

Supplemental Tables

Supplemental Table 1:

Negative conventional imaging prior to study enrolment per modality. All participants had negative CT or MRI with or without additional negative bone scan.

Modality	<i>N</i> of patients
CT	<i>22/27</i>
MRI	<i>21/27</i>
Bone scan	<i>12/17</i>

Supplemental Table 2. Comparison of ⁶⁸Ga-NeoB and ⁶⁸Ga-PSMA-R2 PET/MRI with the composite reference standard for detection of recurrent disease of prostate cancer on a per-lesion level.

	Reference standard		
	Positive	Negative	Total
⁶⁸Ga-NeoB			
Positive	31 (91.2%)	0 (0%)	31 (91.2%)
Negative	3 (8.8%)	n/a	3 (8.8%)
Total	34 (100%)	0 (0%)	34 (100%)

	Reference standard		
	Positive	Negative	Total
⁶⁸Ga-PSMA-R2			
Positive	20 (58.8%)	0 (0%)	20 (58.8%)
Negative	14 (41.2%)	n/a	14 (41.2%)
Total	34 (100%)	0 (0%)	34 (100%)

Data are number of participants (%).

True positive = Green

True negative = Red

False positive = Yellow

False negative = Blue

Supplemental Table 3: SUV_{max} and SUV_{mean} stratified by lesion type for ⁶⁸Ga-NeoB and ⁶⁸Ga-PSMA-R2 PET/MRI.

⁶⁸ Ga-NeoB						
	Prostate	Seminal vesicle	Pelvic lymph nodes	Extrapelvic lymph nodes	Bone	Lung
SUV_{max}	6.8	7.9	6.5 ± 3.5 (3.0 – 13.2)	5.1 ± 3.6 (3.1 – 10.5)	7.1 ± 3.0 (2.2 – 13.2)	3.5
SUV_{mean}	4.5	5.1	3.8 ± 2.1 (1.9 – 8.5)	2.6 ± 1.6 (1.3 – 4.9)	3.8 ± 1.8 (1.5 – 7.6)	1.9
N of lesions	1	1	10	4	14	1
⁶⁸ Ga-PSMA-R2						
	Prostate	Seminal vesicle	Pelvic lymph nodes	Extrapelvic lymph nodes	Bone	Lung
SUV_{max}	6.0	-	4.0 ± 0.9 (2.6 – 5.3)	4.3 ± 0.7 (3.3 – 4.9)	4.1 ± 1.6 (2.7 – 8.8)	3.9
SUV_{mean}	4.8	-	2.5 ± 0.4 (1.8 – 3.1)	2.8 ± 0.2 (2.5 – 3.1)	2.7 ± 1.2 (1.6 – 6.0)	2.5
N of lesions	1	0	6	3	9	1

Numerical factors are expressed as mean ± standard deviation (range).

Supplemental Table 4: Detections rates of ⁶⁸Ga-NeoB and ⁶⁸Ga-PSMA-R2 PET/MRI by number of patients, stratified by PSA ranges and PSA doubling time.

	PSA (ng/mL)				
	<0.5	0.5 – <1	1 – <2	2 – <5	≥5
⁶⁸Ga-NeoB	33.3% (4.3, 77.7)	50.0% (11.8, 88.2)	66.7% (9.4, 99.2)	100.0% (47.8, 100.0)	85.7% (42.1, 99.6)
<i>N</i> with positive scan	2	3	2	5	6
<i>N</i> with negative scan	4	3	1	0	1
Total <i>N</i>	6	6	3	5	7
⁶⁸Ga-PSMA-R2	16.7% (0.4, 64.1)	50.0% (11.8, 88.2)	66.7% (9.4, 99.2)	80.0% (28.4, 99.5)	71.4% (29.0, 96.3)
<i>N</i> with positive scan	1	3	2	4	5
<i>N</i> with negative scan	5	3	1	1	2
Total <i>N</i>	6	6	3	5	7
	PSA doubling time (months)				
	<3	3 – <6	6 – <9	9 – <12	≥12
⁶⁸Ga-NeoB	100.0% (59.0, 100.0)	66.7% (22.3, 95.7)	50.0% (6.8, 93.2)	33.3% (0.8, 90.6)	33.3% (0.8, 90.6)
<i>N</i> with positive scan	7	4	2	1	1
<i>N</i> with negative scan	0	2	2	2	2
Total <i>N</i>	7	6	4	3	3
⁶⁸Ga-PSMA-R2	85.7% (42.1, 99.6)	50.0% (11.8, 88.2)	50.0% (6.8, 93.2)	0.0% (0.0, 70.8)	33.3% (0.8, 90.6)
<i>N</i> with positive scan	6	3	2	0	1
<i>N</i> with negative scan	1	3	2	3	2
Total <i>N</i>	7	6	4	3	3

Data are % (95% CI).