

Table S1. Detailed patient information.

Sample ID	Cohort	Age, years	Laterality	WHO grade	Ki67, %	HR, HER2 status	FISH <sup>a</sup>
65	HR+ HER2-pos-1	51	Left	I	+5	HR+, HER2 (2+)	+
31	HR+ HER2-pos-2	67	Left	II	+25	HR+, HER2 (3+)	/
39	HR+ HER2-pos-3	47	Right	II	+90	HR+, HER2 (2+)	+
44	HR+ HER2-pos-4	51	Right	III	+25	HR+, HER2 (3+)	/
38	HR+ HER2-L1-1	63	Left	II	+20	HR+, HER2 (1+)	/
40	HR+ HER2-L1-2	74	Right	II	+60	ER+, PR-, HER2 (1+)	/
41	HR+ HER2-L1-3	44	Left	II	+25	ER+, PR-, HER2 (1+)	/
49	HR+ HER2-L1-4	58	Right	III	+40	ER+, PR-, HER2 (1+)	/
50	HR+ HER2-L1-5	64	Left	II	+20	HR+, HER2 (1+)	/
55	HR+ HER2-L1-6	71	Left	II	+20	HR+, HER2 (1+)	/
61	HR+ HER2-L1-7	67	Left	II	+20	HR+, HER2 (1+)	/
67	HR+ HER2-L1-8	75	Right	II	+20	HR+, HER2 (1+)	/
42	HR+ HER2-L2-1	49	Left	II	+30	HR+, HER2 (2+)	-
47	HR+ HER2-L2-2	48	Right	I	+40	HR+, HER2 (2+)	-
57	HR+ HER2-L2-3	48	Right	I	+30	HR+, HER2 (2+)	-
59	HR+ HER2-L2-4	73	Right	II	+30	HR+, HER2 (2+)	-
62	HR+ HER2-L2-5	57	Right	II	+60	HR+, HER2 (2+)	-
68	HR+ HER2-L2-6	49	Right	II	+50	HR+, HER2 (2+)	-
69	HR+ HER2-L2-7	51	Left	II	+40	HR+, HER2 (2+)	-
60	HR- HER2-pos-1	57	Left	III	+60	HR-, HER2 (3+)	/
43	HR- HER2-pos-2	68	Right	III	+60	HR-, HER2 (3+)	/
46	HR- HER2-pos-3	59	Left	III	+40	HR-, HER2 (3+)	/
48	HR- HER2-pos-4	75	Left	III	+60	HR-, HER2 (3+)	/
66	HR- HER2-pos-5	60	Right	III	+80	HR-, HER2 (3+)	/
52	HR-HER2-pos-6	59	Left	III	+40	HR-, HER2 (3+)	/
54	HR- HER2-pos-7	64	Left	III	+60	HR-, HER2 (3+)	/
64	HR+ HER2-0-1	59	Right	Unknown	+30	HR+, HER2 (0)	/
63	HR+ HER2-0-2	50	Left	III	+70	ER+, PR-, HER2 (0)	/
56	HR+ HER2-0-3	56	Right	I-II	+10	HR+, HER2 (0)	/
51	HR+ HER2-0-4	61	Left	III	+50	HR+, HER2 (0)	/

<sup>a</sup>For the FISH results, “-” indicates HER2 FISH negative, “+” indicates HER2 FISH positive and “/” indicates HER2 FISH was not performed. ER, estrogen receptor; FISH, fluorescence *in situ* hybridization; HER2, human epidermal growth factor receptor 2; HR, hormone receptor; PR, progesterone receptor; pos, positive; WHO, World Health Organization.

Table SII. Lipid profiles and survival information of all patients.

Sample ID	Cohort	Date of surgery	Date of last revisit	Lipid profiles			
				TG, mmol/l	TC, mmol/l	HDL, mmol/l	LDL, mmol/l
65	HR+ HER2-pos-1	2022.2.14	2024.6.16	0.83	4.65	1.32	2.54
31	HR+ HER2-pos-2	2021.7.23	2024.6.25	1.48	5.65	1.2	3.8
39	HR+ HER2-pos-3	2021.10.15	2024.6.14	0.96	4.34	1.28	2.78
44	HR+ HER2-pos-4	2021.11.5	2024.6.1	1.33	4.14	1.32	2.59
38	HR+ HER2-L1-1	2021.10.7	2024.5.24	1.8	4.52	1.31	2.79
40	HR+ HER2-L1-2	2021.10.15	2024.6.3	0.82	5.87	1.57	3.98
41	HR+ HER2-L1-3	2021.10.14	2024.6.6	0.87	3.73	0.92	2.5
49	HR+ HER2-L1-4	2021.11.8	2024.6.26	0.92	5.48	1.45	3.6
50	HR+ HER2-L1-5	2021.11.11	2024.6.13	1.62	6.46	1.46	4.55
55	HR+ HER2-L1-6	2021.12.6	2022.12.2	2.21	5.25	1.11	3.46
61	HR+ HER2-L1-7	2022.2.7	2024.1.5	3.27	5.72	1.1	3.69
67	HR+ HER2-L1-8	2022.2.15	2024.6.7	1.36	6.69	1.68	4.33
42	HR+ HER2-L2-1	2021.10.18	2024.6.17	1.93	4.62	1.28	2.92
47	HR+ HER2-L2-2	2021.11.5	2024.4.15	1.88	4.04	0.81	2.81
57	HR+ HER2-L2-3	2022.1.20	2024.6.12	1.42	5.15	1.09	3.51
59	HR+ HER2-L2-4	2022.1.29	2024.2.1	0.7	5.68	1.81	3.45
62	HR+ HER2-L2-5	2022.2.7	2022.9.1	1.1	3.81	1.27	2.32
68	HR+ HER2-L2-6	2022.2.11	2024.6.6	1.49	4.25	1.05	2.71
69	HR+ HER2-L2-7	2022.2.14	2023.9.2	1.99	4.49	0.92	2.81
60	HR- HER2-pos-1	2022.2.8	2024.6.13	1.82	5.96	1.6	3.79
43	HR- HER2-pos-2	2021.10.25	2024.3.1	1.15	4.46	1.5	2.86
46	HR- HER2-pos-3	2021.11.5	2024.6.25	1.29	5.33	1.71	3.42
48	HR- HER2-pos-4	2021.11.4	2022.2.16	1.01	4.71	1.47	3.06
66	HR- HER2-pos-5	2022.2.14	2024.4.26	1.87	5.37	1.02	3.57
52 <sup>a</sup>	HR- HER2-pos-6	2021.11.12	2024.6.23	1.17	5.21	1.16	3.54
54	HR- HER2-pos-7	2021.11.25	2023.6.28	1.18	6.29	1.56	4.08
64	HR+ HER2-0-1	2022.2.8	2023.10.9	3.27	3.57	0.88	2.15
63	HR+ HER2-0-2	2022.2.8	2024.3.27	3.42	6.94	1.63	4.41
56	HR+ HER2-0-3	2021.12.6	2024.6.4	1.64	3.79	0.81	2.55
51	HR+ HER2-0-4	2021.11.11	2024.6.13	0.7	3.58	1.23	2.16

<sup>a</sup>This patient had cancer recurrence in the lung and pleura in November, 2023. HDL, high-density lipoprotein; LDL, low-density lipoprotein; TC, total cholesterol; TG, triglyceride HER2, human epidermal growth factor receptor 2; HR, hormone receptor; PR, progesterone receptor; pos, positive.