

Faculty Spotlight:

Jean Tang, MD, PhD



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Professor of Dermatology

Summary of Work

While new cancer treatments are making incredible advances, physicians agree that the best way to address cancer is to prevent it in the first place. Dr. Jean Tang has been a leader in both prevention and treatment efforts for a variety of skin cancers.

Dr. Tang was the co-author of the first study to conclude that calcium, vitamin D supplements, and a low-fat diet could play an important role in preventing melanoma. She was also part of a pioneering team that discovered the role of aspirin in preventing melanoma—for which she was interviewed by all major television news networks in 2013.

Recently, her lab published a study that discovered that a common anti-fungal treatment called itraconazole may be useful in treating basal cell carcinoma, the most common form of skin cancer. The study is beneficial because most cancer drugs cost millions of dollars to develop from scratch and take decades of research. This work cuts through that process and delivers an already approved drug to patients.

The study tested the drug's effectiveness in treating patients with multiple basal cell carcinoma tumors. Within a month, the size and spread of tumors had decreased in most patients.

Basal cell carcinoma affects nearly 3 million Americans every year. Triggered mainly by excess sun exposure, it is rarely fatal, but advanced-stage tumors can cause pain and skin disfigurement. Older adults with light skin are particularly at risk.

“New drugs cost about \$800 million and an average of 10 years to develop,” Dr. Tang said. “We are shortcutting the process by using a drug that’s already been around for 25 years and given to tens of thousands of people.”

The study described the first evidence of itraconazole’s usefulness in treating this type of skin cancer. It also demonstrates how an existing drug can be repurposed to treat cancer, said Dr. Tang, who was the senior author of the study.

In cancer cells, the drug stops the Hedgehog signaling pathway—a cascade of cellular events triggered by the Hedgehog protein signal necessary for cell growth and development. In healthy adult cells, the pathway is mostly involved in maintaining and repairing tissues.

Biography

Dr. Tang is the president of the American Dermatoepidemiology Network. She is the scholar-innovator for the Harrington Discovery Center and was honored with the prestigious Damon Runyon Cancer Investigator Award.

She graduated in biochemistry at UC-Berkeley before attending medical school at Stanford University, where she earned her MD and PhD. Dr. Tang then completed her medicine internship at Santa Clara Valley Medical Center and

returned to Stanford University for her residency in dermatology. She completed specialized fellowship training at the University of California – San Francisco. She is board certified in dermatology by the American Board of Dermatology.



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