

Researchers identify possible new combination treatment for advanced melanoma

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Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

A study by researchers at the UCLA Jonsson Comprehensive Cancer Center suggests that using an immunotherapy drug called NKTR-214,

also known as bempegaldesleukin, in combination with an infusion of anti-tumor immune cells, or T cells, may produce a stronger immune response that could help fight advanced melanoma.

When tested in mice with melanoma tumors that were unlikely to stimulate an [immune response](#), the approach increased the number of anti-tumor immune cells, and those immune cells lived longer and functioned better than the standard therapy, empowering the cells to destroy the tumor.

Adoptive cell therapy is a type of immunotherapy that has had promising results for treating people with advanced cancers. The approach involves extracting and harvesting immune cells from a patient and engineering them in the laboratory to attack specific antigens on the surface of tumors. One challenge is that it requires giving patients interleukin 2, a protein signaling molecule in the immune system, to promote the development and expansion of the infused immune cells. But interleukin 2 can also activate cells to suppress the [immune system](#), and because it is highly toxic, it can have serious adverse side effects.

Researchers have been seeking ways to produce large number of [immune cells](#) without exposing patients to those [negative side effects](#)—including by combining adoptive cell therapy with other treatments.

Researchers used mice to test NKTR-214 in combination with adoptive cell therapy. Using bioluminescence imaging, the researchers tracked the movement of T cells in the mice that received the combination therapy. The team observed an expansion of T cells in the spleen, the organ that helps accelerate the activation and expansion of T cells throughout the body. The T cells then migrated to the tumor, where they continued to have a long-lasting effect. The in vivo expansion and T cell accumulation in tumors was greatly improved when using NKTR-214 compared to using interleukin-2.

While immunotherapy has changed the face of cancer treatment for people with advanced cancers, it still only works in a small subset of patients. The results of the UCLA study suggest that using NKTR-214 in combination with adoptive cell therapy could be effective for more people with advanced solid tumors.

The study is published online in *Nature Communications*.

More information: *Nature Communications* (2020). [DOI: 10.1038/s41467-020-14471-1](https://doi.org/10.1038/s41467-020-14471-1)

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