supplementary figure legends

**Fig. S1. Mammary tumor burden during tamoxifen (TAM) treatment in animals exposed to genistein (GEN).** The average tumor burden per rat was determined in rats during TAM treatment. Date are presented as means. n=19-20 rats per group. \*p<0.05, compared with the control group.

**Fig. S2. Histopathology of mammary tumors before and during TAM treatment in GEN fed rats**. Tumor histopathology was categorized as benign (green), papillary cyst adenocarcinoma (blue) and tubular adenocarcinoma (orange) in rats fed GEN during different time-periods of life. n=13-22 tumors per group.

**Fig. S3. UPR gene expression levels of mammary glands and tumors of animals before TAM treatment.** Western blots of genes involved in UPR and autophagy pathways are shown in the (A) mammary glands and (B) and tumors are shown. Comparisons among GEN fed rats before TAM treatment for (C) GRP78, (D) ATF6 p50, (E) IRE1α, (F) PERK, (G) Beclin-1, (H) Chop, (I) p62 and (J) LC3II in the mammary gland, and (K) GRP78, (L) ATF6 p50, (M) IRE1α, (N) PERK, (O) Beclin-1, (P) Chop, (Q) p62 and (R) LC3II in the tumors are shown. Data are presented as means ± SEM. n=5 mammary glands and n=9 adenocarcinomas per group.

**Fig. S4. Effect of tamoxifen (TAM) on protein levels of genes in unfolded protein response (UPR) and autophagy pathways in the mammary glands and tumors**. Western blots of genes involved in UPR and autophagy pathways are shown in the (A) mammary glands and (B) and tumors are shown. Comparisons between non-treated (blue bar) and TAM treated (red bar) mammary glands and tumors are shown for (C) GRP78, (D) IRE1α, (E) ATF6 p50, (F) Beclin-1, (G) p62 and (H) LC3II in the mammary gland, and (I) GRP78, (J) IRE1α, (K) ATF6 p50, (L) Beclin-1, (M) p62 and (N) LC3II in the tumors are shown. Data are presented as means ± SEM, asterisk indicates a statistical difference: p<0.05. n=5 mammary glands and n=5 adenocarcinomas per group.

**Fig. S5.** **Proliferation and apoptosis indexes in the mammary glands and tumors of genistein (GEN) fed and tamoxifen (TAM) treated rats**. mRNA level of proliferation marker Ki67 was measured by RT-qPCR (A) in the mammary glands and (C) tumors in rats fed GEN at different times of their life. Prepubertal GEN intake increased Ki67 expression in the mammary glands. Ratio of pro-apoptosis marker Bax to anti-apoptosis marker Bcl2, determined by Western blot, (B) in the mammary glands and (D) tumors. Data are shown as means ± SEM; bars with different letters are significantly different from each other, p<0.05. n=5-6 mammary glands and n=3-6 tumors per group.