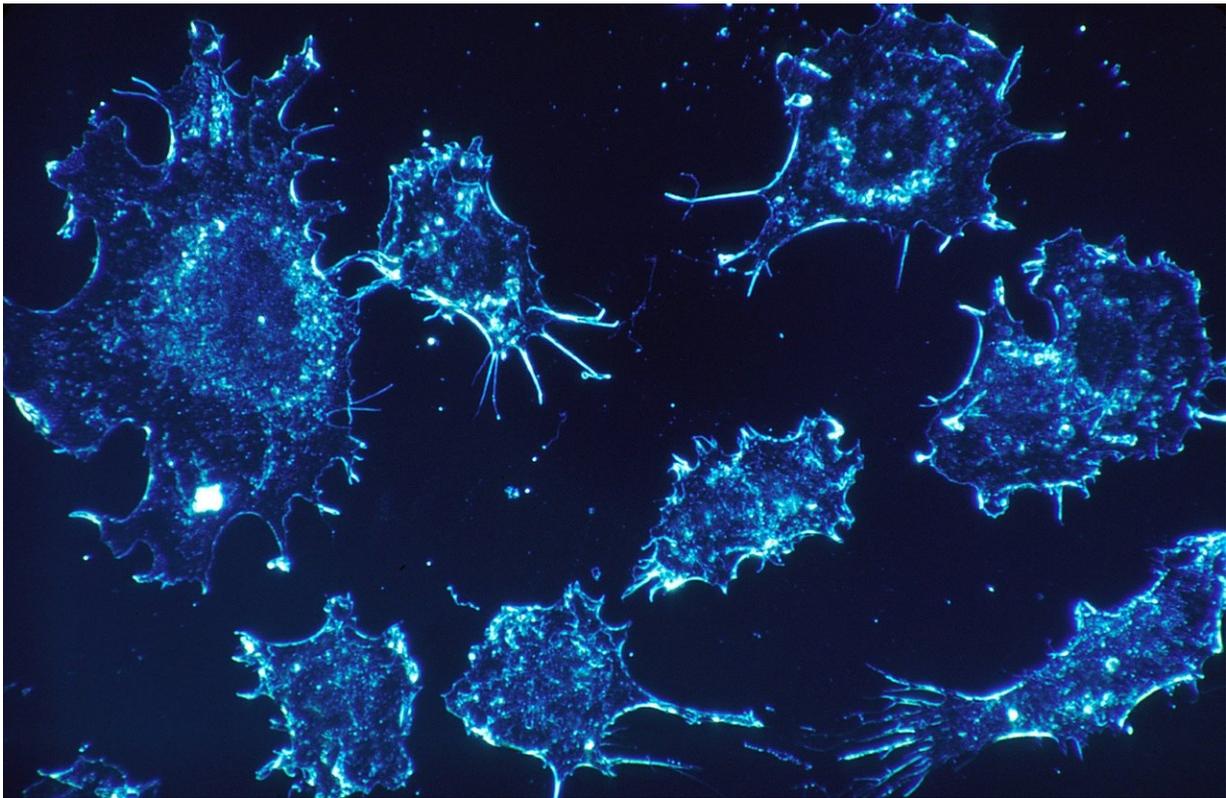


# Compound derived from thunder god vine could help pancreatic cancer patients

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The results of a pre-clinical study led by researchers at the Translational Genomics Research Institute (TGen), an affiliate of City of Hope, suggest how a compound derived from the thunder god vine—an herb used in China for centuries to treat joint pain, swelling and fever—is

able to kill cancer cells and potentially improve clinical outcomes for patients with pancreatic cancer.

The [medicinal plant](#)'s key ingredient, triptolide, is the basis of a water-soluble prodrug called Minnelide, which appears to attack [pancreatic cancer](#) cells and the cocoon of stroma surrounding the tumor that shields it from the body's immune system. Investigators recently published the study results in the journal *Oncogenesis*.

The study found that the compound's mechanism of action is the ability of triptolide (Minnelide) to disrupt what are known as super-enhancers, strings of DNA needed to maintain the genetic stability of [pancreatic cancer](#) cells and the cancer-associated-fibroblasts that help make up the stroma surrounding the cancer.

"The cancer cells rely on super-enhancers for their growth and survival," said Dr. Haiyong Han, a Professor in TGen's Molecular Medicine Division and one of the study's senior authors.

"We found that by disrupting these super-enhancers triptolide not only attacks the cancer cells, but also the stroma, which helps accelerate cancer cell death.

"While triptolide has been known to be a general transcriptional inhibitor and a potent antitumor agent, we are the first to report its role in modulating super-enhancers to regulate the expression of genes, especially cancer-causing genes," said Dr. Han, who also is head of the basic research unit in TGen's Pancreatic Cancer Program.

Pancreatic cancer is the third leading cause of cancer-related death in the U.S., annually killing more than 47,000 Americans.

"There is an urgent need to identify and develop treatment strategies that

not only target the tumor cells, but can also modulate the [stromal cells](#)," said Dr. Daniel Von Hoff, TGen Distinguished Professor and another senior author of the study.

"Based on our findings, using modulating compounds such as triptolide to reprogram super-enhancers may provide means for effective treatment options for pancreas cancer patients," said Dr. Von Hoff, considered one of the nation's leading authorities on pancreatic cancer.

Thunder god vine (*Tripterygium wilfordii*), also known as léi gōng téng, is native to China, Japan and Korea. Traditional Chinese medicine has used the vine for more than 2,000 years as a treatment for everything from fever to inflammation and autoimmune diseases, such as multiple sclerosis and rheumatoid arthritis. The chemical compound triptolide is among the more than 100 bioactive ingredients derived from the thunder god vine.

The study—Triptolide targets super-enhancer networks in pancreatic [cancer cells](#) and cancer-associated fibroblasts—was published Nov. 9 in *Oncogenesis*.

**More information:** Pawan Noel et al, Triptolide targets super-enhancer networks in pancreatic cancer cells and cancer-associated fibroblasts, *Oncogenesis* (2020). [DOI: 10.1038/s41389-020-00285-9](https://doi.org/10.1038/s41389-020-00285-9)

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