CENTER FOR CANCER RESEARCH
MEDICAL UNIVERSITY OF VIENNA

CCR Impromtu Seminar

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Decoding neuroendocrine cancers: insights into initiation, progression, and therapeutic vulnerabilities from human organoid models

Despite accounting for only 0.5% of the lung epithelium, pulmonary neuroendocrine (NE) cells give rise to a cancer type that accounts for a significant percentage of lung cancers (20 to 25%), including highly aggressive NE carcinomas and pulmonary NE tumors (carcinoids). The diversity of clinical behaviors displayed by these vastly understudied malignancies – ranging from a slowly progressing disease to metastatic cancers with poor prognosis – presents a significant clinical challenge. The lack of effective therapies available to most patients with NE cancers highlights fundamental gaps in our understanding of how these cancers arise and progress.

To address this challenge, we developed organoid models to study human pulmonary NE cells across the spectrum of malignancy, from healthy cells to advanced NE carcinomas. These organoids include patient-derived tumor organoids (PDTOs) of NE cancer, and organoids with healthy human pulmonary NE cells and NE cell progenitors.

In the Dayton lab, we use these organoid models to identify therapeutic sensitivities and growth-factor dependencies in NE cancers. We also aim to use NE organoid models to investigate mechanisms of tumor initiation and progression in NE cancers.

Through our studies, we hope to gain a better understanding of how the processes underlying the formation of pulmonary NE cells and NE cancer intersect and can be manipulated for patient benefit. We hope to identify new opportunities for the development of more effective therapies for patients with NE cancers.

Venue: Lecture Hall B2, Bt31.1, Borschkegasse 4a

Time: March 24, 2023, 10.00

Host: Juliane Winkler