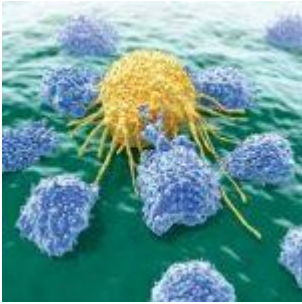


Uterine NK cell differentiation during the menstrual cycle and pregnancy.



Uterine resident natural killer cells (uNKs) are one of the most abundant immune cells present in the endometrium (inner lining of the uterus). Endometrium undergoes changes during the menstrual cycle in response to hormonal fluctuations which has an impact on how immune cells such as uNKs function. However, these changes are poorly understood.

Strunz et al, investigated the differentiation of human uNK cells which undergo constant regeneration and represent the major leukocyte population at the maternal-fetal interface. Researchers used surface proteome and transcriptome analysis from different stages of the menstrual cycle and during pregnancy in humanized mice to *identify a differentiation pathway of uNK cells in vitro and in vivo with sequential acquisition of killer cell immunoglobulin-like receptors and CD39.*

Strunz et al reported that progesterone-regulated release of stromal interleukin-15 drives continuous uNK cell differentiation in response to endometrial generation. *Differentiated uNK cells displayed reduced proliferative capacity and immunomodulatory function including enhanced angiogenic capacity.*

This research shows a *continuous differentiation pathway of human NK cells in the uterus that is coupled to profound functional changes in response to local tissue regeneration and pregnancy.*

Journal Article: Strunz et al. [Continuous human uterine NK cell differentiation in response to endometrial regeneration and pregnancy](#). 2021. Science Immunology

Also read:

- [Sojka et al., 2019. Uterine Natural Killer Cells. Frontiers in Immunology](#)
- [Where do uterine NK cells during pregnancy come from?](#)

Summary by Bonamy Holtak