



## Applications

- A tool for enriching mammary cell populations
- Potential for use in evaluating efficacy of anti-cancer drugs that target Wnt signaling

## Benefits

- Versatile biomarker
- Clear results

VARI IP-00053B

**Patent Status:** Issued  
U.S. 7,622,267

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## Low-Density Lipoprotein Receptor 6 (LRP6) as a Mammary Cell Marker

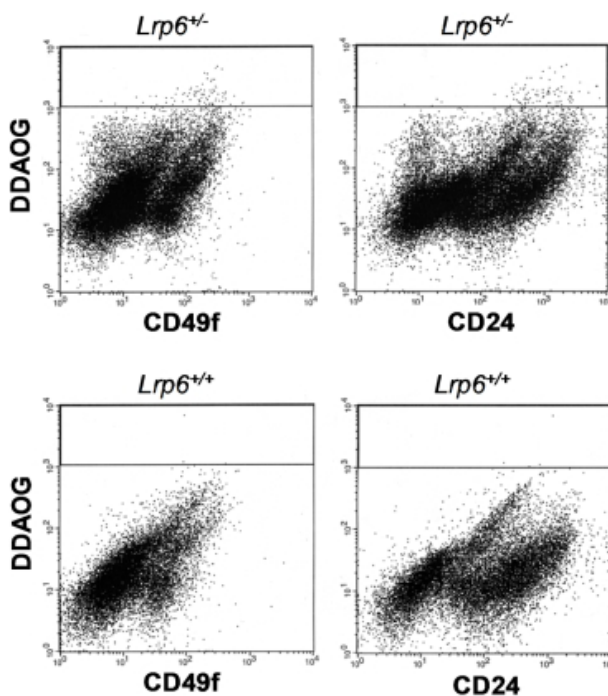
A method for detecting and sorting mammary cells based on LRP6 expression.

### Background

Wnt signaling plays an important role during many steps of development, including organogenesis and tissue homeostasis. The binding of Wnt to a receptor complex composed of one Frizzled (Fzd) protein and either LRP5 or LRP6 initiates the Wnt/ $\beta$ -catenin cascade. Research has shown LRP6 is expressed by mammary epithelial cells within the basal cell layer that also express stem cell markers; moreover, an increased mammary cell expression of LRP6 is associated with human basal-like breast cancer.

### Technology

This technology provides a method for enriching a population of somatic mammary stem cells or mammary tumor stem cells based on LRP6. Also included are screening methods for LRP6 modulators, as well as methods for reducing Wnt signaling, treating Wnt signaling-related diseases, detecting mammary basal-like cells, diagnosing basal-like breast cancer, and inhibiting proliferation of a tumor expressing LRP6, and compositions thereof.



**Figure 1:** Representative FACS results of DDAOG-stained and CD24/CD49f antibody-labeled mammary epithelial cells. The  $\beta$ -gal-cleaved product of DDAOG has far-red fluorescence and was used to detect cells with LRP6 promoter-driven  $\beta$ -gal expression. The DDAOG gate is indicated by the black line. The LRP6<sup>+/-</sup> sample has 0.33 percent DDAOG-positive cells; the LRP6<sup>+/+</sup> negative control sample has 0.01 percent DDAOG-positive cells.

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