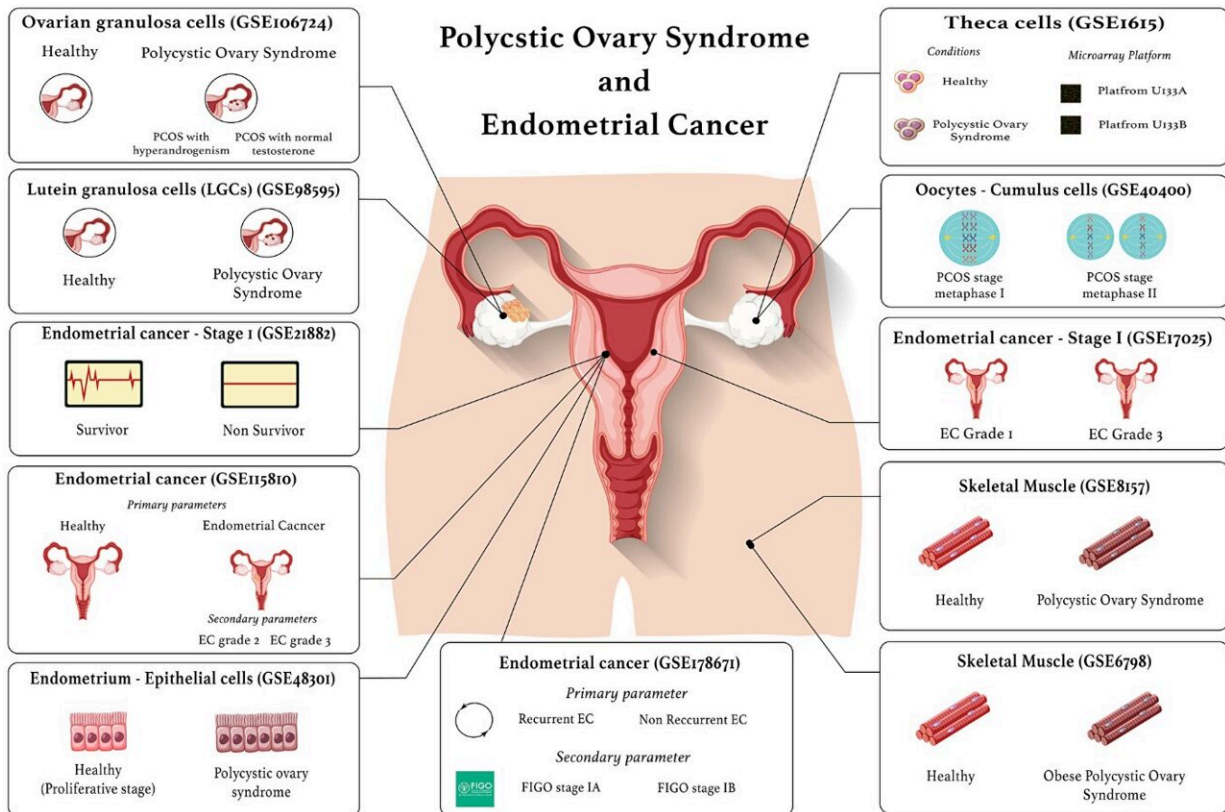


Four novel receptors may link endometrial cancer to PCOS

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Visual representation of the datasets used in this study. Credit: *Oncotarget* (2023). DOI: 10.18632/oncotarget.28513

A new research [paper](#) titled "Transcriptomic analysis identifies four novel receptors potentially linking endometrial cancer with polycystic

ovary syndrome and generates a transcriptomic atlas has been published in *Oncotarget*.

Polycystic Ovary Syndrome (PCOS) is associated with a 3- to 4-fold increased risk of [endometrial cancer](#) (EC), but molecular mechanisms are unclear. Upregulation of the IGF1 gene in PCOS endometrium may increase EC risk, but this is uncertain. In this new study, researchers Fatma Alqutami, Mahmood Hachim, Charlie Hodgman, and William Atiomo from the Mohammed Bin Rashid University of Medicine and Health Sciences and the University of Nottingham aimed to investigate links between EC and PCOS, by analyzing publicly available transcriptomic data.

"The original aim of this study was to investigate the links between EC and PCOS, by analyzing publicly available transcriptomic data and investigate IGF-1 and IGFBP gene expression in the endometrium of women with PCOS and EC compared with normal endometrium," the researchers explain.

The NCBI Gene Expression Omnibus was used to identify relevant studies. Differentially expressed genes (DEGs) were identified and analyzed using Metascape to identify pathways of interest. PCOS DEGs that encode proteins secreted into blood were identified using the Human Protein Atlas blood protein database.

EC DEGs that are cellular receptors were identified using EcoTyper. These were intersected to identify which EC receptors interact with PCOS-secreted proteins. Seven receptors were identified in EC, but only PTPRF, ITGA2, ITGA3, and ITGB4 genes were expressed on epithelial cells. Pathway enrichment of these genes showed that the major and common pathway involved was that of the PI3K-AKT signaling pathway which was consistent with a link between PCOS and EC. However, IGF1 was down regulated in PCOS and EC.

"Our conclusions at this stage do not support a link between IGF-1 and IGFBP genes in PCOS and EC. However, we have identified four novel receptors which may underpin the risk of EC in PCOS, and we believe our findings provide sufficient evidence to form the basis for a transcriptomic atlas to underpin future research into the links between PCOS and EC and the molecular mechanisms underpinning both diseases," the researchers conclude.

More information: Fatma Alqutami et al, Transcriptomic analysis identifies four novel receptors potentially linking endometrial cancer with polycystic ovary syndrome and generates a transcriptomic atlas, *Oncotarget* (2023). [DOI: 10.18632/oncotarget.28513](https://doi.org/10.18632/oncotarget.28513)

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