

A NOVEL MODULATOR OF TUMOR ANGIOGENESIS AND ANTI-TUMOR IMMUNITY

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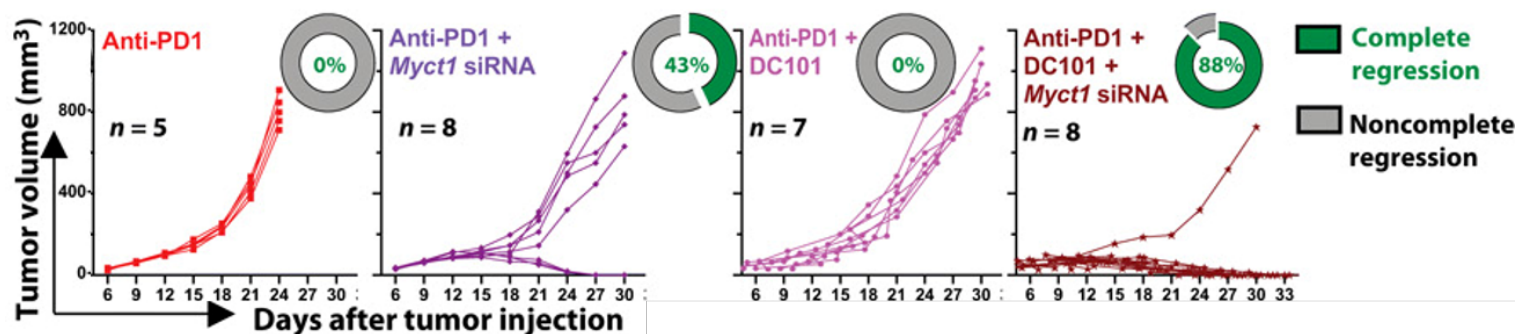
Zou, Dianxiong

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Technology Description

Researchers in Kyunghye Choi's lab at Washington University in St. Louis have identified a novel target, *Myct1*, that modulates tumor angiogenesis and anti-tumor immune response. *Myct1* inhibition with siRNA blocks angiogenesis and promotes infiltration of cytotoxic T lymphocytes, increasing the effect of immune checkpoint inhibitors.

Existing anti-angiogenic therapies, like VEGF inhibitors, have seen incomplete or modest successes in patients. Adding *Myct1* inhibition to the therapy appears to drastically improve the efficacy and promote more complete tumor regression.



Mice with anti-PD1-refractory breast tumors saw significant tumor regression with a combination of anti-PD1, VEGFR2 blocking antibody DC101, and *Myct1* siRNA

Stage of Research

The inventors tested *Myct1* inhibition by siRNA in both anti-PD1-responsive (1956 sarcoma, subcutaneous) and anti-PD1-refractory (PyMT-BO1, orthotopic) tumor models. Mice received a combination of anti-PD1, VEGFR2 blocking antibody DC101, and/or a *Myct1* directed siRNA-peptide nanoparticle starting from day 9 following tumor injection. The inhibition of *Myct1* drastically increased the efficacy of both anti-PD1 and DC101. Current work focuses on the development of an anti-*Myct1* blocking antibody.

Publications

- Kabir AU, Subramanian M, Lee DH, Wang X, ... & Choi K. (2021). [Dual role of endothelial *Myct1* in tumor angiogenesis and tumor immunity](#). *Science Translational Medicine*, 13(583):eabb6731.

Applications

- Solid tumor diseases, particularly in combination with immune checkpoint inhibitors and VEGF inhibitors

Key Advantages

- Novel inhibition target for angiogenesis
- Increases efficacy of checkpoint inhibitors and existing anti-angiogenesis therapeutics

Patents: Pending

Related Web Links: Choi [Profile](#) & [Lab](#)