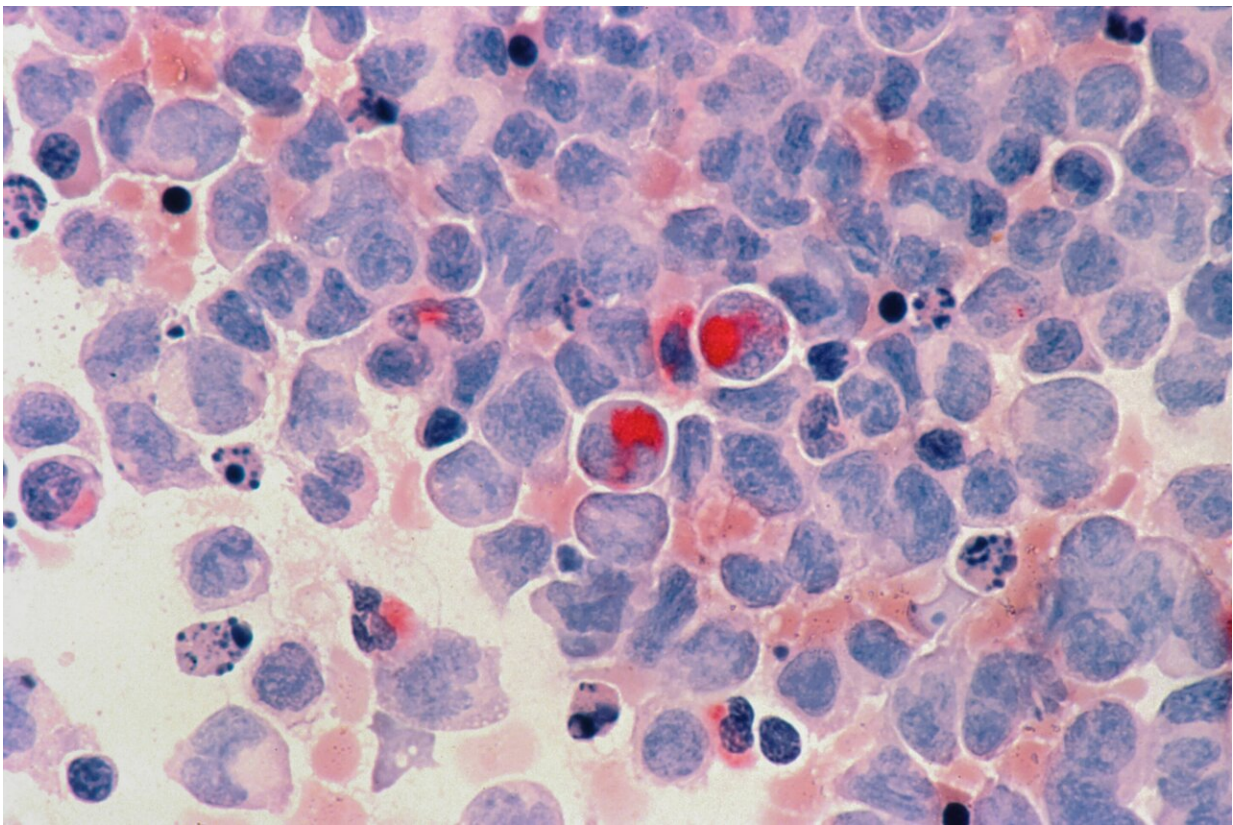


# Study shows that VEGF-A can increase expression of dopamine D2 receptors on endothelial cells

May 20 2022

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Researchers have identified a new molecular drug target that could result in new cancer drugs with fewer side effects.

Previous studies have shown that [vascular endothelial growth factor-A](#) (VEGF-A)—a potent cytokine (signaling protein)—and dopamine (a neurotransmitter/neurohormone) play essential roles in many physiological and pathological functions. In this new laboratory study, Dr. Sujit Basu and colleagues conducted further preclinical analysis of VEGF-A as a target for the development of new cancer therapy approaches.

The team found for the first time that VEGF-A can increase expression of dopamine D2 receptors on [endothelial cells](#) that can then be stimulated to stop the growth of blood vessels that fuel the growth and spread of several diseases, including [colon cancer](#), endometriosis and ovarian hyperstimulation syndrome. Such blood vessel growth is called angiogenesis. This study is published in the *Journal of Cell Science*.

"This is a very compelling discovery that opens up new pathways for developing effective new anti-angiogenic therapy for the treatment of cancer and other diseases where VEGF-A is a known driver of disease growth and spread," said Basu, who serves as a professor at The Ohio State University College of Medicine and is a member of the Translational Therapeutics Program at the OSUCCC—James.

Basu notes that, unlike the presently available anti-VEGF-A anti-angiogenic agents, selective dopamine D2 receptor agonists are inexpensive and have well-established and manageable side effects.

"These drugs are devoid of the [serious side effects](#) of the currently used anti-VEGF-A anti-angiogenic agents in the clinics. We believe they merit further investigation as a viable treatment approach in cancer and other diseases driven by the VEGF-A pathway," Basu said.

Researchers expect to begin testing these drugs through clinical trials in the near future.

**More information:** Chandrani Sarkar et al, VEGF-A controls the expression of its regulator of angiogenic functions, dopamine D2 receptors on endothelial cells, *Journal of Cell Science* (2022). [DOI: 10.1242/jcs.259617](https://doi.org/10.1242/jcs.259617)

Provided by Ohio State University Medical Center

Citation: Study shows that VEGF-A can increase expression of dopamine D2 receptors on endothelial cells (2022, May 20) retrieved 17 July 2023 from <https://medicalxpress.com/news/2022-05-vegf-a-dopamine-d2-receptors-endothelial.html>

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