

Supplemental Information

**Noninvasive Imaging and Quantification of Radiotherapy-Induced PD-L1 Upregulation
with ⁸⁹Zr-Df-atezolizumab**

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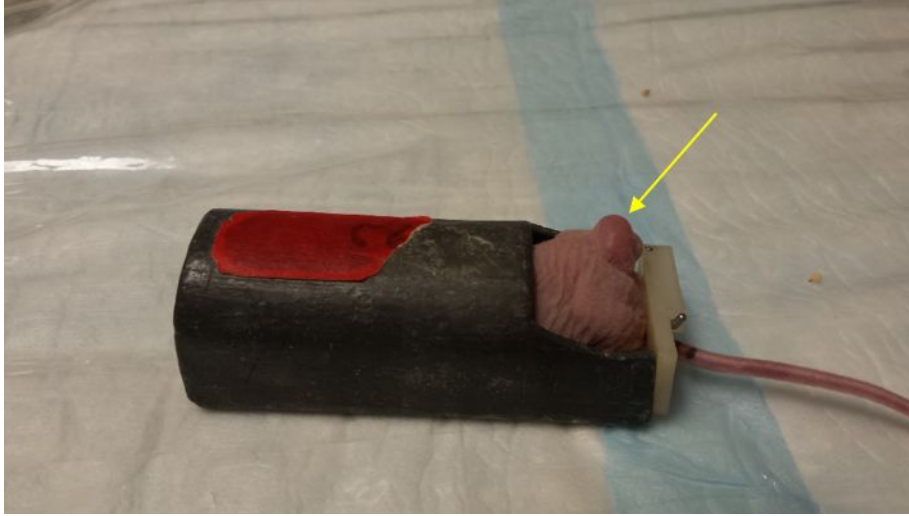


Figure S1. Setup for irradiation of mice in lead shield.

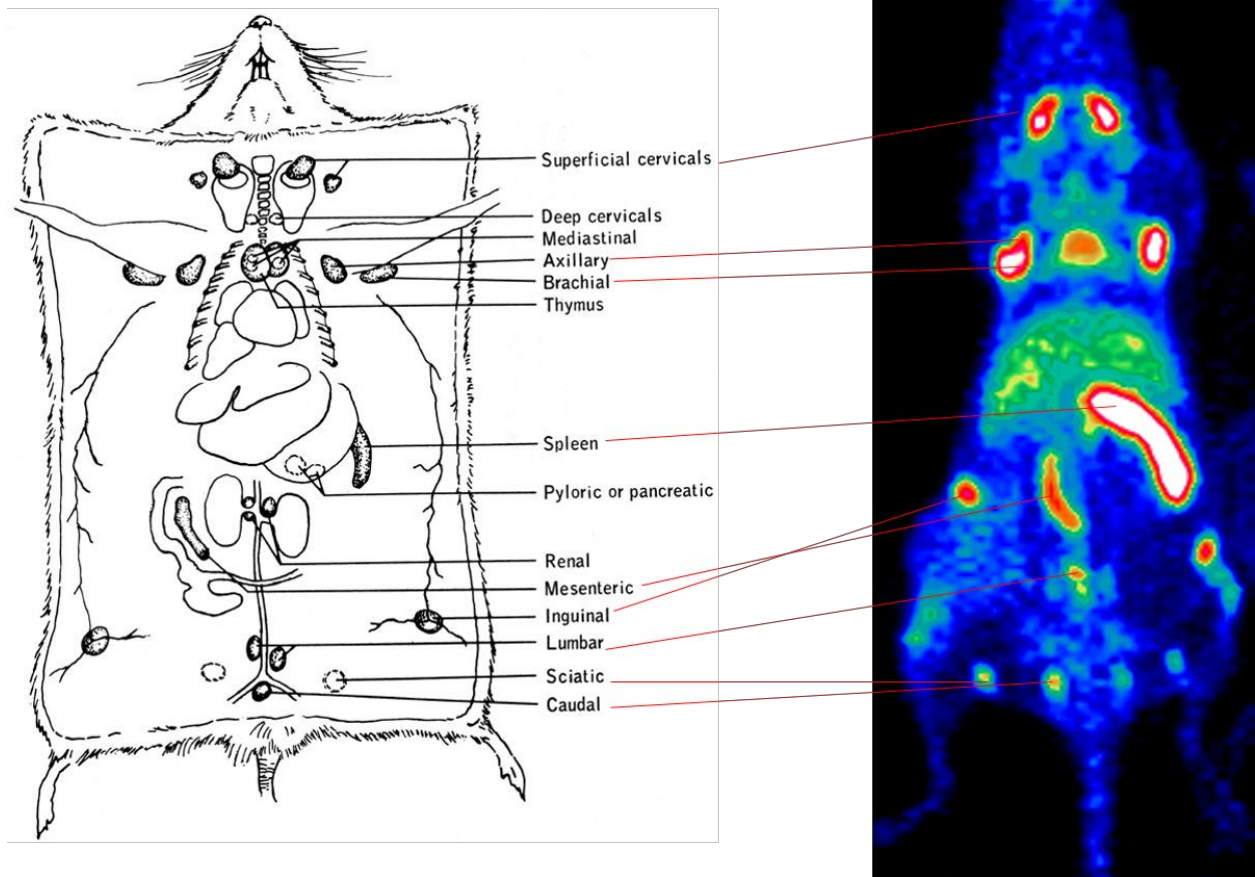


Figure S2. Many lymph nodes were clearly visible on ^{89}Zr -Df-atezolizumab PET images.

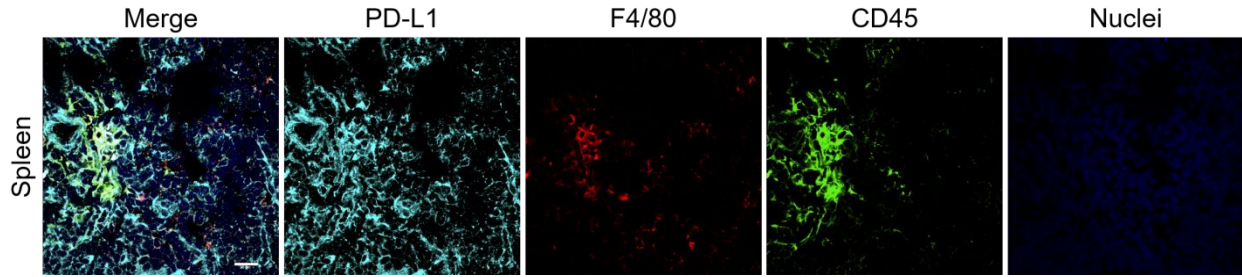


Figure S3. Staining of spleen tissue verified high PD-L1 and immune cell presence. Magnification: 60x. Scale bar = 20 μ m.

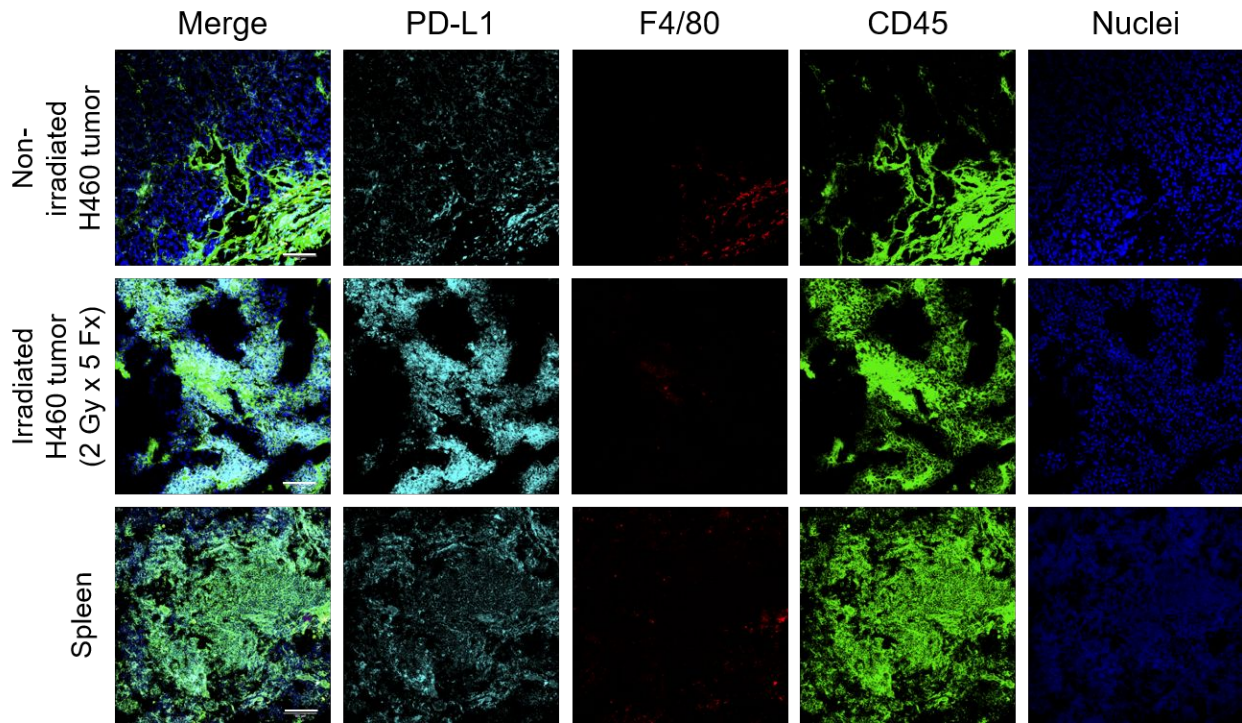


Figure S4. Immunofluorescent staining of peripheral H460 tumor slices before and after fractionated radiotherapy and the spleen at 20x magnification. Scale bar = 100 μ m.

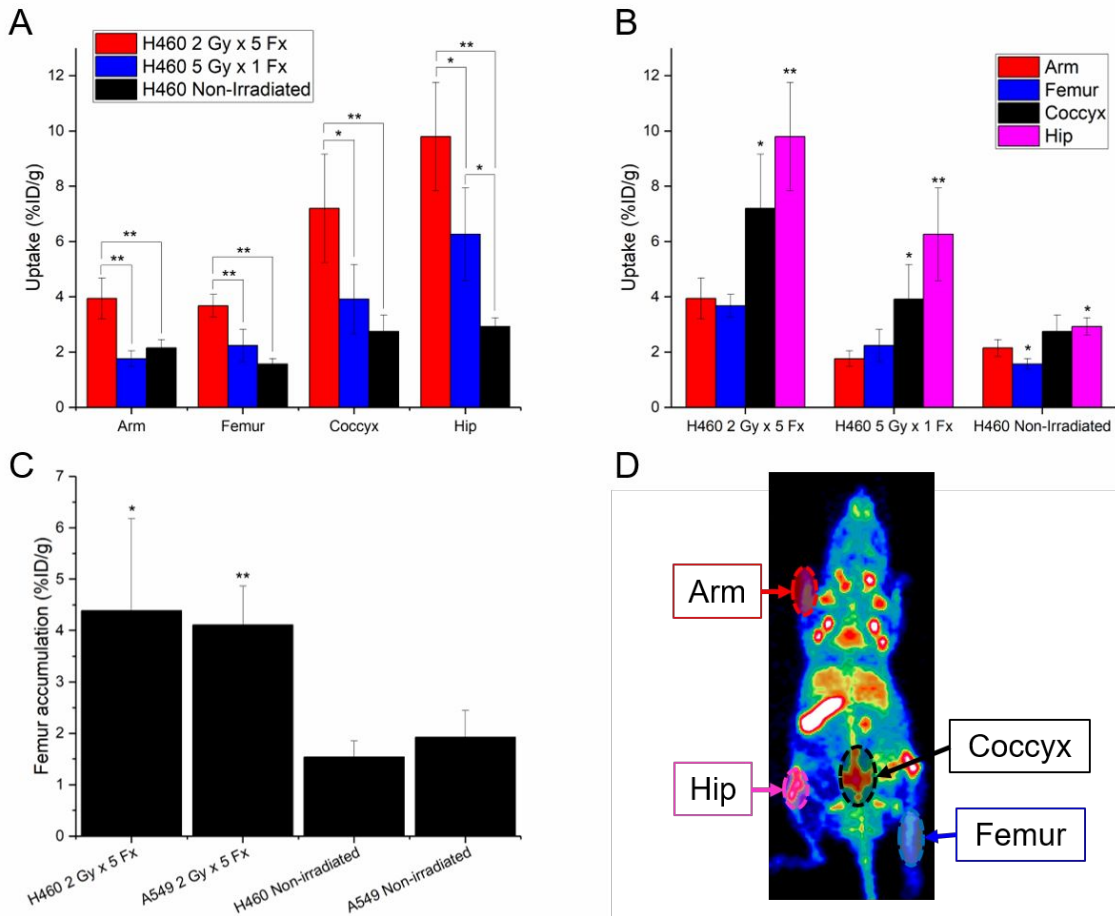


Figure S5. Comparison of bone uptakes of ^{89}Zr -Df-atezolizumab. (A) Statistically higher accumulation of the tracer was noted following fractionated radiotherapy in all bones/joints as determined through PET ROI analysis. $*p < 0.05$; $**p < 0.01$. (B) Statistically higher accumulation was noted in the hip and coccyx relative to the arm, particularly following radiotherapy. $*p < 0.05$; $**p < 0.01$, relative to accumulation in arm. (C) Similar trends were noted in ex vivo gamma-counting biodistribution studies of tracer accumulation in the femur, with higher values measured after radiotherapy. $*p < 0.05$; $**p < 0.01$, relative to non-irradiated femur accumulation in same tumor model. (D) Approximate location of ROIs in PET images.