

Supplemental Table 1: Correlation of FES and FDHT uptake and semi-quantitative immunohistochemistry (IHC) analysis (intensity x percentage positive cells) of estrogen receptor and androgen receptor expression in metastatic lesions.

	Semi-quantitative IHC analysis	P-value
FES SUV_{max}	R ² : 0.78	< 0.01
FES SUV_{peak}	R ² : 0.74	< 0.01
FES SUV_{mean}	R ² : 0.80	< 0.01
FES corSUV_{max}	R ² : 0.78	< 0.01
FES corSUV_{peak}	R ² : 0.73	< 0.01
FES corSUV_{mean}	R ² : 0.80	< 0.01
FDHT SUV_{max}	R ² : 0.47	0.01
FDHT SUV_{peak}	R ² : 0.33	0.02
FDHT SUV_{mean}	R ² : 0.40	0.04
FDHT corSUV_{max}	R ² : 0.39	0.02
FDHT corSUV_{peak}	R ² : 0.32	0.04
FDHT corSUV_{mean}	R ² : 0.30	0.05

SUV= standardized uptake value, corSUV= background corrected SUV
FES= ¹⁸F-fluoroestradiol, FDHT= ¹⁸F-fluorodihydrotestosterone

Supplemental Table 2 : ROC cut-off analysis for tracer uptake on the PET scan and immunohistochemistry of biopsied metastasis.

	ROC cut-off	Sensitivity	Specificity
FES SUV_{max}	1.54	100%	100%
FES SUV_{peak}	1.45	91%	100%
FES SUV_{mean}	1.03	91%	100%
FES corSUV_{max}	0.42	91%	100%
FES corSUV_{peak}	0.28	91%	100%
FES corSUV_{mean}	0.30	91%	100%
FDHT SUV_{max}	1.94	91%	100%
FDHT SUV_{peak}	1.83	82%	100%
FDHT SUV_{mean}	1.72	73%	100%
FDHT corSUV_{max}	1.00	64%	100%
FDHT corSUV_{peak}	0.87	64%	100%
FDHT corSUV_{mean}	0.42	82%	100%

SUV= standardized uptake value, corSUV= background corrected SUV
FES= ¹⁸F-fluoroestradiol, FDHT= ¹⁸F-fluorodihydrotestosterone

Supplemental Table 3: Serum hormone levels at the time of PET scans

Hormone level:	Mean (range)
Serum estradiol (nmol/L)	0.04 (0.02 - 0.11)
Serum sex hormone binding globulin (nmol/L)	63 (33 - 118)
Serum luteinizing hormone (U/L)	23.4 (0.4 – 44.3)
Serum follicle stimulating hormone (U/L)	49.3 (1.69 – 92)

Serum testosterone (nmol/L)	4.3 (0.12 – 49)
Serum dihydrotestosterone (nmol/L)	0.23 (0.05 – 1.77)

Supplemental Table 4: Correlation between serum hormone levels and average FES uptake in all tumor lesions in a patient

Serum hormone/ PET analysis	Estradiol nmol/L R^2 (P -value)	Luteinizing hormone U/L R^2 (P -value)	Follicle stimulating hormone U/L R^2 (P -value)	Serum sex hormone binding globulin (nmol/L) R^2 (P -value)
FES SUV_{max}	0.52 (0.01)	0.17 (0.16)	0.03 (0.57)	0.25 (0.10)
FES SUV_{peak}	0.51 (0.01)	0.15 (0.19)	0.02 (0.66)	0.21 (0.13)
FES SUV_{mean}	0.58 (< 0.01)	0.18 (0.15)	0.03 (0.55)	0.25 (0.10)
FES corSUV_{max}	0.49 (= 0.01)	0.18 (0.40)	0.03 (0.55)	0.18 (0.17)
FES corSUV_{peak}	0.48 (0.01)	0.13 (0.22)	0.001 (0.73)	0.16 (0.20)
FES corSUV_{mean}	0.55 (0.01)	0.16 (0.18)	0.01 (0.63)	0.22 (0.13)

SUV= standardized uptake value, corSUV= background corrected SUV

FES= ¹⁸F-fluoroestradiol

Supplemental Table 5: Correlation between serum hormone levels and average FDHT uptake in all tumor lesions in a patient

Serum hormone level/ PET analysis	Testosterone nmol/L R^2 (P -value)	Dihydrotestosterone nmol/L R^2 (P -value)	Serum sex hormone binding globulin (nmol/L) R^2 (P -value)
FDHT SUV_{max}	0.09 (0.36)	0.12 (0.24)	0.03 (0.59)
FDHT SUV_{peak}	0.21 (0.14)	0.25 (0.08)	0.05 (0.51)
FDHT SUV_{mean}	0.09 (0.34)	0.13 (0.22)	0.08 (0.38)
FDHT corSUV_{max}	0.19 (0.15)	0.23 (0.09)	0.01 (0.79)
FDHT corSUV_{peak}	0.26 (0.09)	0.32 (0.04)	0.04 (0.51)
FDHT corSUV_{mean}	0.15 (0.21)	0.21 (0.12)	0.06 (0.43)

SUV= standardized uptake value, corSUV= background corrected SUV FDHT= ¹⁸F-fluorodihydrotestosterone