Department of Biology

universität ulm

Biological Colloquium

Lung Cancer: Beyond Inflammation

Lung cancer is strongly associated with chronic inflammation, particularly in the context of smoking-related exposure. Our work identifies the anti-inflammatory protein A20 as a key regulator in this setting. In KRAS-driven lung cancer cells, A20 functions as a tumor suppressor, limiting oncogenic signaling and tumor progression. Conversely, in the tumor microenvironment, A20 acts in immune cells to dampen antitumor immunity. Targeting A20 selectively in these immune populations enhances immune-mediated tumor control. These dual roles position A20 as both a biomarker and a therapeutic target, offering new avenues for immunomodulatory strategies in lung cancer treatment.

Dr. Herwig Moll
1.07.2025
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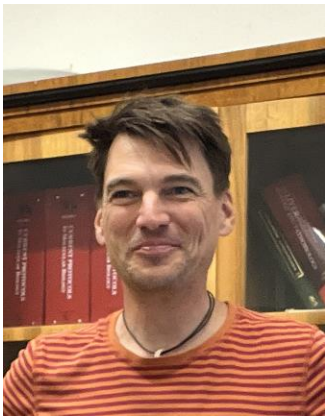

My scientific career has been centered on the imbalance of inflammatory homeostasis as a driver of disease. After earning my PhD from the University of Natural Resources and Life Sciences, Vienna, I deepened my expertise in inflammatory signaling during my postdoctoral training at Harvard Medical School in the laboratory of Dr. Christiane Ferran. There, I studied the anti-inflammatory protein A20, a key negative regulator of NF-κB signaling, in the context of vascular inflammation and arteriosclerotic lesions. This work provided me with a strong foundation in murine disease models and microsurgical techniques, including cardiac transplantation.

Upon returning to Vienna, I joined the Medical University of Vienna as an University Assistant, shifting my focus to lung cancer—a disease frequently linked to chronic inflammation from smoking. I investigated how persistent inflammatory stimuli contribute to tumorigenesis, concentrating on regulators such as A20 and the glucocorticoid receptor.

Now leading a junior research group, my work explores tumor–immune cell communication, with a particular interest in harnessing inflammatory signaling to improve immunotherapeutic strategies. My long-term goal is to uncover how the resolution of inflammation can be leveraged to enhance anti-cancer immunity.

Host: Prof. Dr. Jan Tuckermann – Institute of Comparative Molecular Endocrinology & Physiology