SUMO unchained: molecular mechanisms of ubiquitin-like signal transduction in cell cycle progression

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Stellingen behorende bij het proefschrift getiteld;
SUMO unchained; molecular mechanisms of ubiquitin-like signal transduction in cell cycle progression

1. SUMO chain formation is not an exclusive signal for degradation by the proteasome, but can have non-proteolytic functions (this thesis, Poulsen 2013, Keiten-Schmitz 2019, Liao 2022)

2. Proteomic studies on rare diseases have the potential to find missing pieces to unravel intricate mechanisms underlying particular human diseases (this thesis)

3. Proteases SENP6 and SENP7 play indispensable roles in cell proliferation but are unable to compensate for each other, probably due to target specificity (this thesis)

4. SUMO and ubiquitin, and possibly other PTMs, act synergistically on several proteins, targeting protein groups rather than individual proteins. (this thesis, Psakhye and Jentsch 2012)

5. A temporary loss of SENP7 in cells does not affect proteins in a similar way as a permanent loss, hinting at a role for SENP7 in early development (this thesis)

6. How SUMO chains, with possible branched architecture, are assembled on target proteins is currently unknown (this thesis)

7. Whether ubiquitin-targeted SUMO E3 ligases exist, as opposed to SUMO-targeted ubiquitin E3 ligases (STUbLs) is currently unclear (this thesis)

8. SUMO is important for mitosis as knockdown causes an overall delay in cell cycle progression. (Schimmel 2014, Eifler 2015)

9. Because we understand the mechanics of how something works, does not make it any less of a miracle. Adapted from *Charlaine Harris*

10. While dedicating yourself to science, it is important to take care of your own mental- and physical health