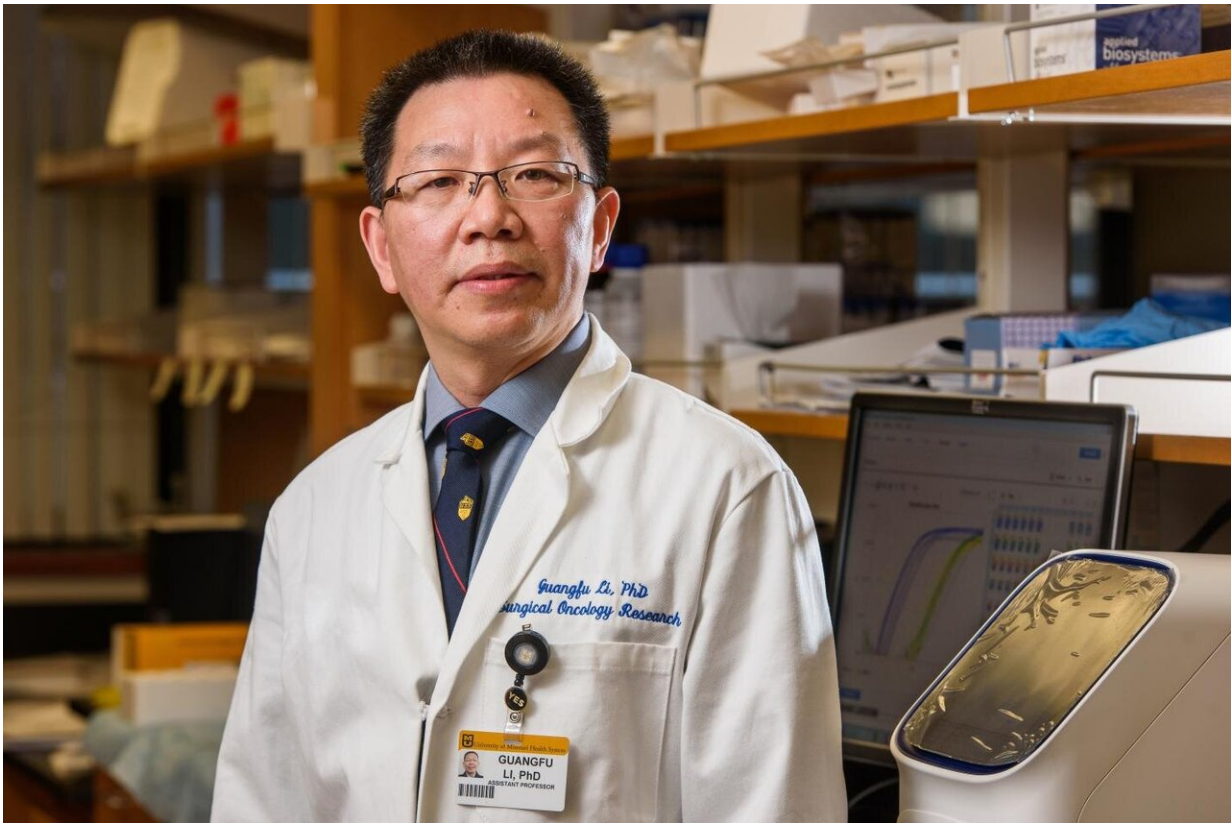


# Researchers discover treatment that suppresses liver cancer

December 8 2020

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Guangfu Li, PhD, DVM, Department of Surgery and Department of Molecular Microbiology and Immunology at the University of Missouri School of Medicine. Credit: Justin Kelley

Researchers from the University of Missouri School of Medicine have

discovered a treatment combination that significantly reduces tumor growth and extends the life span of mice with liver cancer. This discovery provides a potentially new therapeutic approach to treating one of the leading causes of cancer-related death worldwide.

A [cancer](#) translational research team consisting of physicians, and basic scientists created an integrative therapy that combined minimally invasive radiofrequency ablation (RFA) with the chemotherapy drug sunitinib. Individually, each treatment has a modest effect in the treatment of [liver cancer](#). The team hypothesized that pairing the two treatments would have a profound effect by activating an immune response to target and destroy liver cancer cells. That's exactly what their research revealed.

"We treated tumor-bearing mice with sunitinib to suppress the cancer cells' ability to evade detection by the [immune system](#), then the RFA acted as a spark that ignited the anti-tumor [immune response](#)," said principal investigator Guangfu Li, Ph.D., DVM, Department of Surgery and Department of Molecular Microbiology and Immunology.

The team tested this approach by dividing the mice into four groups: a [control group](#), a group that received only sunitinib, a group that received only RFA, and a group that received both RFA and sunitinib. The researchers monitored tumor progression in each mouse via magnetic resonance imaging (MRI) over 10 weeks. They discovered the mice receiving combination therapy experienced significantly slowed [tumor growth](#). The life span of the mice in the combination therapy group was significantly longer than all of the other groups.

"These results indicate that the sunitinib and RFA-integrated therapy functions as an effective therapeutic strategy that is superior to each individual therapy, significantly suppressing tumor growth and extending the lifetime of the treated mice," said co-author Eric Kimchi, MD,

MBA, Chief of Division of Surgical Oncology and General Surgery, and Medical Director of Ellis Fischel Cancer Center.

The team plans to expand their research to study the effectiveness of this combination therapy on companion dogs and eventually on humans.

"Development of an effective sunitinib and RFA [combination therapy](#) is an important contribution to the field of liver cancer treatment and can be quickly translated into clinical applications, as both sunitinib and RFA are FDA approved and are readily available cancer therapies," said co-author Kevin F. Staveley-O'Carroll, MD, Ph.D., MBA, Chair, Department of Surgery, and Director of Ellis Fischel Cancer Center..

**More information:** Xiaoqiang Qi et al, Synergizing sunitinib and radiofrequency ablation to treat hepatocellular cancer by triggering the antitumor immune response, *Journal for ImmunoTherapy of Cancer* (2020). [DOI: 10.1136/jitc-2020-001038](https://doi.org/10.1136/jitc-2020-001038)

Provided by University of Missouri

Citation: Researchers discover treatment that suppresses liver cancer (2020, December 8) retrieved 10 December 2023 from <https://medicalxpress.com/news/2020-12-treatment-suppresses-liver-cancer.html>

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