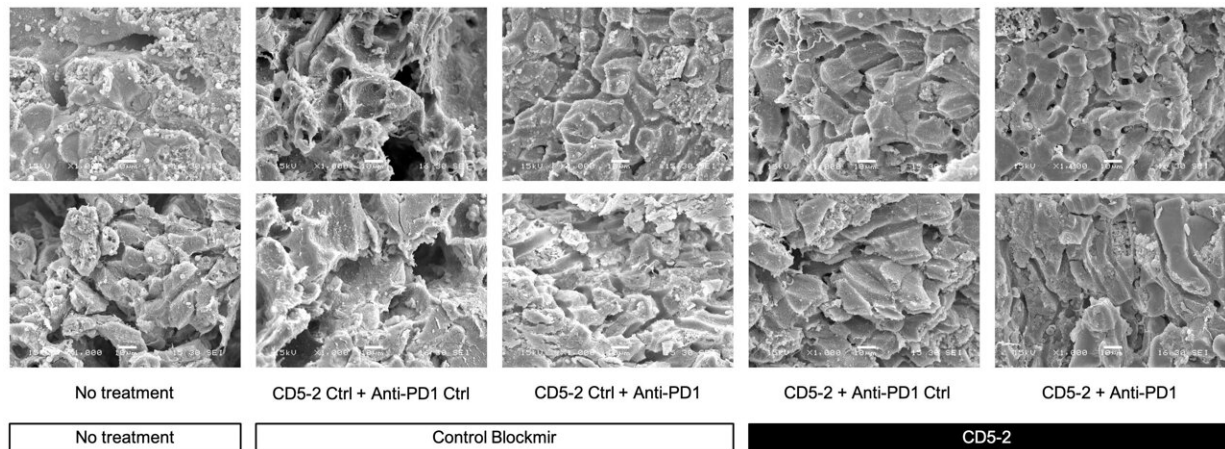


New treatment trialed in mice offers hope for advanced liver cancer

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CD5-2 treatment improved tumor vessels structure. Representative scanning electron microscopy images of liver tumor blood vessels in the different treatment groups. Qualitatively, tumor blood vessels appeared to be more regular and well-organized compared in mice from groups treated with CD5-2 compared to control Blockmir or no treatment. Credit: *Frontiers in Immunology* (2023). DOI: 10.3389/fimmu.2023.1245708

Researchers have discovered a new way to treat hepatocellular carcinoma (HCC) the most common type of liver cancer, and the third leading cause of cancer death worldwide.

The Centenary Institute led study revealed an encouraging treatment strategy involving the use of a new drug called Blockmir CD5-2,

combined with a drug called programmed cell death protein 1 antibody (anti-PD1 antibody). This combination proved effective in reducing liver tumor size in mice. The research was published in the journal *Frontiers in Immunology*.

Lead author of the study, Dr. Ken Liu, a researcher in the Centenary Institute's Center for Cancer Innovations said the discovery was exciting and had the potential to be a viable treatment for advanced liver cancer.

"The synergistic effect of the drugs Blockmir CD5-2 and anti-PD1 antibody significantly reduced the size of liver tumors in mice in our study. We believe that this dual-drug approach enhances the immune system, rendering it more efficient in combating [cancer cells](#) and reducing tumors," said Dr. Liu.

Dr. Liu explained that liver tumors often have [abnormal blood vessels](#) and [low oxygen levels](#), creating an environment that suppresses the immune system and the body's ability to fight cancer.

"Blockmir CD5-2 addresses this issue by promoting the health of tumor blood vessels through the activation of a protein called VE-Cadherin. This results in improved [blood supply](#) and oxygen levels within the tumors," said Dr. Liu.

"The enhanced blood vessel conditions within the tumors means that more cancer-targeting immune cells, specifically cytotoxic T cells, can infiltrate the tumor and effectively combat the disease," he said.

The researchers said that use of the anti-PD1 antibody was also a crucial component of the innovative treatment approach, helping the [immune system](#) fight cancer more effectively by blocking a protein that hinders the immune response.

Senior study authors, Professor Jennifer Gamble from the Centenary Institute's Center for Healthy Aging and Professor Geoff McCaughan from the Centenary Institute's Center for Cancer Innovations said that current effective treatment options for liver cancer were limited and that the new therapeutic approach held tremendous potential for effectively treating such a challenging disease.

More information: Ken Liu et al, Novel miRNA-based drug CD5-2 reduces liver tumor growth in diethylnitrosamine-treated mice by normalizing tumor vasculature and altering immune infiltrate, *Frontiers in Immunology* (2023). [DOI: 10.3389/fimmu.2023.1245708](https://doi.org/10.3389/fimmu.2023.1245708)

Provided by Centenary Institute

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