

Orchid extract holds hope for prostate cancer treatment

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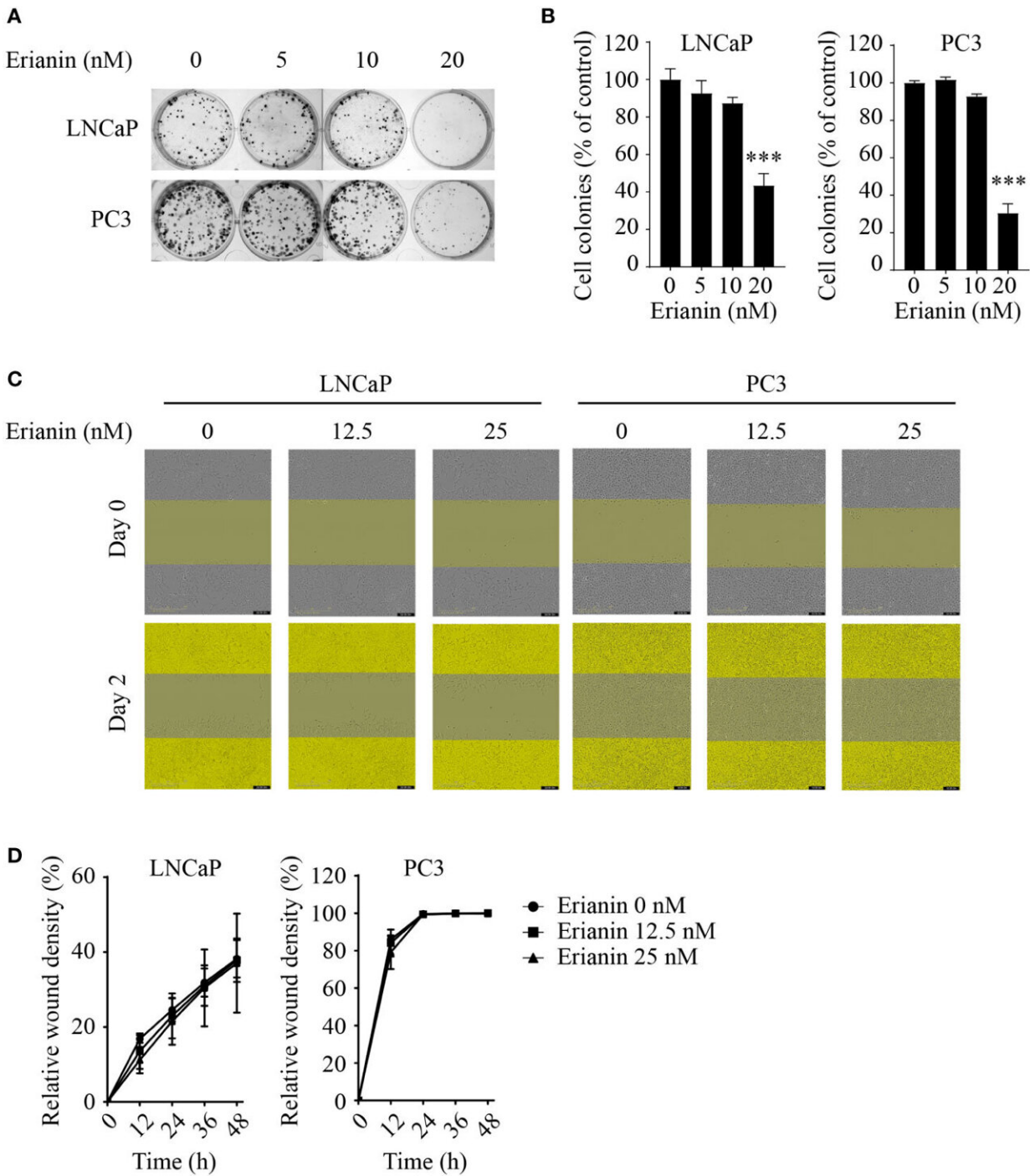


Figure 1. Erianin suppresses colony formation but not migration in both LNCaP and PC3 cells. (A, B) Cells were treated with erianin at indicated concentrations for 10 days. Images are representative of three independent experiments (A) and the number of colonies was quantified (B). (C, D) Wound healing assay was performed to assess cell migration. Cells were treated with erianin at indicated

concentrations for up to 48 h. Images are representative of three independent experiments (C) and the wound closure area were quantified (D). Data are expressed as mean \pm SD. n=3. ***p

Research led by the Centenary Institute has found that a compound extracted from a commonly cultivated orchid could be a potential new treatment option for prostate cancer.

The second most common form of [cancer](#), prostate cancer is also the sixth highest cause of cancer-related mortality worldwide.

In the study, the researchers examined erianin, a natural bibenzyl compound, present in *Dendrobium chrysotoxum*, an orchid species native to Southeast Asia.

Erianin was found to have anti-tumor effects on both androgen-dependent (early-stage) and castration-resistant (advanced-stage) prostate cancer cells.

"Early in their development, [prostate cancers](#) need androgens ([male sex hormones](#)), including testosterone, to grow," explained Dr. Yanfei (Jacob) Qi, Head of the Lipid Cell Biology Laboratory at the Centenary Institute and lead researcher on the study.

"Androgen deprivation therapy, also known as [hormone therapy](#), aims to decrease androgen levels and can help slow or limit the cancer's growth. When the prostate cancer stops responding to this treatment and continues to grow, the prostate cancer is at an advanced stage known as castration-resistant."

Dr. Qi said that the team's research had shown that erianin elevated levels of a fatty acid called C16 ceramide inside the androgen-dependent prostate cancer cells. This caused the cells to die through a process called endoplasmic reticulum stress-associated cell death.

In contrast, erianin alone failed to elevate C16 ceramide levels in the castration-resistant [prostate cancer cells](#). However, artificially increasing C16 ceramide in these cells, in conjunction with the use of erianin did result in successful cell death.

"Novel treatments for prostate cancer are urgently needed," said Dr. Qi.

"Up to 20 percent of patients receiving [androgen deprivation therapy](#) progress to advanced prostate cancer within five years."

"We've shown that erianin could play an important role in the development of new medical drugs that are able to target both early and late-stage prostate cancers, potentially benefiting many patients and helping save lives."

The study was published in the journal *Frontiers in Oncology*.

More information: I Gusti Md Gde Surya C. Trapika et al, Ceramide Regulates Anti-Tumor Mechanisms of Erianin in Androgen-Sensitive and Castration-Resistant Prostate Cancers, *Frontiers in Oncology* (2021). [DOI: 10.3389/fonc.2021.738078](#)

Provided by Centenary Institute

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