

Novel drug cocktails strengthen targeted cancer therapies while lessening side effects

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Killer T cells surround a cancer cell. Credit: NIH

Mount Sinai researchers have discovered that certain drug cocktails help targeted therapies attack cancer more efficiently while lessening common side effects, according to a study published today in *Cancer*

Research.

The cocktails could also help stave off cancer's ability to become resistant to drugs, by attacking from multiple angles the cancer's ability to grow. The cocktails, which include chemotherapy, anti-tumor antibiotics, and chemical compounds, are given at low doses that would normally not give a therapeutic benefit on their own. Instead, they bolster a patient's response to a separate targeted therapy drug, which blocks enzymes that help cancer cells grow.

Researchers discovered this novel way to enhance targeted [cancer drugs](#) by testing the drug cocktails on human cancer cell lines, fruit flies, and mice. They believe the cocktails can be used with a targeted therapy drug or after a failed attempt with a targeted therapy drug. The researchers found that some of these drugs can be paired together in cocktails in multiple cancer types, potentially providing a treatment option for a wide variety of [cancer patients](#).

"Targeted therapies have revolutionized cancer treatment by targeting fewer components within a human cell, thereby promising better efficacy and lower side effects compared to chemotherapy," said Tirtha K. Das, Ph.D., Assistant Professor of Cell, Developmental and Regenerative Biology at The Tisch Cancer Institute at the Icahn School of Medicine at Mount Sinai. "Yet clinical trials show that targeted therapies still elicit side effects, and in many cases [cancer cells](#) develop resistance mechanisms to these therapies, eventually leading to disease progression in patients. Our work addresses the central question faced by physicians who treat cancer patients: how do targeted therapies both promote resistance in [cancer](#) cells and evoke toxic side effects in patients?"

Provided by The Mount Sinai Hospital

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