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CBmed
is an internationally
recognized biomarker research
center with a focus on cancer,
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www.cbmed.at

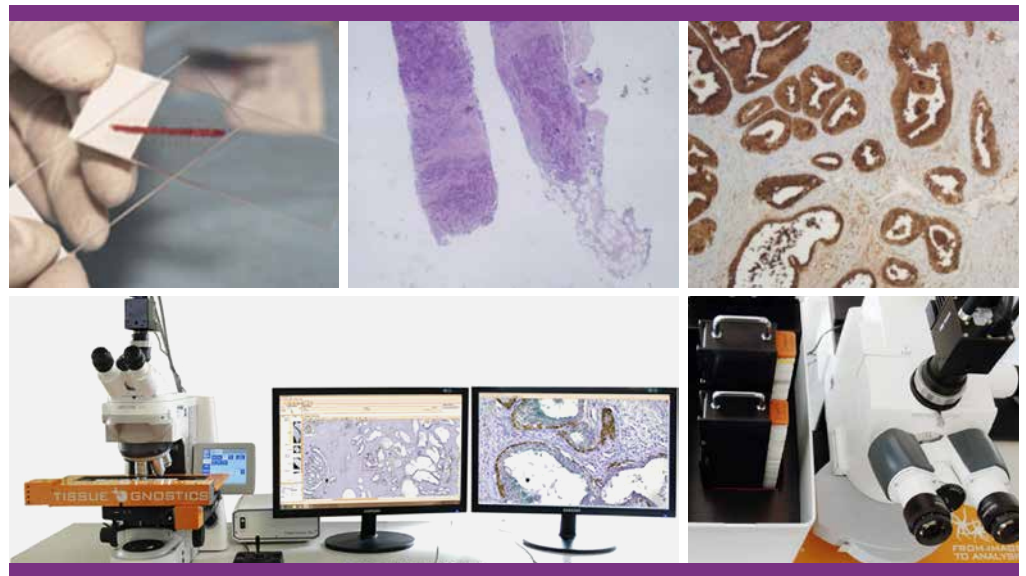
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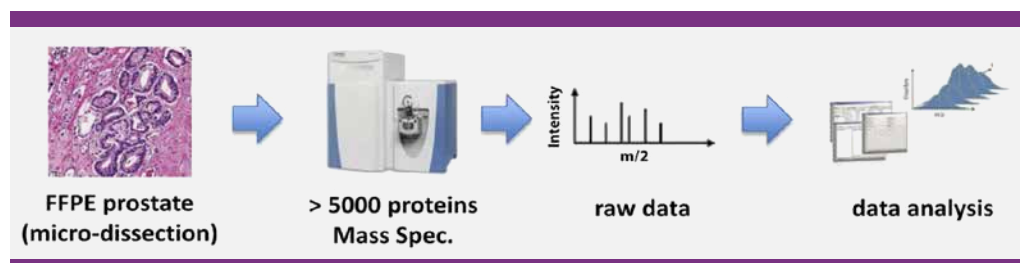


Proteomics & In-Vivo Imaging



We aim to bridge proteomics in molecular pathology with functional in-vivo imaging techniques to define novel targets and obtain novel biomarkers dependent on the respective tumor entity for clinical application. Therefore, a complete and integrated workflow from target identification to probe development and correlation of in-vivo location with histopathological analysis is implemented. Tumor biomarkers are investigated by whole proteome platforms for development of imaging probes that visualize the individual tumor situation.

We are open to any input from academic and industry partners looking for the definition of novel targets or stratification of existing ones for novel fields of application as well as using these pre-defined molecular targets to develop high-end functional imaging applications using probes for positron emission tomography (PET) or single photon emission tomography (SPECT).



Our Resources

- Qualitative tumor analysis by IHC on FFPE tissue
- Microscopy-based tissue cytometry and definition of regions of interest (ROIs)
- TissueFAXSORT-guided micro-digestion of tumor areas
- Mass spectrometry-based proteomics
- Multicolor IF
- High throughput IHC
- Laser capture microdissection
- Probe development for PET and/or SPECT
- Radionuclide preparation (e.g. medical cyclotron, generators)
- Radiochemistry (including automation)
- Radiopharmaceutical quality control
- Preclinical in-vitro testing (e.g. autoradiography, binding assays, metabolite analysis)
- Small animal imaging (e.g. μ PET/SPECT/CT)
- Quantification and post-processing
- Correlation with tumor pathology

Our Expertise

- **Biomarker discovery** through IHC-guided, mass spectrometry-based proteomics on huge archives of FFPE tissue
- **Preparation of radioactive probes** for specific targeting of molecular processes
- **Application** – open for any input of novel target testing/screening or stratification of known targets by above listed methods; in-vitro preclinics and in-vivo imaging
- **Studies** – strong research background in prostate and colorectal cancer (proteomics); several oncological and neuro-psychiatric targets (e.g. MCHR1; norepinephrine transporter) (in-vivo imaging)
- **Incorporation** of tissue samples / biomarker discovery from other CBmed labs.

Our Methods

We use formalin-fixed, paraffin-embedded (FFPE) tumor material from tumor specimens. After immunohistological staining, tumor areas are localized with a highly specialized software. Only these marked regions are isolated from the histological sections by microdissection and lysed to generate protein extracts. Tumor protein extracts are subjected to mass-spectrometric analysis to define the whole proteome. Detailed bioinformatic

analysis filters out tumor-specific protein expression profiles. Surface molecules that represent novel tumor markers are then confirmed.

Probe development and in-vivo imaging encompasses organic chemistry, radiochemistry, automation, binding studies, radio-metabolite analyses, autoradiography and μ PET/SPECT imaging.

Probe Development & In-Vivo Imaging



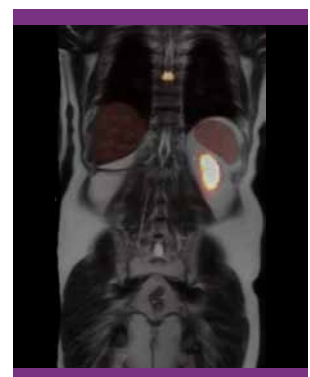
Medical cyclotron



Radiochemistry



μ PET/CT



PET/MR using ^{68}Ga -PSMA