



Universiteit  
Leiden  
The Netherlands

## **The repercussions of recognition: imprints of T cells on the tumor microenvironment**

Slagter, M.

### **Citation**

Slagter, M. (2025, September 23). *The repercussions of recognition: imprints of T cells on the tumor microenvironment*. Retrieved from <https://hdl.handle.net/1887/4261507>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4261507>

**Note:** To cite this publication please use the final published version (if applicable).

Stellingen behorende bij het proefschrift getiteld The Repercussion of Recognition: Imprints of T cells on the Tumor Microenvironment.

1. The modulatory effects of T cell triggering reverberate far beyond the antigen-presenting cell and potentially influence entire tissue microenvironments (Hoekstra et al., 2020; Thibaut et al., 2020; this thesis)
2. While there is substantial evidence supporting immune sculpting of cancers, the loss of specific neoantigens in treatment-naïve primary tumors remains only weakly supported (this thesis).
3. For most cancer indications and therapies, no single predictive biomarker will be universally sufficient. Progress will require investment in multi-modal data and the thoughtful integration of those data (this thesis).
4. One of the greatest challenges in data-driven biology is accounting for confounding sources of variation. Enticing patterns can be deceptively convincing, making it all too easy to be misled (this thesis).
5. The term 'social science' should not be used in a derogatory manner. Among many other contributions, this field of research has helped normalize the use of many foundational ways of analysing (observational) data (e.g. PCA, latent variable models, linear and logistic regression, factor analysis) in the biological sciences.
6. Simulation studies offer a scale and throughput that experimental approaches typically cannot match. Simulations can complement experimental practice in generating testable hypotheses and offer mechanistic underpinnings to complex observations (Beltman et al. (2007); Beck et al. (2019); Borghans et al. (2004)).
7. Since loosening immune tolerance to boost anti-tumor immunity and reinforcing it to prevent autoimmunity are two sides of the same coin, it is striking how little interaction exists between the scientific communities pursuing these opposing goals (Mangani et al., 2023)
8. Scientists have a vital societal role in analyzing and communicating complex concepts—especially those with implications for policy and governance. To support this, scientists should be meaningfully incentivized to engage in public outreach.
9. Evidence updates belief multiplicatively rather than additively. When evidence is weak, noisy, uncertain, or conditionally dependent, posterior belief should end up lesser confident than the frequently applied and intuitive "sum" would suggest.
10. Innovation has become synonymous with private profit and disruption. But some of the major challenges we face—climate change, inequality, ecological collapse—demand a kind of innovation that is rooted in solidarity, sustainability, and shared prosperity. Social democrats must not just tolerate but fully embrace technological advancement again.

## References

Hoekstra, M.E., Bornes, L., Dijkgraaf, F.E., Philips, D., Pardieck, I.N., Toebe, M., Thommen, D.S., van Rheenen, J., and Schumacher, T.N.M. (2020). Long-distance modulation of bystander tumor cells by CD8<sup>+</sup> T-cell-secreted IFN- $\gamma$ . *Nature Cancer* 1, 291–301.

<https://doi.org/10.1038/s43018-020-0036-4>.

Thibaut, R., Bost, P., Milo, I., Cazaux, M., Lemaître, F., Garcia, Z., Amit, I., Breart, B., Cornuot, C., Schwikowski, B., et al. (2020). Bystander IFN- $\gamma$  activity promotes widespread and sustained cytokine signaling altering the tumor microenvironment. *Nat Cancer* 1, 302–314.

<https://doi.org/10.1038/s43018-020-0038-2>.

Beltman, J.B., Marée, A.F.M., Lynch, J.N., Miller, M.J., and de Boer, R.J. (2007). Lymph node topology dictates T cell migration behavior. *J Exp Med* 204, 771–780.

<https://doi.org/10.1084/jem.20061278> .

Beck, R.J., Slagter, M., and Beltman, J.B. (2019). Contact -dependent killing by cytotoxic T lymphocytes is insufficient for EL4 tumor regression in vivo. *Cancer Research* 79.

<https://doi.org/10.1158/0008-5472.CAN-18-3147>.

Borghans, J.A.M., Beltman, J.B., and De Boer, R.J. (2004). MHC polymorphism under host - pathogen coevolution. *Immunogenetics* 55, 732–739. <https://doi.org/10.1007/s00251-003-0630-5>.

Mangani, D., Yang, D., and Anderson, A.C. (2023). Learning from the nexus of autoimmunity and cancer. *Immunity* 56, 256–271. <https://doi.org/10.1016/j.immuni.2023.01.022> .