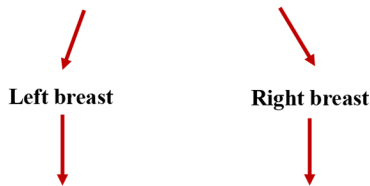


**A**

Breast milk from women with breast cancer,  
at high risk, mutation carriers, or healthy donors



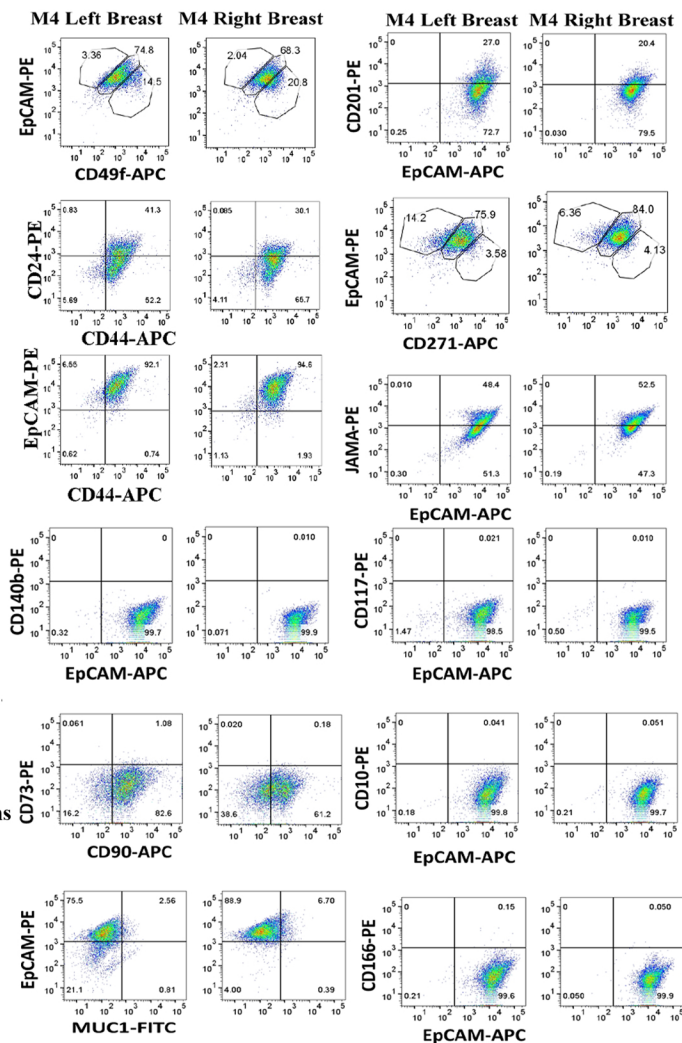
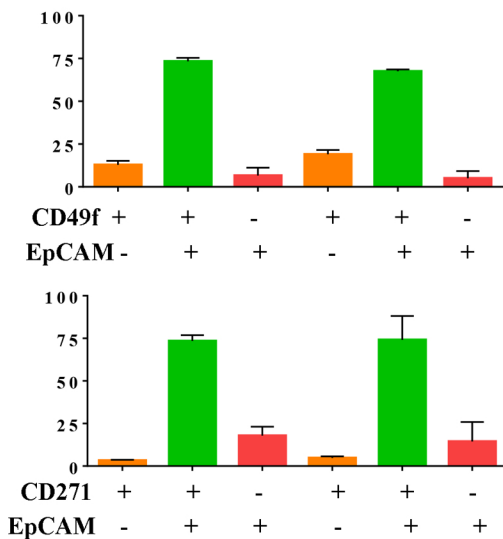
Culture separately under modified epithelial  
reprogramming assay (Molecular Cancer Research  
17:1556-1570);  
Typically 5 cell passages in <2 weeks with 2-5  
millions of cells and cryopreserve for future use.

Comparative analysis

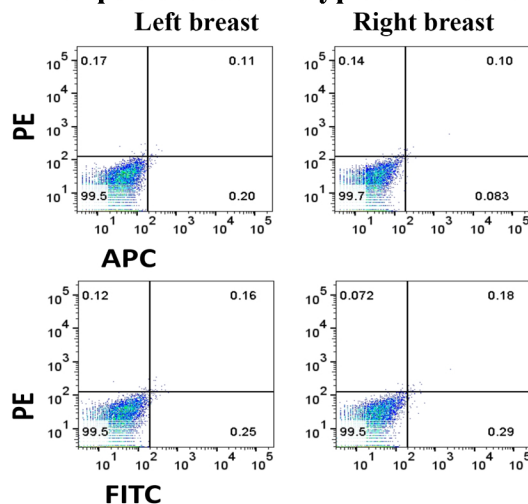
1. Flow cytometry for CSC markers
2. CSC assays such as mammospheres
3. RNA-Seq
4. DNA sequencing
5. Copy number variation analysis

- 1) Detection of aberrant cells with driver mutations
- 2) Test the effects of drugs that may target driver mutations

Time required to complete assay ~30 days

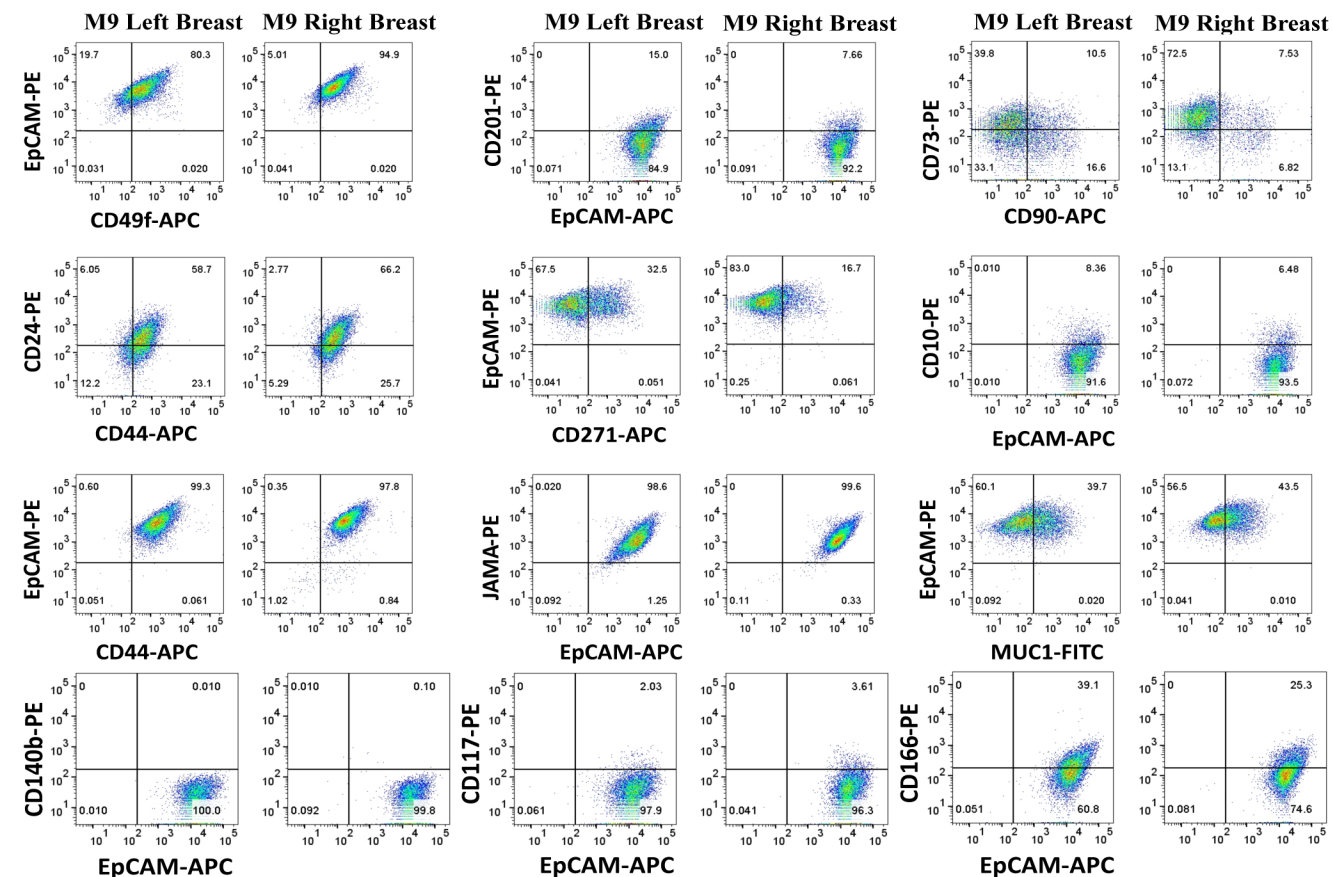
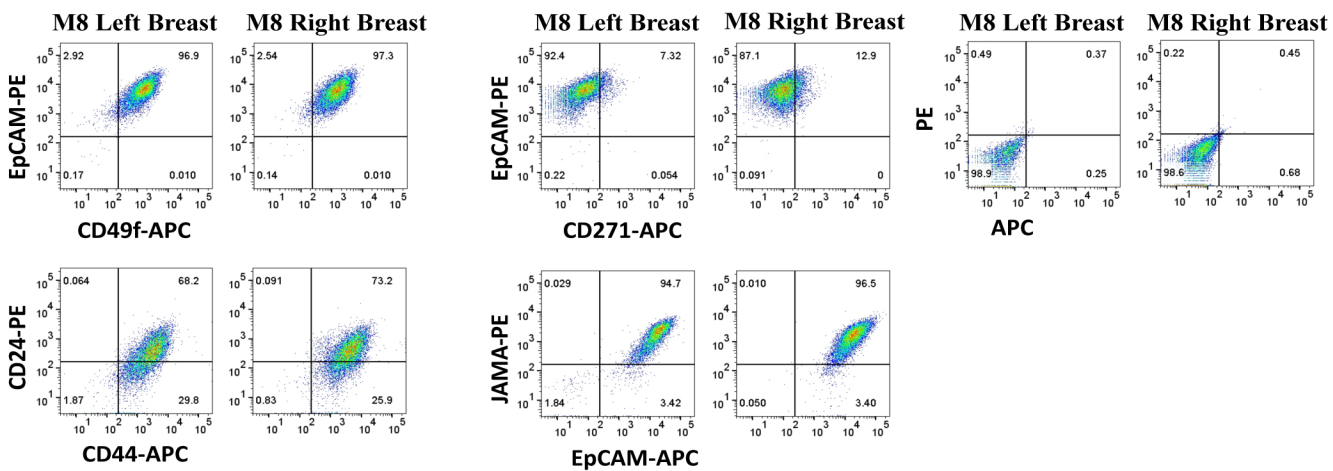
**B****C****D**

Representative isotype control staining

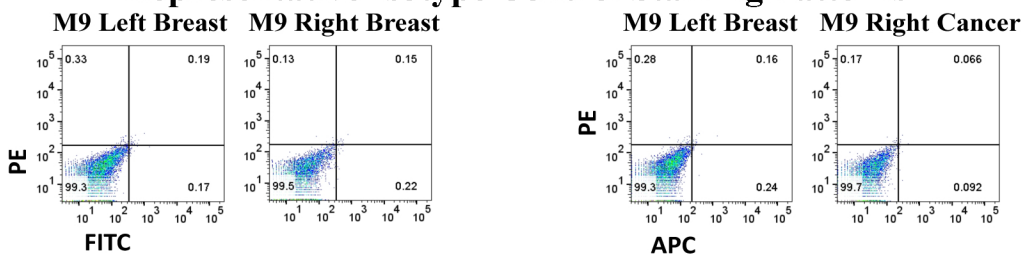


**Fig. S1: Experimental design and cell surface marker profiles of breast milk derived cells of donor M4.** A) Schematic view of the experimental design. B) Representative flow cytometry patterns of breast milk-derived cells of M4. C) Bar graphs showing similar CD49f/EpCAM and CD271/EpCAM staining patterns of breast milk-derived cells of this donor. D) Representative isotype antibody control staining patterns.



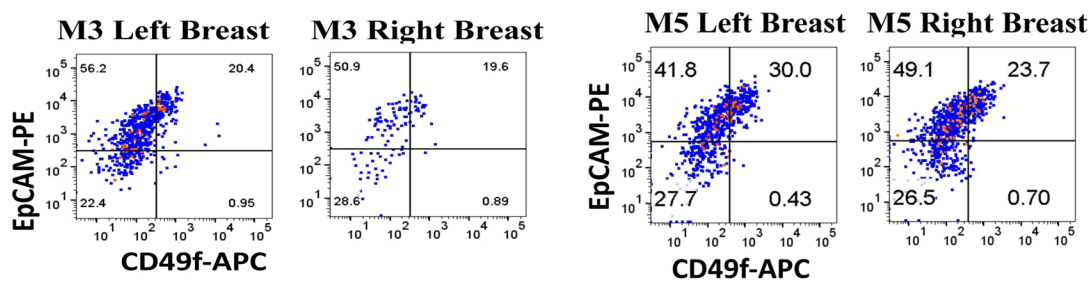


### Representative Isotype Control Staining Patterns

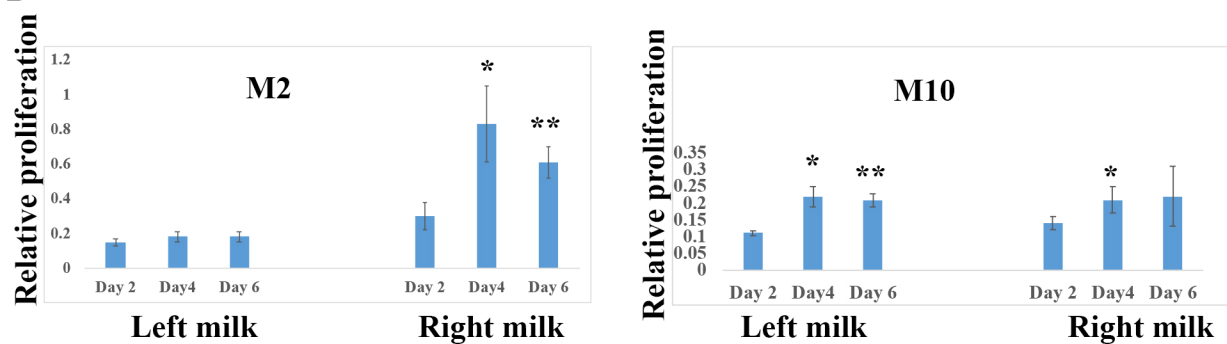


**Fig. S3: Phenotypic similarities in cells derived from the left and the right breast milk of two other donors (M8 and M9). Note inter-individual differences in cell surface marker profiles, particularly for CD201/EpCAM and CD271/EpCAM.**

A



B



**Fig. S4: Breast milk-derived cells generate mammospheres.** A) CD49f/EpCAM staining patterns of mammosphere-derived cells from M3 and M5. B) Growth rate of breast milk-derived cells of M2 and M10. \* $p < 0.003$ ; \*\* $p < 0.0001$  compared to proliferation rate at day 2.