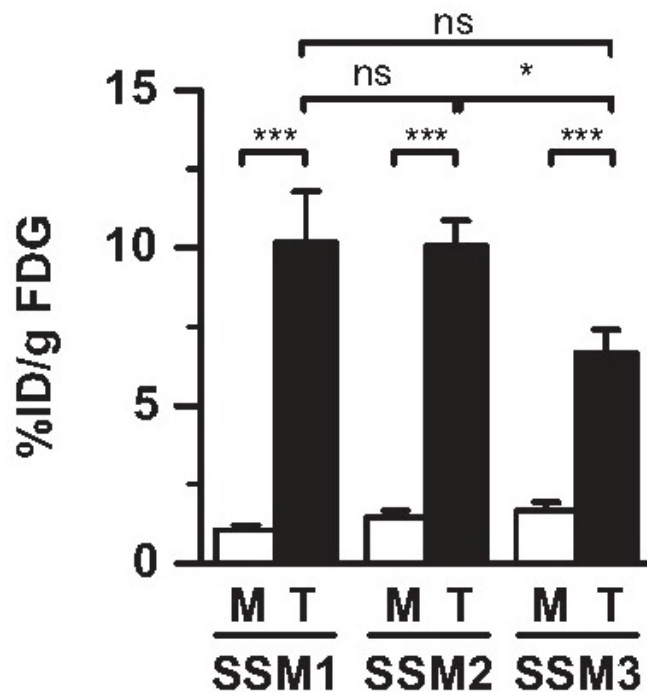
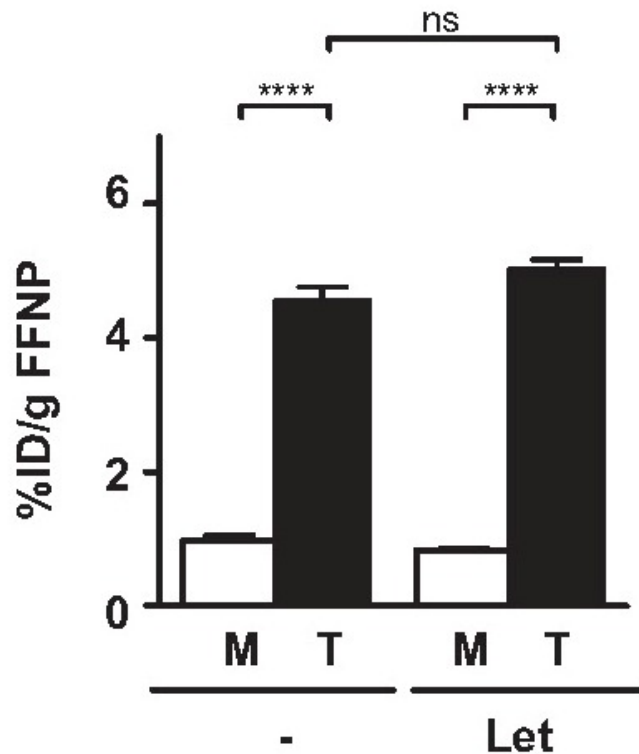


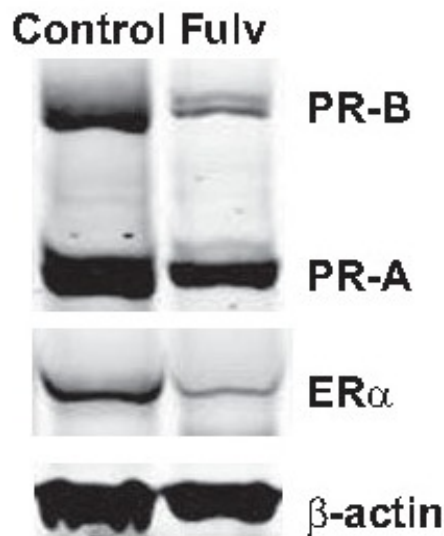
**Supplemental Figure 1:** Western blot analysis of 4 primary tumors for ER $\alpha$ , PR-A, PR-B isoforms, and  $\beta$ -actin (loading control).



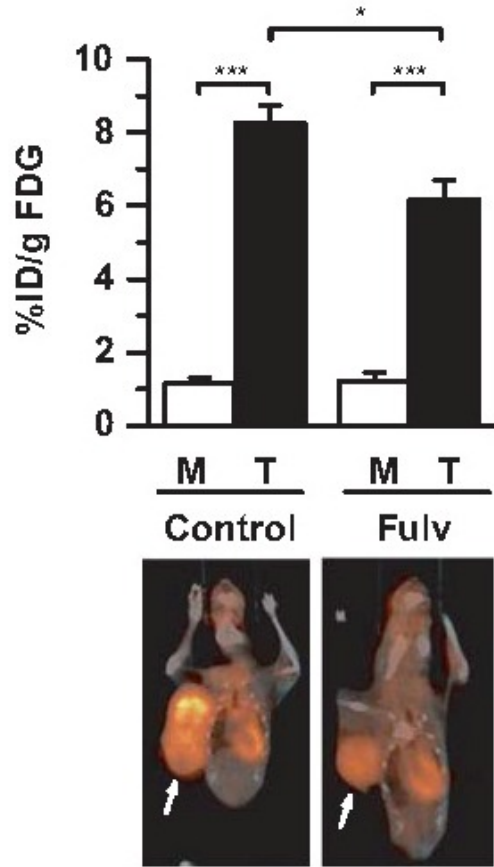
**Supplemental Figure 2:** Female WT mice with SSM1 (n=6), SSM2 (n=4), or SSM3 (n=6) tumors in the right thoracic mammary fat pad were imaged using microPET/CT with FDG. Activity was measured in tumor (T) and muscle (M). \* P<0.05; \*\*\* p<0.001.



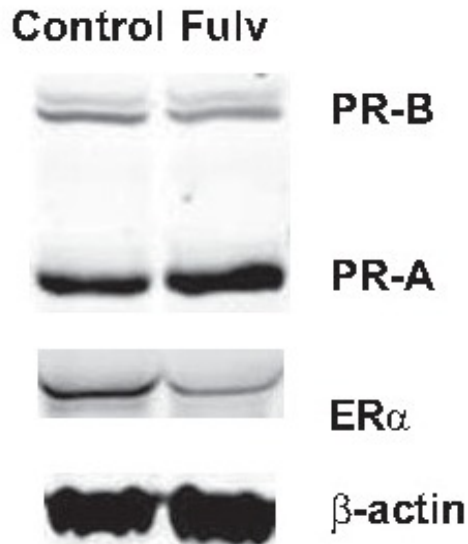
**Supplemental Figure 3:** Female WT mice with SSM3 tumors in the right thoracic mammary fat pad were treated with 50  $\mu$ g intraperitoneal letrozole (Let) daily for 2 days (n=4) or were left untreated (-; n=4). Baseline FFNP microPET imaging was performed and activity was measured in tumor (T) and muscle (M). \*\*\*\* P<0.0001.



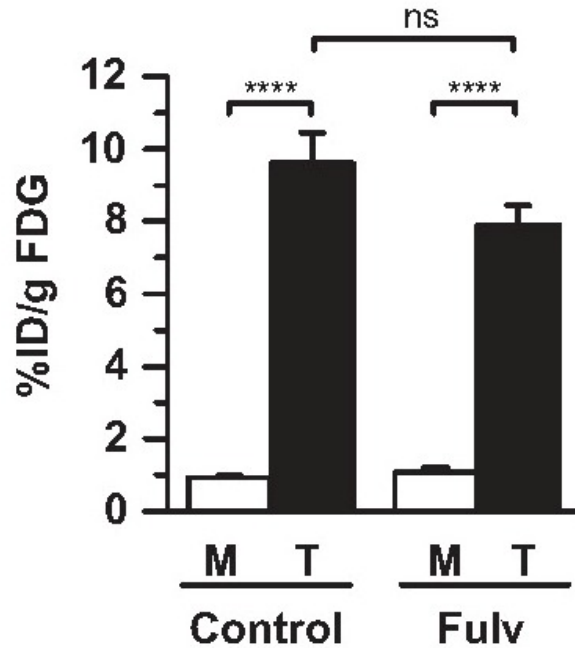
**Supplemental Figure 4:** Western blot analysis of representative control and fulvestrant-treated SSM3 tumors shows downregulation of ER $\alpha$  and PR protein in the fulvestrant-treated tumors.



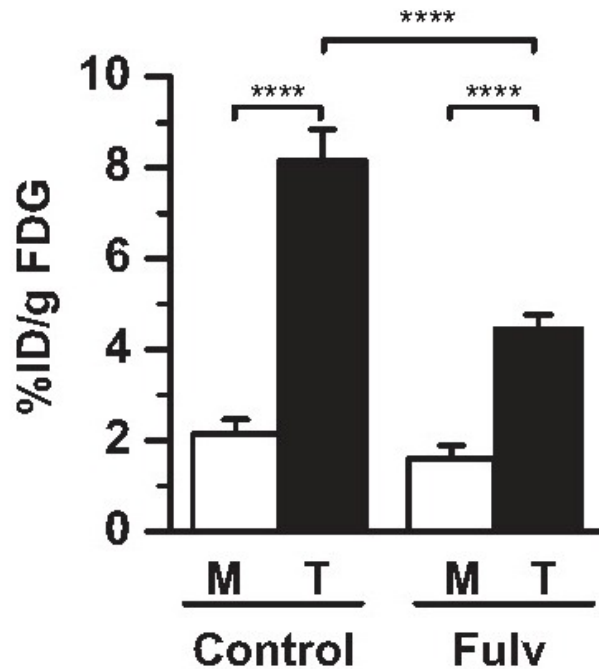
**Supplemental Figure 5:** FDG-PET/CT imaging of SSM3 tumor-bearing mice after 2 weeks treatment with fulvestrant or vehicle control (day 35 post implant). Activity was measured in tumor (T; white arrow) and muscle (M). \*  $P < 0.05$ , \*\*\*  $P < 0.001$ .



**Supplemental Figure 6:** Western blot analysis of representative control and fulvestrant-treated SSM2 tumors shows downregulation of ERα, but not PR protein.



**Supplemental Figure 7:** FDG-PET/CT imaging of SSM2 tumor-bearing mice after 1 week treatment with fulvestrant or vehicle control (day 54 post implant). Activity was measured in tumor (T) and muscle (M). \*\*\*\* P<0.0001.



**Supplemental Figure 8:** FDG-PET/CT imaging of SSM3 tumor-bearing mice after 1 week treatment with fulvestrant or vehicle control (day 29 post implant). Activity was measured in tumor (T) and muscle (M). \*\*\*\* P<0.0001.