

Cytokine therapy enhances natural killer cell functions against tumor cells

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Natural killer (NK) cells are sentinels within the immune system that rapidly respond to and kill diseased cells. NK cells typically target and eliminate cells lacking the surface protein MHC class I. However, many tumor cells lack this protein yet are resistant to NK cell surveillance and killing.

A new study in the *Journal of Clinical Investigation* reveals that cytokine therapy enhances the activity of NK cells against tumors lacking MHC class I.

Using murine models, David Raulet and colleagues at the University of California Berkeley determined that tumors lacking MHC class I inactivate NK cells.

Mixed tumors composed of MHC class I positive and MHC class I negative cells also caused NK cell to become nonresponsive. Importantly, treatment of mice bearing MHC class I-deficient tumors with the cytokines IL-12 and IL-18 or with the H9 "superkine" restored NK cell activity, reduced tumor size, and increased survival.

The results of this study support further investigation into the use of cytokine therapy for patients with tumors lacking MHC class I.

More information: Cytokine therapy reverses NK cell anergy in MHC-deficient tumors, *J Clin Invest.* [DOI: 10.1172/JCI74337](https://doi.org/10.1172/JCI74337)

Cytokines reinstate NK cell–mediated cancer immunosurveillance, *J Clin Invest.* DOI: [10.1172/JCI78531](https://doi.org/10.1172/JCI78531)

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