

Researchers identify stem cell source of key process in female reproduction

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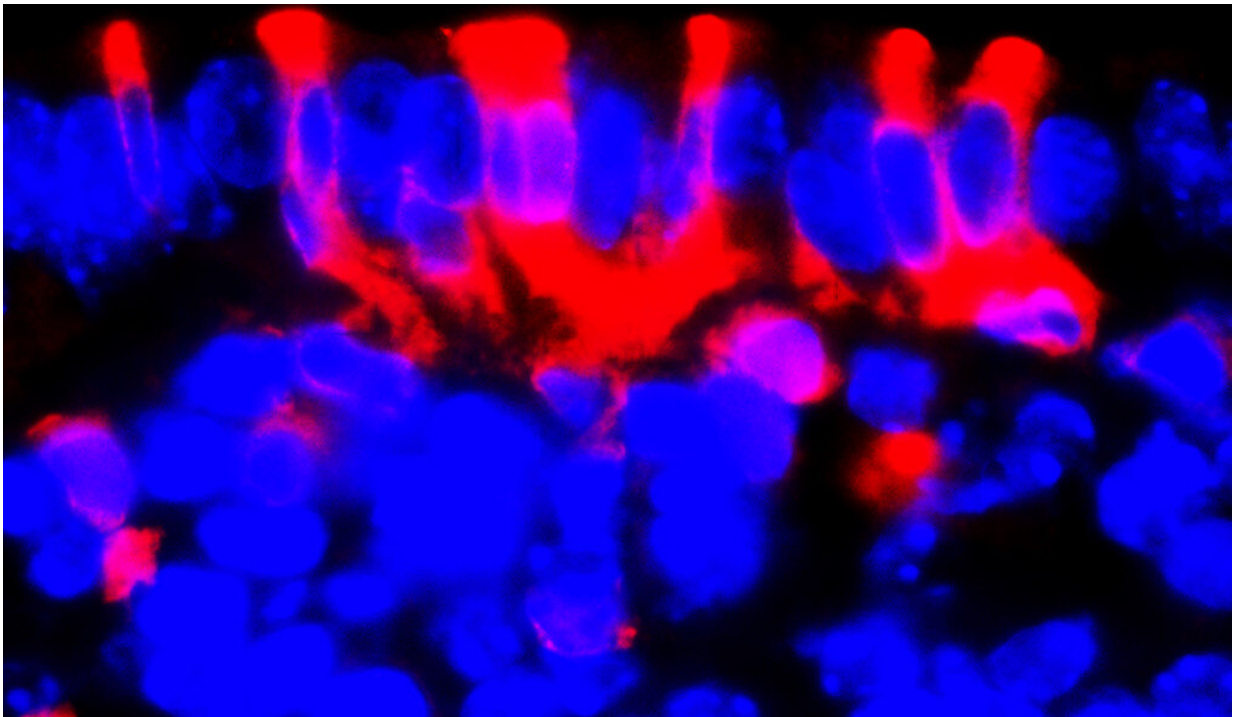


Image of uterine tissue from mouse: Red area shows CD34+ stem cells in inner lining of uterus that incorporate into the endometrium, replacing lost tissue each month. Credit: Yale University

Each month during women's reproductive years, the uterus sheds and regenerates the tissue lining its walls in preparation for a pregnancy or the next cycle. The process behind this age-old and essential part of

human reproduction is not well understood. But recent research led by Yale pathologist Wang Min identifies stem cells and a gene that contribute to this monthly event.

To study the mechanism, the researchers used hormones to stimulate menstruation in mice. They then examined sections of uterine tissue at different stages of the reproductive cycle with a fluorescent microscope. A final step was to quantify the cells found inside the inner lining of the uterus, known as the epithelium.

Min and his colleagues identified a population of [stem cells](#), called CD34+KLF4+, that migrate from inside the uterine lining to become epithelial cells, which replace tissue shed during menstruation. They also discovered a gene that regulates the process. If the [gene expression](#) is abnormally high, it could cause infertility; if gene function is lost, endometrial cancer could develop. These findings suggest the gene could be a promising target for drugs to treat these common conditions, Min said.

The study is published in *Cell Reports*.

More information: Mingzhu Yin et al. CD34+KLF4+ Stromal Stem Cells Contribute to Endometrial Regeneration and Repair, *Cell Reports* (2019). [DOI: 10.1016/j.celrep.2019.04.088](https://doi.org/10.1016/j.celrep.2019.04.088)

Provided by Yale University

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