

	¹⁸ F-FMISO	¹⁸ F-HX4	¹⁸ F-FAZA	⁶⁴ Cu-ATSM
¹⁸ F-FMISO	-	0.306	0.410	0.022*
¹⁸ F-HX4	0.306	-	0.599	0.0022*
¹⁸ F-FAZA	0.410	0.599	-	0.007*
⁶⁴ Cu-ATSM	0.0216*	0.0022*	0.007*	-

Supplemental Table 1. P-values obtained from 2-sample unequal variance t-test, comparing tumor/muscle ratios obtained from PET images from each tracer, given in table 1. * denotes $p < 0.05$.

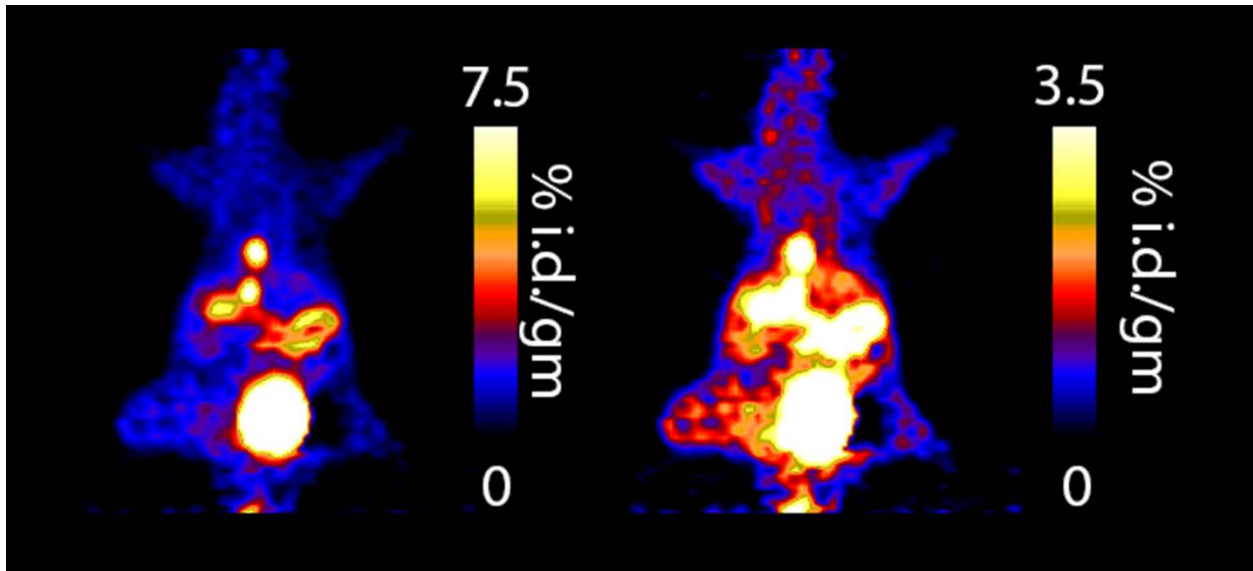
(i)

Tracer	CA9		Pimonidazole		Hoechst	
	gradient	r	gradient	r	gradient	r
FAZA	positive	0.140	positive	0.122	negative	0.004
FMISO	positive	0.433	positive	0.398	negative	0.387
HX4	positive	0.238	positive	0.324	negative	0.424
ATSM	negative	0.158	negative	0.110	positive	0.077

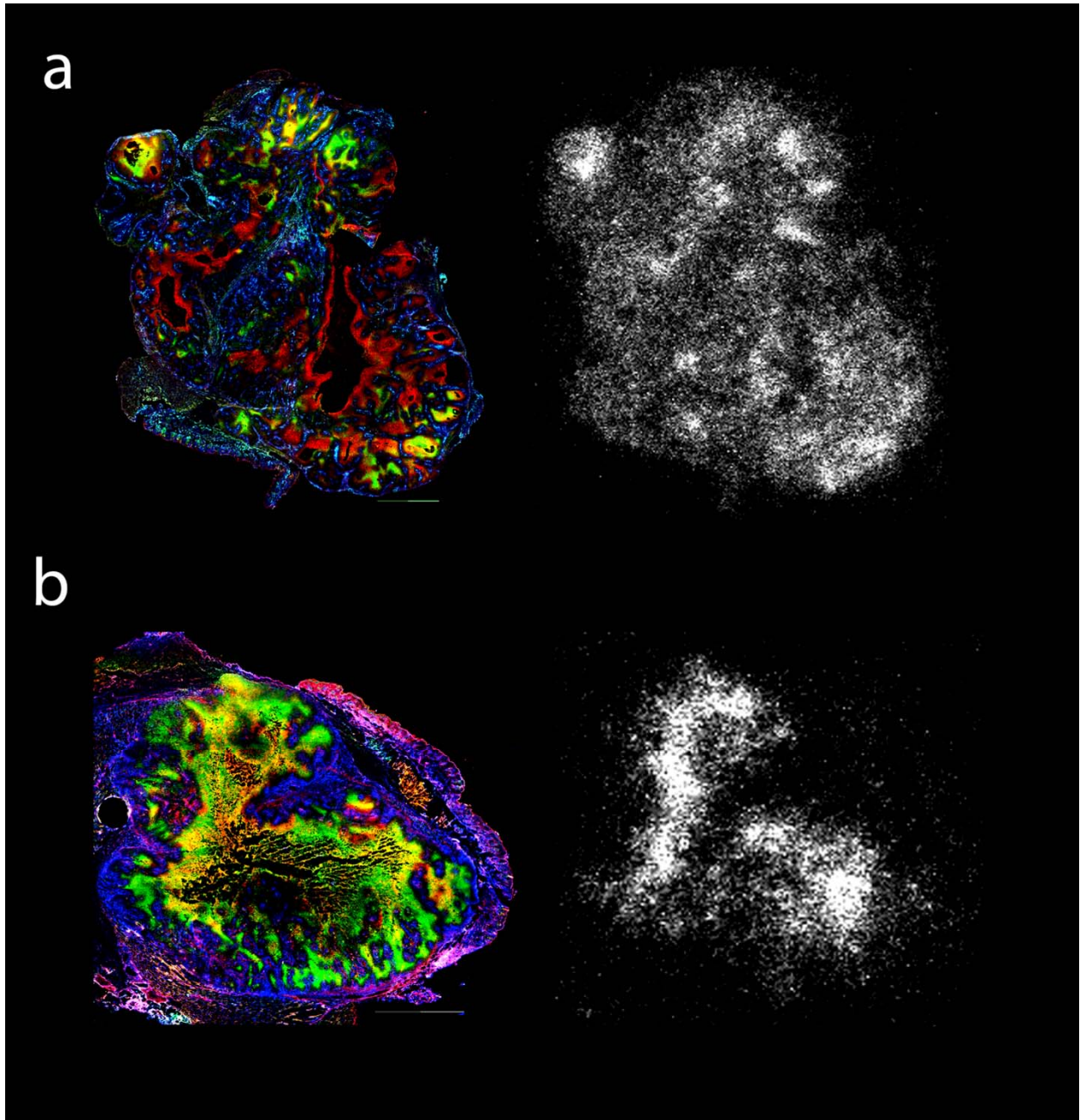
(ii)

Cell line	CA9		Pimonidazole		Hoechst	
	gradient	r	gradient	r	gradient	r
HCT116	negative	0.022	positive	0.052	positive	0.115
HT29	negative	0.211	negative	0.256	positive	0.030
SQ20b	negative	0.095	negative	0.276	positive	0.333

Supplemental Table 2. Correlation coefficients (r) and line gradient values derived from raw pixel data used to generate the re-binned scatterplots shown in figures 5 (i) and 6 (ii) respectively.



Supplemental Figure 1. Tumor uptake of ¹⁸F-FAZA in a SQ20b murine xenograft. The left panel is also shown in figure 1. Right panels shows a re-windowed PET image (to maximum 3.5% i.d./g) allowing visualization of tumor uptake of ¹⁸F-FAZA.



Supplemental Figure 2. Distribution of ^{18}F -FAZA (top) and ^{18}F -HX4 (bottom) versus immunofluorescence makers in SQ20b murine xenografts. Registered 3-color immunofluorescence images and corresponding autoradiography from representative sections are shown. Re-binned scatterplots derived from these images are shown in figure 5, panels (b) and (c) respectively.