

Table E1: Summary of qualitative scoring using the five point scale described in the methods section (1 = definitely normal, 2 = probably normal, 3 = equivocal, 4 = probably abnormal, and 5 = definitely abnormal)

Participant	Reader 1 score	Reader 2 score
1	1	1
2	1	1
3	2	3
4	5	5
5	3	3
6	1	1
7	2	4
8	5	5
9	2	2
10	2	4
11	4	5
12	3	3
13	2	1
14	5	5
15	2	4
16	2	2
17	2	4
18	5	5
19	1	1
20	2	2
21	3	5
22	3	4
23	5	5
24	1	1

Lesions scored 4 or 5 were documented as suspicious. Only those foci qualitatively scored as suspicious by both readers were considered suspicious foci and considered for biopsy. Beyond the 5-point scale, the protocol did not specify what is abnormal. Reader one was considering uptake above blood pool background to be abnormal, while reader two considered uptake above local background to be abnormal. The former was a higher threshold to call an abnormality, and thus would increase specificity, while the later would increase sensitivity.

Table E2: Additional data retrospectively evaluated after completion of the prospective study

Participant	Site of most ⁸⁹ Zr-pertuzumab avid lesion	Size of most ⁸⁹ Zr-pertuzumab avid lesion (cm)	Corresponding FDG SUVmax of most ⁸⁹ Zr-pertuzumab avid lesion	⁸⁹ Zr-pertuzumab SUVmax of most ⁸⁹ Zr-pertuzumab avid lesion	SUVmax of ⁸⁹ Zr-pertuzumab local background	SUVmax of ⁸⁹ Zr-pertuzumab blood pool background	⁸⁹ Zr-pertuzumab lesion to local background ratio	⁸⁹ Zr-pertuzumab lesion to blood pool background ratio
1	Liver	2.6	na	6.6	6.7	6.4	1.0	1.0
2	Node (mediastinal)	3.9	na	5.0	5.7	7.5	0.9	0.7
3	Bone (sacrum)	nm	13.6	5.7	5.5	8.2	1.0	0.7
4	Bone (spine)	nm	na	13.6	3.5	6.0	3.9	2.3
5	Liver	1.0	na	8.2	8.4	8.2	1.0	1.0
6	Pleura	nm	5.5	3.0	3.0	5.6	0.5	0.5
7	Node (axillary)	2.1	na	2.9	1.5	4.8	1.9	0.6
8	Bone (ilium)	nm	6.6	52.0	5.5	13.5	9.5	3.9
9	Pleura	1.9	7.4	9.9	5.9	11.8	1.7	0.9
10	Bone (clavicle)	nm	2.7	3.1	1.3	4.3	2.1	0.6
11	Node (Mediastinal)	0.9	na	7.7	2.9	6.7	2.6	1.1
12	Chest wall	3.6	na	5.8	5.0	7.0	1.2	0.8
13	Breast	2.4	na	1.4	1.3	7.2	1.1	0.2
14	Liver	3.9	na	28.1	7.7	7.8	3.6	3.6
15	Bone (ilium)	nm	na	11.4	5.3	13.0	2.1	0.9
16	Bone (spine)	nm	5.8	8.3	6.7	14.5	1.2	0.6
17	Bone (spine)	nm	7.7	6.5	6.3	10.6	1.0	0.6
18	Bone (femur)	nm	7.5	17.3	5.3	8.0	3.3	2.2
19	Liver	2.4	na	9.0	9.8	9.8	0.9	0.9
20	Node (supraclav)	1.7	8.6	10.8	9.3	12.6	1.2	0.9
21	Lung	1.6	6.4	6.1	2.0	7.9	3.0	0.8
22	Breast	3.2	na	6.4	1.9	7.5	3.4	0.8
23	Bone (ilium)	Not measurable	4.5	13.8	2.5	8.2	5.5	2.5
24	Liver	1.6	6.2	11.3	11.2	10.9	1.0	1.0

Size of the most ⁸⁹Zr-pertuzumab avid lesion was measured in long axis, bone lesions were not measured. Corresponding FDG SUVmax was collected if the participant had an FDG PET/CT within 6 weeks prior to trial enrollment. SUVs for the most ⁸⁹Zr-pertuzumab avid lesion, local background, and blood pool background allowed for calculations of lesion-to-local background and lesion-to-blood pool background ratios. nm = not measurable for size. na = no available FDG PET/CT within 6 weeks of protocol enrollment.