor types.

 Table S6.
 Summary of baseline continuous covariates by T-DXd dose level

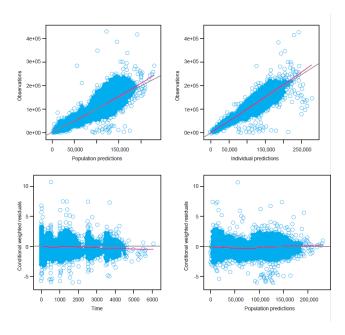
Covariate statistic	0.8 mg/kg	1.6 mg/kg	3.2 mg/kg	5.4 mg/kg	6.4 mg/kg	7.4 mg/kg	8.0 mg/kg	Overall
	(N = 3)	(N = 3)	(N = 3)	(N = 313)	(N = 290)	(N = 21)	(N = 6)	(N = 639)
Age, years								
Mean (SD)	59.3 (7.10)	66.3 (4.70)	48.3 (14.6)	56.9 (11.9)	57.1 (11.2)	54.4 (10.5)	66.2 (10.7)	57 (11.6)
Median	58	68	42	57	57	54	69.5	57
(range)	(53-67)	(61-70)	(38-65)	(28-96)	(23-83)	(32-69)	(46-74)	(23-96)
Body weight, kg								
Mean (SD)	57.3 (7.50)	53.8 (15.0)	52.5 (6.3)	61.7 (14.7)	58.3 (13.1)	54.6 (10.7)	64.4 (13.2)	59.9 (13.9)
Median	60.6	49.9	50.5	59	57	54.9	60.8	57.8
(range)	(48.8-62.6)	(41.1-70.4)	(47.4-59.6)	(35.2-125.4)	(34.6-118.8)	(38.5-77.8)	(51.2-85.7)	(34.6-125.4)
Albumin, g/L								
Mean (SD)	40.3 (3.50)	36.7 (6.40)	38.7 (7.60)	39.7 (4.00)	38.5 (4.60)	40.0 (3.90)	40.0 (3.90)	39.1 (4.30)
Median	40	34	37	40	39	41	40	40
(range)	(37-44)	(32-44)	(32-47)	(23-50)	(22-50)	(29-45)	(35-46)	(22-50)
LDH, U/L								
Mean (SD)	271.1 (149.4)	259 (49.5)	329.7 (199.3)	281.6 (192.5)	331.6 (394)	282.7 (165.2)	257.5 (85.4)	304.2 (300.3)
Median	193	241	266	227	227	203	245	227
(range)	(178-444)	(221-315)	(170-553)	(109-1896)	(121-3815)	(158-764)	(154-355)	(109-3815)
ALT, U/L								
Mean (SD)	20 (6.90)	19.3 (9.60)	13.7 (12.5)	24.3 (17.6)	24.3 (19.8)	23.6 (11.8)	27 (12.9)	24.2 (18.3)
Median	16	21	8	19	18	19	22.5	19
(range)	(16-28)	(9-28)	(5-28)	(5-138)	(6-202)	(10-50)	(15-48)	(5-202)
AST, U/L								
Mean (SD)	41.7 (33.2)	35.3 (14.5)	24.3 (14.5)	38.6 (25.4)	36.7 (23.8)	37.1 (21.4)	36.2 (15.5)	37.6 (24.4)
Median	23	35	17	32	29	31	34	30
(range)	(22-80)	(21-50)	(15-41)	(10-189)	(10-157)	(16-99)	(19-56)	(10-189)
Total bilirubin, µmol/L								
Mean (SD)	10.8 (3.70)	9.7 (2.00)	10.9 (5.80)	8.8 (5.10)	9.5 (4.50)	6.9 (2.10)	8 (3.40)	9.1 (4.70)
Median	12	8.7	10.3	8	8.6	7	7.7	8
(range)	(6.7-13.7)	(8.4-12)	(5.5-17.1)	(3-56)	(3-30)	(3-11)	(4.6-12)	(3-56)
CrCL, mL/min								
Mean (SD)	73.4 (11.1)	69.0 (24.3)	105.9 (19.7)	91.1 (29.5)	92.6 (30.0)	89 (19.8)	77.5 (20.4)	91.5 (29.3)
Median	75.9	81.6	112.4	87.2	88.3	86.1	73	87.2
(range)	(61.2-82.9)	(40.9-84.3)	(83.8-121.4)	(28.3-188.1)	(33.5-189.2)	(50.8-118.5)	(56.9-116.2)	(28.3-189.2)
Tumor size, mm								
Mean (SD)	51.7 (41.0)	78.7 (49.2)	72.3 (18.2)	65.6 (42.7)	70.7 (44.7)	63.7 (56.3)	54 (53.5)	67.8 (44.1)
Median	29	57	78	57	57	45	39	57
(range)	(27-99)	(44-135)	(52-87)	(11-252)	(10-267)	(11-238)	(13-158)	(10-267)

ALT, alanine aminotransferase; AST, aspartate aminotransferase; CrCL, creatinine clearance, derived using Cockcroft-Gault formula; LDH, lactate dehydrogenase; U, unit.

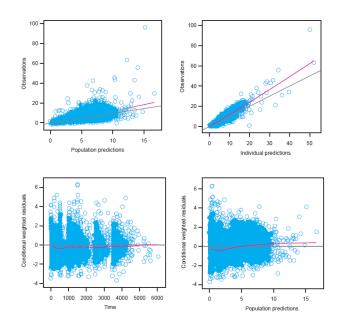
## **SUPPLEMENTARY FIGURES**

**Figure S1**. Goodness of fit of the final intact trastuzumab deruxtecan model (A) and final released-drug model (B).



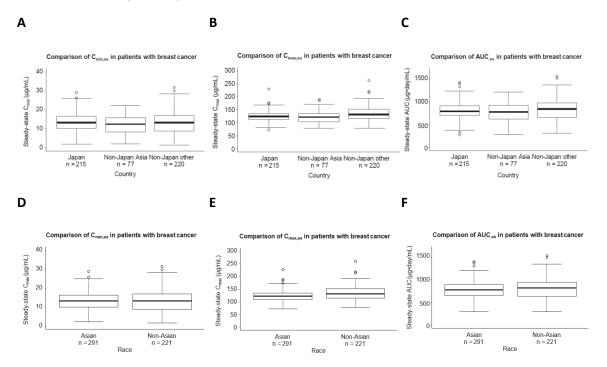


В



Note: The blue circles represent observations, the grey line represents the identity line, and the red curve represents the locally weighted scatterplot smoothers.

**Figure S2**. Steady-state intact trastuzumab deruxtecan (T-DXd) exposures with T-DXd 5.4 mg/kg every 3 weeks, stratified by country (A-C)<sup>a</sup> and race (D-F)<sup>b</sup>



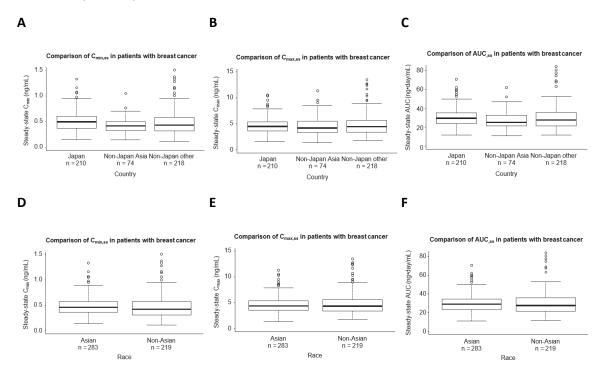
AUC,ss, area under the concentration-time curve at steady state;  $C_{max,ss}$ , maximum concentration at steady state;  $C_{min,ss}$ , minimum concentration at steady state.

Note: Boxes show the median and interquartile range of data. Whiskers represent the extent of data within 1.5 times the interquartile range. Points represent data outside the whiskers.

<sup>&</sup>lt;sup>a</sup> The geometric mean ratios for all intact T-DXd exposure metrics ranged from 0.921 to 1.17 comparing Japanese patients with non-Japanese patients and from 0.900 to 0.916 comparing non-Japanese Asian patients with non-Asian patients.

<sup>&</sup>lt;sup>b</sup> The geometric mean ratios for all intact T-DXd exposure metrics ranged from 0.919 to 1.10 comparing Asian with non-Asian patients.

**Figure S3**. Steady-state released-drug exposures with trastuzumab deruxtecan 5.4 mg/kg every 3 weeks, stratified by country (A-C)<sup>a</sup> and race (D-F)<sup>b</sup>



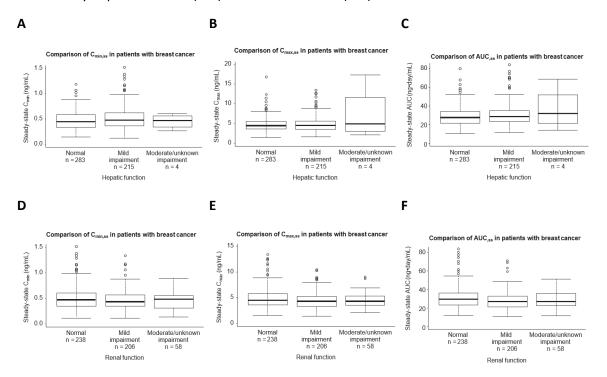
AUC,ss, area under the concentration-time curve at steady state;  $C_{max,ss}$ , maximum concentration at steady state;  $C_{min,ss}$ , minimum concentration at steady state.

Note: Boxes show the median and interquartile range of data. Whiskers represent the extent of data within 1.5 times the interquartile range. Points represent data outside the whiskers.

<sup>&</sup>lt;sup>a</sup> The geometric mean ratios for all released-drug exposure metrics ranged from 0.965 to 1.19 comparing Japanese patients with non-Japanese patients and from 0.868 to 0.918 comparing non-Japanese Asian patients with all non-Japanese patients.

<sup>&</sup>lt;sup>b</sup> The geometric mean ratios for all released T-DXd exposure metrics ranged from 0.953 to 1.10 comparing Asian with non-Asian patients.

**Figure S4**. Steady-state released-drug exposures with trastuzumab deruxtecan 5.4 mg/kg every 3 weeks, stratified by hepatic function (A-C)<sup>a</sup> and renal function (D-F)<sup>b</sup>



 $AUC_{,ss}$ , area under the concentration-time curve at steady state;  $C_{max,ss}$ , maximum concentration at steady state;  $C_{min,ss}$ , minimum concentration at steady state; NCI ODWG, National Cancer Institute Organ Dysfunction Working Group.

Note: Boxes show the median and interquartile range of data. Whiskers represent the extent of data within 1.5 times the interquartile range. Points represent data outside the whiskers. Hepatic impairment status was based on NCI ODWG Criteria.

<sup>&</sup>lt;sup>a</sup> The geometric mean ratios for all released-drug exposure metrics ranged from 1.02 to 1.11 in patients with mild hepatic impairment compared with normal hepatic function.

<sup>&</sup>lt;sup>b</sup> The geometric mean ratios for all released-drug exposure metrics ranged from 0.908 to 0.953 and 0.921 to 0.957 comparing exposure in patients with mild renal impairment against normal renal function and in patients with moderate/severe renal impairment against normal renal function, respectively.