**A**

Growth Factor Receptors

Caveolin

Caveola

Signaling molecules confined to caveolae in a quiescent state

Signaling molecules released &/or redistributed = cell responsiveness altered

Signaling molecules confined to caveolae in an inactive state and/or internalized

*Change to MSC environment*

= focal adhesion signaling, non-muscle myosin II expression, membrane tension, & soluble factors may change

= Change to caveolae & caveolin-1 expression

Undifferentiated stem cell

Pre-differentiation/differentiating state

Differentiation

Differentiated cell caveolin-1 re-expressed

**B**

Dimerized Prolactin receptors

Prolactin receptors

Caveolin-1 binds Jak2 and suppresses prolactin signaling

Jak2 associated with receptors

Signaling on

Growth, differentiation

milk production

Before Pregnancy:

Mammary epithelial cell: caveolin-1 expressed

Prolactin levels increase

Breast develops and produces milk

Pregnancy:

Estrogen & progesterone levels drop

Caveolin-1 expression is suppressed

After Birth:

Inhibition of Prolactin signaling removed

Prolactin signaling increases

The mammary gland develops and produces milk