Mosaiques Diagnostics: empowering proteome analysis and personalized precision medicine

Harald Mischak
Background

- **Proteins** are active key players in every organism that drive normal and pathological processes.

- **Proteins are responsible for disease-specific processes**, and can be targeted with drugs.

- **Proteome analysis enables** optimal diagnosis, prognosis, and selection of ideal therapeutic intervention.

- **Combinatorial Approach**: Rationale therapeutic targets, monitoring and stratification biomarkers and appropriate drugs, ultimately enable ideal and personalized patient management.
Early diagnosis improves outcome
Human proteome database

Clinical data, Patients history

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<td>Age</td>
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<td>Urinary albumin/creatinine</td>
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<td>Cholesterol (mmol/l)</td>
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<td>Creatinine (micromol/l)</td>
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Sequence information

Biomarker selection

Statistics

Urinary proteomics data

Tissue proteomics data

Database

Creatinine (micromol/l)

Cholesterol (mmol/l)

Urinary albumin/creatinine

Gender

Age

Clinical data, Patients history

Biomarker selection

Statistics
Noninvasive diagnosis of chronic kidney diseases using urinary proteome analysis

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Fields of Application (Sensitivity / Specificity)

- **Coronary artery disease**: 90% / 83%, 238 proteins
- **Cholangiocarcinoma** (urine + bile): 94% / 79%, 42 proteins
- **UPJ obstruction in neonates**: >90% / >90%, 19 proteins
- **GvHD after allo-HSCT**: 83% / 76%, 17 proteins
- **Prostate cancer**: 91% / 69%, 45 proteins
- **Chronic nephropathies/ Diabetic nephropathy**: >90% / >90%, 273 proteins
- **Bladder cancer**: >80% / >80%, 106 proteins
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• Proteome analysis is already in use in clinical trials and patient management, guiding personalized intervention

• Mosaiques Diagnostics is the worldwide leader in clinical proteomics, with several products in the market and a Letter of Support from the US-FDA

• Substantial support from the European Commission enabled development of the technology and applications
FP7 and H2020 Funding