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Targeting SUMO signaling to wrestle cancer

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LIST OF PUBLICATIONS

Kroonen JS, Wouters AK, Graaf-de IJ, Kumar S, Remst DFG, Teunisse AFAS, Heemskerk MHM, Vertegaal ACO. Repurposing 5-Aza-2' deoxycytidine and TAK981 to Augment T Cell Receptor Therapy. *Manuscript in preparation*

Kroonen JS, Graaf-de IJ, Kumar S, Remst DFG, Wouters AK, Heemskerk MHM, Vertegaal ACO. Inhibition of SUMOylation enhances DNA hypomethylating drug efficacy to reduce outgrowth of hematopoietic malignancies. *Leukemia* 2023 Apr;37(4):864-876. doi: 10.1038/s41375-023-01838-8. PMID: 36792656; PMCID: PMC10079526

Yatskevich S, **Kroonen JS**, Alfieri C, Tischer T, Howes AC, Clijsters L, Yang J, Zhang Z, Yan K, Vertegaal ACO, Barford D. Molecular mechanisms of APC/C release from spindle assembly checkpoint inhibition by APC/C SUMOylation. *Cell Rep.* 2021 Mar 30;34(13):108929. doi: 10.1016/j.celrep.2021.108929. PMID: 33789095; PMCID: PMC8028313.

Kroonen JS, Kruisselbrink AB, Briare-de Bruijn IH, Olaofe OO, Bovée JVMG, Vertegaal ACO. SUMOylation Is Associated with Aggressive Behavior in Chondrosarcoma of Bone. *Cancers (Basel)*. 2021 Jul 29;13(15):3823. doi: 10.3390/cancers13153823. PMID: 34359724; PMCID: PMC8345166.

Kroonen JS, Vertegaal ACO. Targeting SUMO Signaling to Wrestle Cancer. *Trends Cancer*. 2021 Jun;7(6):496-510. doi: 10.1016/j.trecan.2020.11.009. Epub 2020 Dec 20. PMID: 33353838.

Kumar S, Schoonderwoerd MJA, **Kroonen JS**, de Graaf IJ, Sluijter M, Ruano D, González-Prieto R, Verlaan-de Vries M, Rip J, Arens R, de Miranda NFCC, Hawinkels LJAC, van Hall T, Vertegaal ACO. Targeting pancreatic cancer by TAK-981: a SUMOylation inhibitor that activates the immune system and blocks cancer cell cycle progression in a preclinical model. *Gut*. 2022 Nov;71(11):2266-2283. doi: 10.1136/gutjnl-2021-324834. Epub 2022 Jan 24. PMID: 35074907; PMCID: PMC9554032.

Carbonetti G, Wilpshaar T, **Kroonen JS**, Studholme K, Converso C, d'Oelsnitz S, Kaczocha M. FABP5 coordinates lipid signaling that promotes prostate cancer metastasis. *Sci Rep.* 2019 Dec 12;9(1):18944. doi: 10.1038/s41598-019-55418-x. PMID: 31831821; PMCID: PMC6908725.

CURRICULUM VITAE

Jessie Simone Kroonen was born on 8th of December 1993 in Venray, the Netherlands. She graduated from her high school education at Metameer Stevensbeek in 2012. Jessie conducted her bachelor's and masters's education in Nutrition and Health at Wageningen University & Research (WUR, Wageningen). She obtained her bachelor's degree Nutrition & Health in 2015, followed by her master's degree specialized in Molecular Nutrition and Toxicology in 2017. Jessie developed a keen interest in the development and analysis of novel therapeutic strategies during her master thesis work in the group of prof. dr. Renger Witkamp, where she researched the anti-inflammatory properties of antidepressant herbs and molecules. For her masters internship Jessie joined the group of dr. Martin Kaczocha at Stonybrook University, New York, USA. Her internship research focused on the role of Fatty Acid Binding Proteins in prostate cancer aggressiveness. In October 2017, she started her scientific career at the department of Cell & Chemical Biology at the Leiden University Medical Centre in the Netherlands under guidance of prof. dr. Alfred Vertegaal. In her PhD research, she focused on the role of SUMOylation in cancer development and researched a novel SUMOylation inhibitor as a strategy for cancer therapy. In February 2023, Jessie joined the group of prof. dr. Madelon Maurice at the UMC Utrecht the Netherlands as a post-doctoral researcher on the project of the start-up company Laigo Bio, to repurpose membrane E3 ligases for targeted protein degradation. She continues to translate fundamental science for clinical advances.

DANKWOORD

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