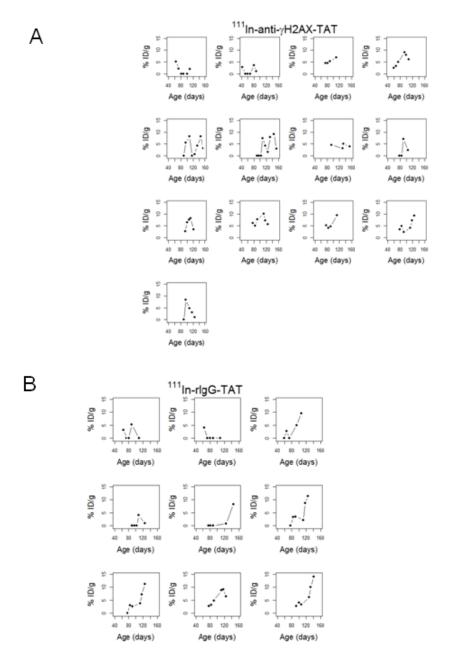
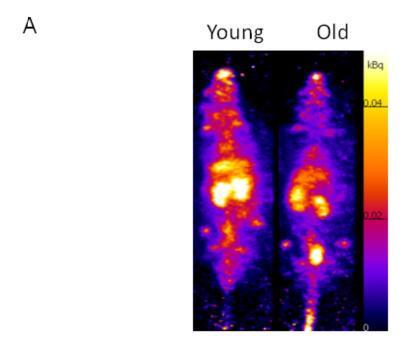
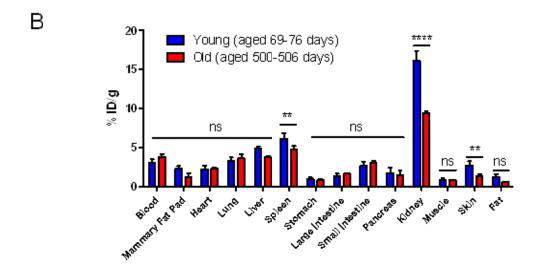


Supplemental Figure 1: Mammary fat pads were harvested from WT BALB/c mice aged 130 days. Tissues were frozen, sectioned and (A) stained with haematoxylin/eosin. Ductal structures were normal, with near uniform-sized cells containing small, asymmetric nuclei. (B) Sections immunostained for pATM (scale bar = $50 \mu m$).



Supplemental Figure 2: BALB-neuT mice of different ages received ¹¹¹In-anti-yH2AX-TAT (A) or ¹¹¹In-rIgGTAT (B) i.v. at weekly intervals and SPECT images acquired 24 h p.i. The uptake of ¹¹¹In in mammary tissue was quantified by VOI analysis. The time course of ¹¹¹In uptake in mammary tissue in individual mice is shown.





Supp lemental Figure 3: 111 In-anti- γ H2AX-TAT was administered to young or old BALB/c WT mice and following acquisition of SPECT images at 24 h p.i., tissues were sampled and counted. (A) Representative MIP images. (B) Biodistribution expressed as %ID/g. Uptake of 111 In-anti- γ H2AX-TAT was slightly higher in the mammary fat pads of young versus old mice: however, this did not reach statistical significance (Mean +/- SD: 2.28 +/- 0.35 versus 1.21 +/- 0.49; P = 0.1). The level of uptake in the mammary fat pads in balbc WT was well below the 5%ID/g cut-off that used to denote a positive 111 In-anti- γ H2AX-TAT in balbNeuT mice. *** P < 0.001, **** P < 0.0001.