

**Supplemental Table 1.** <sup>18</sup>F-rhPSMA-7.3 PET schedule.

Session	Scan	Axial extent	Duration per Axial FOV (min)	Total duration (min)	Start time (min)	End time (min)	
I	1	Vertex to mid-thigh (7 bed positions)	0.5	3.5	1	4.5	
	2.5 min break						
	2	Vertex to mid-thigh (7 bed positions)	1.0	7	7	14	
	2 min break						
	3	Vertex to mid-thigh (7 bed positions)	2.0	14	16	30	
	2 min break						
	4	Vertex to mid-thigh (7 bed positions)	2.0	14	32	46	
	2 min break						
	5	Vertex to feet (13 bed positions)	2.0	26	48	74	
	2 min break						
	6	Vertex to mid-thigh (7 bed positions)	2.0	14	76	90	
60 min break (rest and void)							
II	7	Vertex to mid-thigh (7 bed positions)	4.0	28	150	178	
42 min break (rest and void)							
III	8	Vertex to mid-thigh (7 bed positions)	4.0	28	220	248	

**Supplemental Table 2.** Radioactivity of <sup>18</sup>F-rhPSMA-7.3 in urine samples.

Subject	Injected dose, MBq	Urine sample collection period	Total volume of urine, mL	Measured activity in 2.5 mL sample, MBq	Time between injection and voiding, min	Activity in voided urine, MBq	Proportion of <sup>18</sup> F-rhPSMA in urine, %	Cumulative activity in urine, MBq	Cumulative proportion of <sup>18</sup> F-rhPSMA in urine, %
<b>1</b>	222	Post-scanning session 1	436	0.040	126	15.8	7.1	15.8	7.1
		Post-scanning session 2	247	0.031	195	10.8	4.8	26.6	12.0
		Post-scanning session 3	112	0.029	259	7.0	3.2	33.6	15.1
<b>2</b>	228	Post-scanning session 1	327	0.069	116	19.3	8.4	19.3	8.4
		Post-scanning session 2	95	0.066	198	8.9	3.9	28.2	12.4
		Post-scanning session 3	81	0.053	271	9.9	4.3	38.0	16.7
<b>3</b>	225	Post-scanning session 1	566	0.043	112	20.2	9.0	20.2	9.0
		Post-scanning session 2	90	0.091	190	11.1	4.9	31.3	13.9
		Post-scanning session 3	78	0.056	257	9.2	4.1	40.5	18.0
<b>4</b>	212	Post-scanning session 1	895	0.025	105	17.8	8.4	17.8	8.4
		Post-scanning session 2	127	0.049	198	9.0	4.3	26.8	12.7
		Post-scanning session 3	82	0.041	262	7.3	3.4	34.1	16.1
<b>5</b>	223	Post-scanning session 1	485	0.032	106	12.5	5.6	12.5	5.6
		Post-scanning session 2	148	0.043	192	8.9	4.0	21.4	9.6
		Post-scanning session 3	65	0.047	265	6.9	3.1	28.3	12.7
<b>6</b>	210	Post-scanning session 1	692	0.017	103	9.2	4.4	9.2	4.4
		Post-scanning session 2	176	0.028	190	6.7	3.2	16.0	7.6
		Post-scanning session 3	178	0.015	261	5.7	2.7	21.6	10.3
<b>Mean values for all subjects</b>	<b>220</b>	<b>Post-scanning session 1</b>	<b>567</b>	<b>0.038</b>	<b>111</b>	<b>15.8</b>	<b>7.2</b>	<b>15.8</b>	<b>7.2</b>
		<b>Post-scanning session 2</b>	<b>147</b>	<b>0.051</b>	<b>194</b>	<b>9.2</b>	<b>4.2</b>	<b>25.0</b>	<b>11.4</b>
		<b>Post-scanning session 3</b>	<b>99</b>	<b>0.040</b>	<b>263</b>	<b>7.7</b>	<b>3.5</b>	<b>32.7</b>	<b>14.8</b>

**Suppl Table 3.** Organ-specific absorbed doses calculated using the Cristy and Eckerman adult male phantom and 3.5-hour voiding interval.

Organ	Absorbed dose mGy/MBq						Mean	Standard deviation
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6		
Adrenals	0.141	0.180	0.109	0.255	0.196	0.220	0.184	0.053
Kidneys	0.162	0.162	0.126	0.215	0.188	0.180	0.172	0.030
Submandibular glands	0.203	0.118	0.083	0.150	0.155	0.179	0.148	0.043
Parotid glands	0.142	0.124	0.073	0.107	0.102	0.134	0.114	0.025
Spleen	0.121	0.077	0.098	0.068	0.079	0.053	0.083	0.024
Lacrimal glands	0.140	0.140	0.041	0.103	0.077	0.044	0.080	0.038
Sublingual glands	0.050	0.035	0.034	0.067	0.132	0.071	0.065	0.036
Liver	0.066	0.065	0.055	0.061	0.054	0.068	0.062	0.006
Pancreas	0.036	0.032	0.026	0.029	0.022	0.025	0.028	0.005
Heart wall	0.025	0.024	0.016	0.019	0.018	0.019	0.020	0.003
Gallbladder wall	0.018	0.019	0.016	0.018	0.015	0.018	0.017	0.001
Urinary bladder wall	0.009	0.012	0.014	0.016	0.013	0.006	0.012	0.003
Stomach wall	0.014	0.012	0.012	0.013	0.013	0.011	0.012	0.001
Small intestine	0.013	0.013	0.012	0.012	0.009	0.016	0.012	0.003
Osteogenic cells	0.014	0.013	0.010	0.011	0.012	0.010	0.012	0.002
Uterus	0.022	0.016	0.013	0.005	0.004	0.004	0.011	0.008
Thymus	0.011	0.012	0.010	0.010	0.009	0.008	0.010	0.001
Upper large intestine wall	0.011	0.010	0.010	0.010	0.008	0.011	0.010	0.001
Lungs	0.012	0.011	0.008	0.009	0.010	0.010	0.010	0.001
Red marrow	0.013	0.010	0.008	0.011	0.008	0.009	0.010	0.002
Thyroid	0.014	0.007	0.008	0.007	0.010	0.010	0.010	0.002
Lower large intestine wall	0.007	0.011	0.007	0.006	0.006	0.007	0.007	0.002
Muscle	0.006	0.008	0.006	0.006	0.006	0.006	0.006	0.001
Testes	0.002	0.002	0.002	0.009	0.006	0.008	0.005	0.003
Ovaries	0.005	0.006	0.005	0.005	0.004	0.005	0.005	0.001
Breasts	0.005	0.005	0.006	0.003	0.002	0.003	0.004	0.002
Skin	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.000
Brain	0.002	0.002	0.001	0.002	0.002	0.002	0.002	0.000