

SUPPLEMENTAL TABLE 1. Comparison of SUV (SD) measures in different tumor types.

Tumor	¹¹C-AMT	¹⁸F-FETrp	¹⁸F-FETrp/¹¹C-AMT
Glioblastoma (n=4)	0.81 (0.52)	1.17 (0.28)	1.9 (0.9)
Breast metastasis (n=4)	0.58 (0.11)	0.70 (0.10)	1.3 (0.4)
Lung metastasis (n=2)	0.14 (0.01)	0.51 (0.05)	3.6 (0.3)

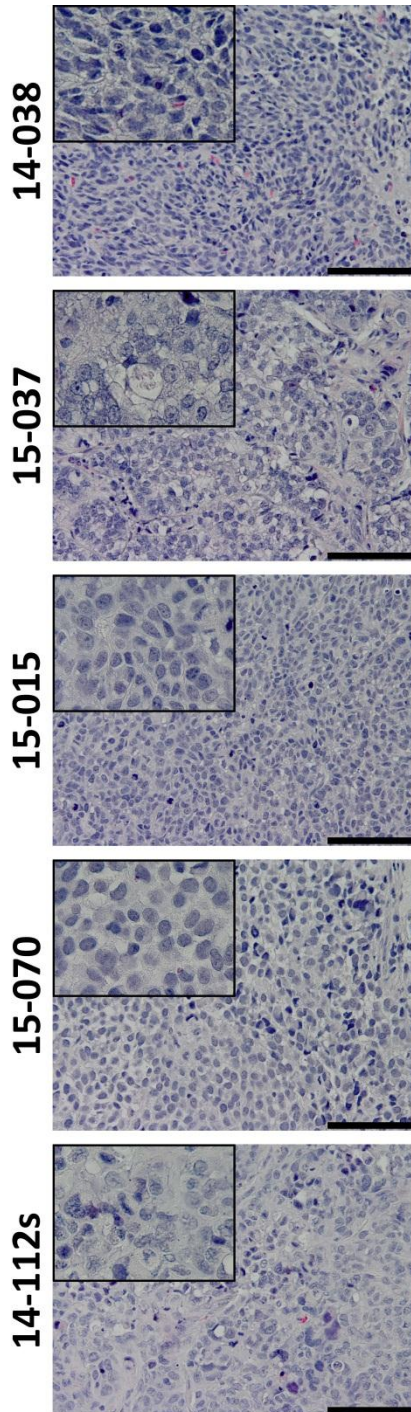
SUPPLEMENTAL TABLE 2. Residence time (hours) and corresponding standard deviation for ¹⁸F-FETrp obtained from PET imaging based on mouse data (n=6).

Bladder	0.2402 (0.065)	Lungs	0.0129 (0.003)
Brain	0.0168 (0.002)	Marrow	0.0076 (0.001)
Gallbladder	0.0630 (0.017)	Muscle	0.6607 (0.058)
Heart	0.0221 (0.003)	Pancreas	0.0792 (0.001)
Kidneys	0.0251 (0.002)	Spleen	0.0223 (0.002)
Liver	0.0617 (0.031)	Remainder	1.4317 (0.004)

SUPPLEMENTAL TABLE 3. Radiation absorbed dose estimates for ¹⁸F-FETrp administration in adult subjects.

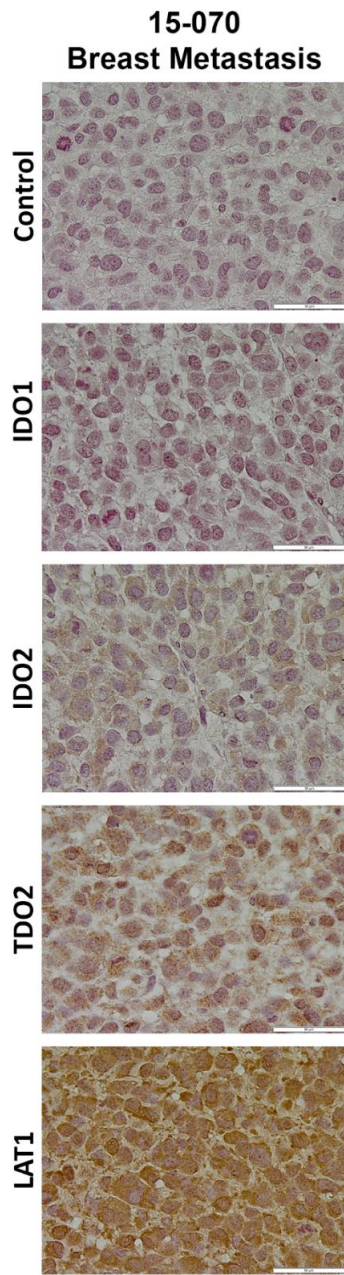
Target Organ	Dose (μGy/MBq)	
	Adult Male	Adult Female
Adrenal	13.1	16.3
Brain	5.3	6.2
Breast	7.9	9.7
Gallbladder Wall	13.9	16.5
Heart wall	15.2	18.2
LL intestine	15.3	19.1
UL intestine	14.4	17.8
Kidneys	22.7	25.6
Liver	13.0	17.0
Lungs	8.1	10.4
Muscle	10.7	14.5
Osteogenic cells	14.4	18.2
Ovaries	-	19.4
Pancreas	151.0	168.0
Red marrow	10.4	12.4
Skin	7.3	9.4
Small Intestine	25.3	29.1
Spleen	13.4	16.5
Stomach	13.8	16.8
Testes	11.3	-
Thymus	9.8	12.0
Thyroid	9.5	11.0
Urinary bladder wall	124.0	170.0
Uterus	-	23.3
Total body	28.6	34.9

SUPPLEMENTAL FIGURE 1. Hematoxylin and eosin staining of patient-derived xenograft tumors. Scale bars are 100 microns.



Hematoxylin and eosin staining was performed following standard protocol (*Fischer AH, Jacobson KA, Rose J, Zeller R. Hematoxylin and eosin staining of tissue and cell sections. CSH Protoc. 2008;2008:pdb prot4986.*) The 14-038 glioblastoma specimen showed densely packed ovoid cells with frequent atypical mitotic figures. The majority of nuclei were pleomorphic and hyperchromatic and demonstrated an increased nucleus-to-cytoplasm (N/C) ratio. Rare large multinucleated cells were also found. The 15-037 glioblastoma specimen showed densely packed cells. Many of the cells had hyperchromatic nuclei, while the remaining cell nuclei were relatively clear with prominent nucleoli. The nucleus/cytoplasm ratio was increased, and several cells per high-powered field show pyknosis. The 15-015 breast cancer brain metastasis specimen showed small cells loosely arranged against background stroma. Numerous mitotic figures are seen, many of which are abnormal. Nuclei comprise almost the entire cell volume. The 15-070 breast cancer brain metastasis specimen showed large cells loosely arranged against background stroma. Nuclei show a moderate degree of pleomorphism and increased nucleus/cytoplasm ratio. Rare abnormal mitoses are also seen. The 14-112S NSCLC brain metastasis specimen showed small areas of densely packed cells separated by bands of loose stroma. The tissue appears grossly disorganized without clear cell polarity. The cells show a large degree of pleiotropy with hyperchromatic nuclei and increased nucleus/cytoplasm ratio. Abnormal giant cells are present, as are rare pyknotic nuclei.

SUPPLEMENTAL FIGURE 2. Immunohistochemical staining of patient-derived xenograft tumors. Scale bars are 50 microns.



The 15-070 breast metastasis tumor tissue staining is representative of the staining for all five tumor models. The staining was performed as previously described (Guastella AR, Michelhaugh SK, Klinger NV, et al. *Tryptophan PET Imaging of the Kynurenine Pathway in Patient-Derived Xenograft Models of Glioblastoma. Mol Imaging. 2016;15;1-11*). Tissue staining for all five tumor models was scored independently by multiple investigators, and scores were averaged and given a 0, +, ++, or +++ score. Below is a table with the scores for each tumor model, as well as an averaged score for each target. Staining showed minimal IDO1, low IDO2, moderate TDO2, and abundant L-type amino acid transporter 1 (LAT1).

	IDO1	IDO2	TDO2	LAT1
14-038	0	+	+	+++
14-112S	+	+	++	++
15-015	0	+	+	+++
15-037	0	+	0	++
15-070	+	+	++	+++
Average	0	+	+	+++