LS23-006 - LymphoidStructureMiner: AI-based exploration of the immunological contexture of lymphoid structures in translational research

Zusammenfassung

The human immune system protects the body against pathogens. The immune system is multifaceted and consists of a multitude of organs, structures, and cell types. Among them are lymphoid structures (LS) that are highly organized cellular units of immunity. LS are furthermore important in the body's fight against cancer. Central technology for patient-orientated analysis of LS is tissue image cytometry, which allows to perform automatic computer-based analysis in tissue sample. However, due to the complex architectural features of LS, multiple not-yet-solved challenges exist. We aim to develop novel artificial intelligence (AI)-based algorithms to detect LS on digital microscopic images and to enable accurate and robust analysis of their cellular composition. Powered by AI, the herein developed LymphoidStructureMiner will represent an invaluable tool for basic and translational research including biomarker assessment and patient stratification in immuno-oncology and beyond.

Wissenschaftliche Disziplinen:
Molecular pathology (40%) | Immunology (20%) | Artificial intelligence (40%)

Keywords:
Computational pathology, Medical image analysis, Machine learning Deep learning, Artificial intelligence, Tissue image cytometry, Lymphoid structures, TLS, Immuno-oncology, Cancer, Personalized medicine

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Weiterführende Links zu den beteiligten Personen und zum Projekt finden Sie unter
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