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Targeting SUMO signaling to wrestle cancer

Kroonen, J.S.

Citation

Kroonen, J. S. (2023, December 7). *Targeting SUMO signaling to wrestle cancer*. Retrieved from <https://hdl.handle.net/1887/3665909>

Version: Publisher's Version

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Targeting SUMO Signaling to Wrestle Cancer

1. Overexpression of SUMOylation machinery in cancer cells can hint on cancer aggressiveness and clinical outcome. *This thesis*
2. SUMOylation inhibition is a powerful cytostatic *in vitro*, however *in vivo* its immunomodulatory capacity is making the difference in the fight against cancer. *This thesis*
3. The key to implementing SUMOylation inhibition as a cancer treatment is pairing up with a complementary therapy. *This thesis*
4. SUMOylation inhibition in combination with hypomethylation effectively potentiates TCR T cell therapy and can potentially extend to all adoptive cell therapies. *This thesis*
5. SUMOylation itself can be considered neither tumor promoting nor tumor suppressive; rather, it's a necessity for all cells, which makes it important for the oncogenic potential of cancer cells.
Adapted from Seeler, J. S. & Dejean, A. *SUMO and the robustness of cancer. Nat Rev Cancer 17, 184–197 (2017).*
6. SUMO proteins guard the immune system.
Adapted from Sabrina Adoriso, Alessandra Fierabracci, Isabella Muscari, Anna Marina Liberati, Emira Ayroldi, Graziella Migliorati, Trinh Thi Thuy, Carlo Riccardi, Domenico V. Delfino. *SUMO proteins: Guardians of immune system. Journal of Autoimmunity, 84, 21 – 28 (2017).*
7. The targeting of SUMO E3 ligases rather than total SUMOylation via SUMO E1 inhibition will increase therapy specificity and potentially reduce toxicity.
8. Combination therapy is the key strategy for effective cancer therapy.
9. If you have the knowledge, use it; doing is the start of improvement.
10. If something scares you, face it; it can only become your job.
Adapted from Camiel Kroonen