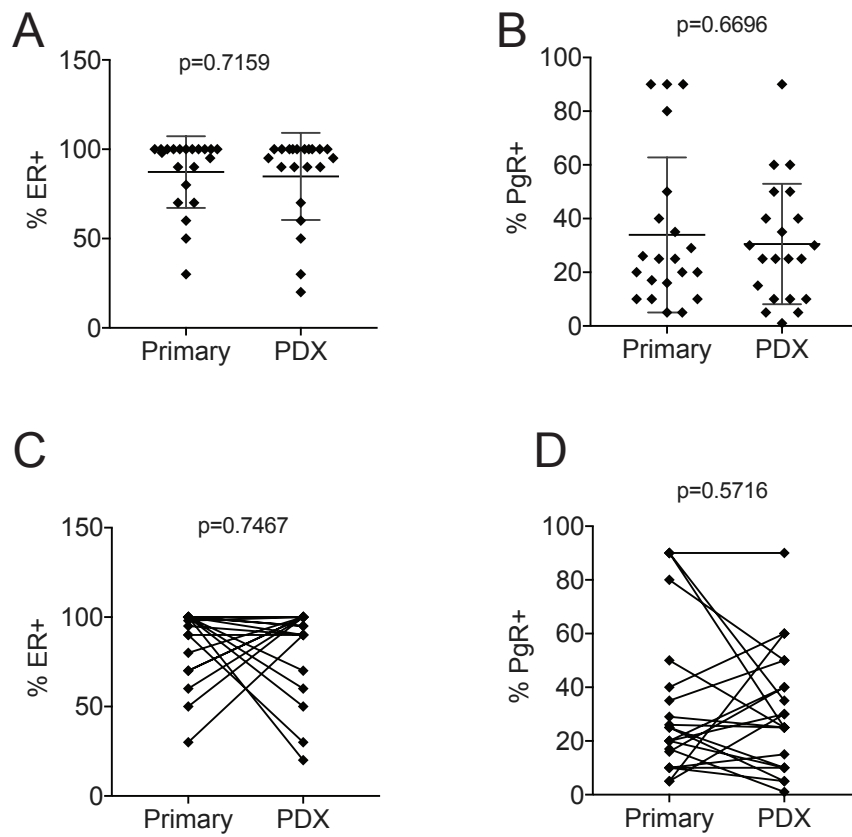
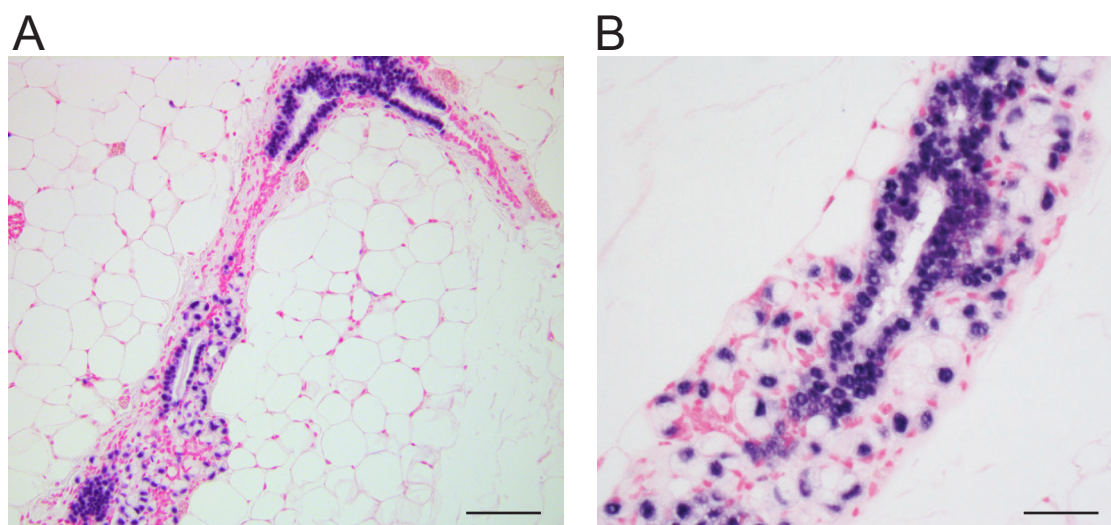
**Figure S1. Different tumor extents in PDXs.**

(A) High tumor extent: Intraductally injected human tumor cells occupy over 95% of the mouse mammary ductal tree (H&E, x 4). (B) Moderate tumor extent: human tumor cells occupy between 10% and 50% of the mouse ductal tree (Alu staining, x 4). (C) Low tumor extent: human tumor cells form small foci occupying less than 5% of the mouse mammary ductal tree (ALU staining,). Scale bars: 800  $\mu\text{m}$ .

**Figure S2. Marker expression.**

(A, C) Distribution of ER and PgR expression in PTs and PDXs, (B, D) Matched ER and PgR expression indices of PT and of the intraductal PDXs



**Figure S3. Human cells colonize mouse milk duct.**

(A, B) Alu stained section of mouse mammary gland intraductally engrafted with cells derived from a lobular carcinoma. Scale bars: 100  $\mu\text{m}$  and 50  $\mu\text{m}$ .