

**CBmed GmbH**  
**Austrian COMET K1 Center for Biomarker Research**

Programme: COMET – Competence Centers for Excellent Technologies

Programme line: COMET-Zentren (K1) 3. Call, 2. Förderungsperiode

Type of project: 1.22 Multi-parameter Core Technologies/ multi-firm



## PESI MS

### JOINT DEVELOPMENT OF A NEW MASS SPECTROMETRY APPLICATION FOR CLINICAL REQUIREMENTS BETWEEN CBMED AND SHIMADZU CORPORATION

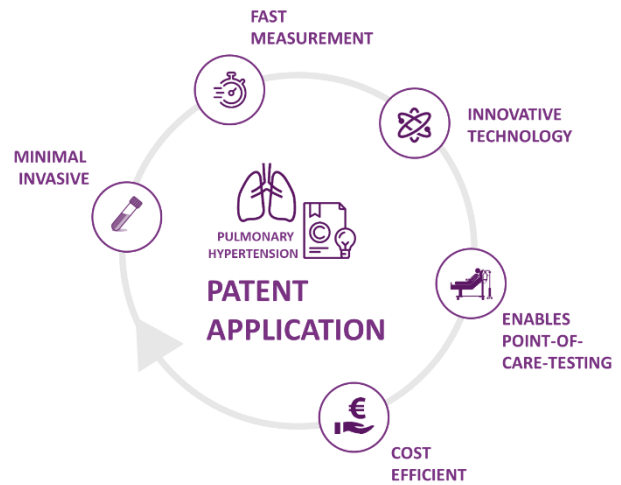
In a COMET-funded project running from 2015 to 2018, a biomarker for the diagnosis and monitoring of pulmonary hypertension (PH) was identified and patented under the leadership of the K1 Center CBmed, together with the scientific partners Ludwig Boltzmann Institute for Lung Vascular Research, Medical University Graz and Joanneum Research Forschungsgesellschaft. Pulmonary hypertension (PH) is characterized by elevated blood pressure in the pulmonary circulation and causes a significantly reduced survival rate of 53.6% after 5 years. The prevalence is 5-25 cases per million people, although the actual rate of the disease is probably underestimated. An essential factor influencing survival is the early and adequate diagnosis of the disease. In particular, the broad and unspecific clinical symptoms, for example shortness of breath, syncope, tiredness and chest pain, represents a major challenge in clinical practice. An incomplete, delayed or inadequate diagnosis is therefore common and occurs in up to 85% of all patients at risk. The current gold standard, the measurement of pulmonary arterial pressure using a cardiac catheter, is extremely invasive, costly and carries an elevated risk of

mortality. Up to date there are no alternative, specific and less invasive methods for diagnosis and monitoring of PH available.

Based on a successful cooperation with the Asian company Shimadzu Corporation (headquarter in Kyoto, Japan) in the field of clinical application of a novel technology from the field of mass spectrometry (Probe Electrospray Ionization; PESI-MS), a joint project to test the innovative application of the patented PH biomarker as a new diagnostic application was started in 2019. Due to its suitability

## SUCCESS STORY

for minimally invasive screening from blood samples as well as for therapy control of patients already ill, such an innovative platform could be used for point-of-care measurement in health care facilities, outpatient clinics, primary health care centers, as well as private practices. The new measuring method, Probe Electrospray Ionization, is a cost-efficient and fast measuring method. Shimadzu has provided access to the latest technology, equipment, software and know-how for CBmed as one of a few European centers. The results of the cooperation between CBmed and Shimadzu have been successfully presented at several international congresses and met with great interest (Shimadzu Global Summit 2019 in Japan, 4th PESI-MS Meeting 2019 in Japan and European Biobank Week 2019 in Germany).



Currently, a larger clinical trial is being planned together with the partners Shimadzu Europe and Shimadzu Corporation Japan to validate the results obtained.

### CBmed GmbH

Stiftingtalstraße 5  
8010 Graz  
T +43 (0) 316 385 28801  
office@cbmed.at  
[www.cbmed.at](http://www.cbmed.at)

### Project partner

- Shimadzu Corporation, Japan
- Shimadzu Europe

This success story was provided by the CBmed GmbH and by the mentioned project partners for the purpose of being published on the FFG website. CBmed GmbH is a COMET Centre / Project 1.22 within the COMET – Competence Centers for Excellent Technologies Programme and funded by BMK, BMDW, Steirische Wirtschaftsförderungs GmbH (SFG) and Wirtschaftsagentur Wien (WAW). The COMET Programme is managed by FFG. Further information on COMET: [www.ffg.at/comet](http://www.ffg.at/comet)