

Study suggests that autophagy inhibitors could improve efficacy of chemotherapies

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Chemotherapies treat cancer by killing tumor cells, but certain types of chemotherapy can also drive an immune system response to target and destroy the remaining tumor cells.

This immune targeting is elicited by molecules called damage-associated molecular patterns (DAMPs) that are released when a cell is killed. DAMPs are normally degraded in a process called autophagy, and it has been suggested that limiting the efficiency of autophagy could improve the efficacy of some chemotherapies. However, because autophagy is also critical to other aspects of immune system function, it is possible that inhibiting autophagy could backfire and compromise chemotherapy-driven immune targeting instead.

This week in the *JCI*, research led by Jayanta Debnath at UCSF has shown that inhibiting autophagy does not impair the immune response to tumors during chemotherapy, providing support for the idea that combining autophagy inhibitors with certain chemotherapies may aid cancer treatment.

In mouse models of cancer, treatment with autophagy inhibitors did not affect how immune cells targeted tumors during chemotherapy, in spite of other changes in general [immune system function](#). These results suggest that inhibiting [autophagy](#) may be a safe combinatorial treatment to enhance the cancer-killing effects of certain chemotherapies.

More information: Hanna Starobinets et al, Antitumor adaptive

immunity remains intact following inhibition of autophagy and antimalarial treatment, *Journal of Clinical Investigation* (2016). DOI: [10.1172/JCI85705](https://doi.org/10.1172/JCI85705)

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