Supplemental Table 1. Inter-criteria agreement between response assessment criteria (RECIST, irRC, EORTC, PERCIST) at SCAN-2 (3-4 weeks) and SCAN-3 (approx. 4 months).

Compared criteria	Kappa coefficient*	
	SCAN-2	SCAN-3
RECIST1.1 vs. irRC	0.9	0.765
PERCIST vs. EORTC	0.886	0.875
RECIST1.1 vs. PERCIST	0.7	0.733
RECIST1.1 vs. EORTC	0.6	0.875
irRC vs. PERCIST	0.588	0.529
irRC vs. EORTC	0.479	0.659

* Kappa values were calculated based on degree of agreement on tumor response between criteria. At each time point, responses were classified into one of two categories: [CR+PR+SD] vs. [PD]. EORTC, European Organisation for Research and Treatment of Cancer 1999 criteria; irRC, immune-related Response Criteria; PERCIST, PET response criteria in solid tumors; RECIST, Response Evaluation Criteria In Solid Tumors

Supplemental Table 2. Receiver operator characteristic (ROC) curve analyses performed to estimate capacity of CT- and PET-based measurements (continuous percentage change) collected at 3-4 weeks to predict best overall response to immune checkpoint inhibitor therapy at ≥4 months as measured by RECIST 1.1.

Tumor response evaluation method description	Area under curve (AUC)	95% confidence interval
1) Change in sum of RECIST 1.1-based target lesion diameters	0.853	0.625 to 0.968
2) Change in sum of the products of the two largest perpendicular diameters of irRC-based index lesions	0.827	0.594 to 0.955
3) Change in SULpeak of the hottest lesion	0.680	0.437 to 0.867
4) Change in sum of SUVmax of all FDG-avid metastatic lesions	0.600	0.361 to 0.808

Method 1: change in sum of target lesion diameters, selected based on RECIST 1.1 criteria. Method 2: Change in sum of the products of the two largest perpendicular diameters of index lesions, selected based on irRC criteria. Method 3: Change in peak standardized uptake value, normalized by lean body mass, of the hottest lesion (SULpeak) seen on PET scan. (PERCIST 1.0). Method 4: Change in the sum of maximum standardized uptake value (SUVmax) of all FDG-avid metastatic lesions. FDG, fluorodeoxyglucose; irRC, immune-related Response Criteria; PERCIST, PET response criteria in solid tumors; RECIST, Response Evaluation Criteria In Solid Tumors; SD, stable disease.

Supplemental Table 3. Percent change in tumor burden SCAN-1 to SCAN-2 measured using 4 methods, compared with response per RECIST1.1 at SCAN-2 and best overall response at ≥4 months.

Pt No.	Method of measuring SCAN-1 to SCAN-2 percent change in tumor burden				Tumor response per RECIST 1.1 at SCAN-2	Best overall response at ≥4 months
	1) Percent change in sum of RECIST 1.1-based target lesion diameters	2) Percent change in sum of the products of the two largest perpendicular diameters of irRC-based index lesions	3) Percent change in SULpeak of the hottest lesion	4) Percent change in sum of SUVmax of all FDG-avid metastatic lesions		
1	46.27	136.77	24.94	43.10	PD	PD
2	18.60	45.88	25.05	18.58	SD	SD
3	42.19	80.58	79.80	95.76	PD	PD
4	27.85	88.42	10.35	6.49	PD	PD
5	51.11	248.21	0.00	14.66	PD	PD
6	0.00	14.96	-31.60	-45.11	SD	PD
7	6.19	7.23	-0.96	-5.73	SD	PD
8	36.54	51.22	15.46	38.98	PD	PD
9	21.95	58.43	12.97	4.68	PD	PD
10	12.50	26.14	65.35	57.41	SD	PD
11	0.00	20.00	61.70	113.21	SD	CR
12	7.26	18.35	-41.02	-40.32	SD	PD
13	8.57	47.95	-5.74	1.80	PD*	PD
14	-10.00	-28.95	21.39	36.79	SD	PR
15	45.95	150.84	45.74	63.24	PD	PD
16	0.00	-14.66	37.22	37.26	SD	PR
17	-31.71	-44.68	-25.00	-63.25	PR	CR
18	-23.64	-44.07	-32.81	-23.51	SD	PD

19	8.22	38.66	-13.91	-29.11	PD*	PD
20	20.73	38.03	-7.98	-1.82	PD	PD

Changes in tumor burden seen on PET/CT scans from baseline (SCAN-1) to 3-4 weeks (SCAN-2) were calculated using 4 methods, each based on standard response criteria. Method 1: change in sum of target lesion diameters, selected based on RECIST 1.1 criteria. Method 2: Change in sum of the products of the two largest perpendicular diameters of index lesions, selected based on irRC criteria. Method 3: Change in peak standardized uptake value, normalized by lean body mass, of the hottest lesion (SULpeak) seen on PET scan. (PERCIST 1.0). Method 4: Change in the sum of maximum standardized uptake value (SUVmax) of all FDG-avid metastatic lesions. CR, complete response; FDG, fluorodeoxyglucose; irRC, immune-related Response Criteria; PD, progressive disease; PD*, progressive disease due to appearance of new lesion on SCAN-2; PERCIST, PET response criteria in solid tumors; PR, partial response; RECIST, Response Evaluation Criteria In Solid Tumors; SD, stable disease.