

Researchers identify therapy that shrinks tumors in patients with multiple myeloma

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Credit: Mayo Clinic

Mayo Clinic researchers have found that an experimental drug, LCL161, stimulates the immune system, leading to tumor shrinkage in patients affected by multiple myeloma. The findings are published in *Nature Medicine*.

Multiple myeloma is a blood cancer that affects [plasma cells](#) - [white](#)

[blood cells](#) that normally produce antibodies to fight infection. Rather than produce helpful antibodies, the cancer cells, as they grow, secrete large amounts of a single antibody that accumulate in the body, causing kidney problems and infections.

"The drug, LCL161, was initially developed to promote tumor death," says Marta Chesi, Ph.D., a Mayo Clinic biochemist and lead author of the study of 25 Multiple Myeloma patients. "However, we found that the drug does not kill [tumor cells](#) directly. Rather, it makes them more visible to the immune system that recognizes them as foreigner invaders and eliminates them."

Mayo Clinic researchers will conduct a follow-up clinical trial of LCL161 in combination with an inhibitor of immune checkpoints that has been widely used in many cancer treatments to evaluate if LCL161 could represent a potential new treatment option.

"The model for preclinical studies to predict with great accuracy which drugs would work in the clinic was developed a decade ago," says Dr. Chesi. "And it has been instrumental in the prioritization of which experimental therapeutics should be tested in patients with multiple myeloma."

The research highlights the importance of studying the effects of drugs not only on the tumor cells in a culture plate, but also on the interaction of the tumor cells with their own microenvironment. The finding that LCL161 is active against [multiple myeloma](#) suggests that similar drugs may have broader clinical activity than previously thought.

More information: Marta Chesi et al. IAP antagonists induce anti-tumor immunity in multiple myeloma, *Nature Medicine* (2016). [DOI: 10.1038/nm.4229](https://doi.org/10.1038/nm.4229)

Provided by Mayo Clinic

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