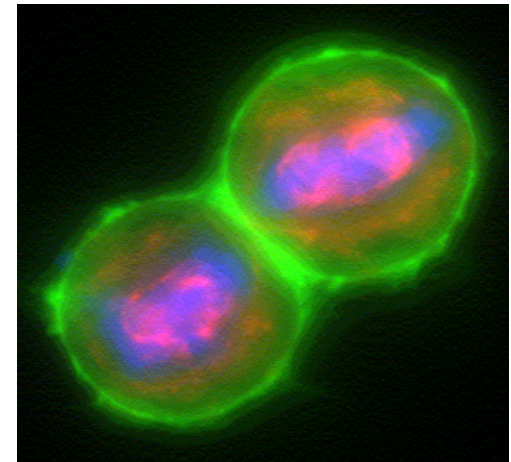

The Fraunhofer-Institute for Marine Biotechnology

unique opportunities for transcontinental partnerships

Johannes Boltze, MD, PhD

Cost Action “BIONECA” meeting

March 6th, 2018



The Fraunhofer Mission



- Europe's largest society for applied and translational research (non-profit)
- conducting excellent research for the benefit of the society
- bringing ideas to application, supporting industry partners
- ideal “triple mix” of **basic** and **applied** research plus **industry** collaboration



Fraunhofer-Institute for Marine Biotechnology (EMB)

Facts and figures (December 2017):

- founded in 2010; youngest life science branch member
- 100 employees in 4 departments (8 groups)
- focus: medical and marine biotechnology
- development of therapeutics, clinical translation
- marine resources for health and nutrition



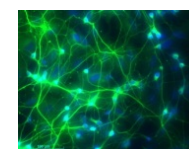
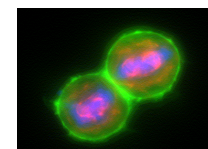
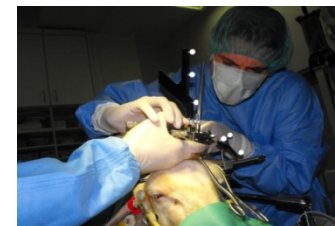
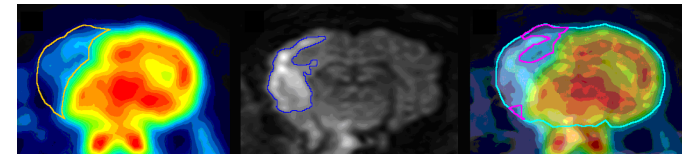
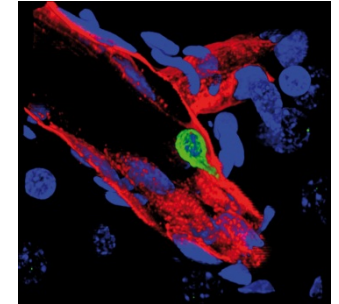
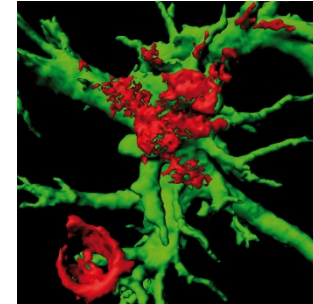
The Department of Translational Medicine & Cell Technology

Research areas:

- (stem) cell technologies and therapies
- neurovascular diseases (stroke, cSVD)
- role of age and comorbidities
- simulation of clinical applications including

Research tools and expertise:

- multimodal cell analysis, immunophenotyping
- cell culture and cell differentiation
- small and large animal models
- stereotaxic surgery, hybrid PET-MR imaging
- behavioral tests, imaging, histology, and more

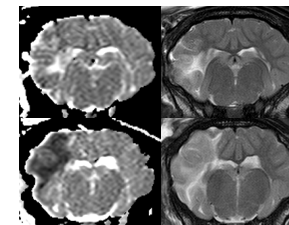
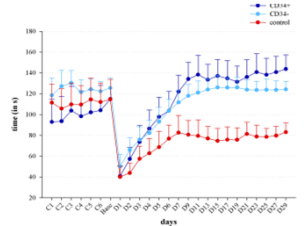
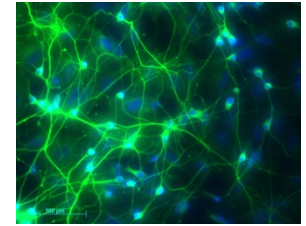
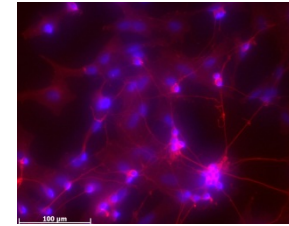


Research strategy

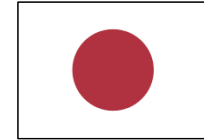
experimental options

- **neur(on)al ischemia in vitro**
identification of neuroprotective effects, drug-stem cell interactions, mechanistic investigations
- **rodent stroke models**
cell transplantation, MRI, behavioral phenotyping, immunology, histology,
- **ovine stroke model**
long term investigations, stereotaxic surgery and hybrid PET-MR imaging

➔ ,close to clinic' therapy assessment;
testing of diagnostic devices



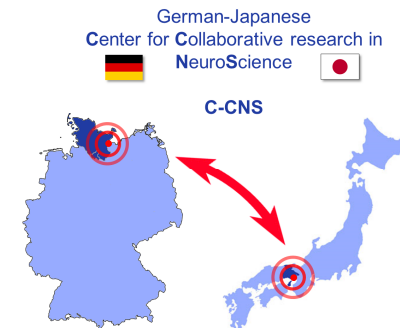
International activities and networks



- German Japanese **C**enter for **C**ollaborative research in **N**euro**S**cience (C-CNS)
- Local partner: Akihiko Taguchi, MD, PhD; start: 12/2017
- Topic: role of chronic inflammation in neurodegeneration, cellular therapies
- TRANSNEURO joint laboratory with MGH / Harvard Medical School
- Local partner: Cenk Ayata, MD, PhD; start: 04/2018
- Topic: maladaptive immune responses after cerebrovascular insults



Prof. Ayata



Prof. Taguchi



October 9-11, 2018

www.neurorepair-2018.de

450 international participants
basic and translational science

Selected 2018 key topics:

Stroke and vascular dementia

Brain hemorrhages

Cellular therapies

Biomaterials for regeneration

Brain imaging

Neuroinflammation

... and many more!



Thank you!

Contact information:

Fraunhofer EMB

Mönkhofer Weg 239a

D-23562 Lübeck, Germany

Phone: +49 (0) 451 / 384448-20

eMail: johannes.boltze@emb.fraunhofer.de

boltze.johannes@mgh.harvard.edu





Fraunhofer EMB: departments

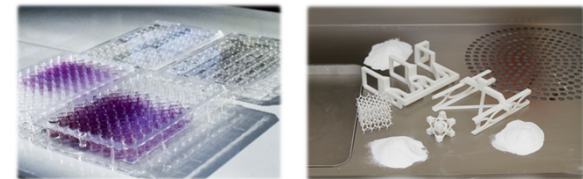
Marine Biotechnology

- Aquatic Cell Technology & Aquaculture
- Food Technology



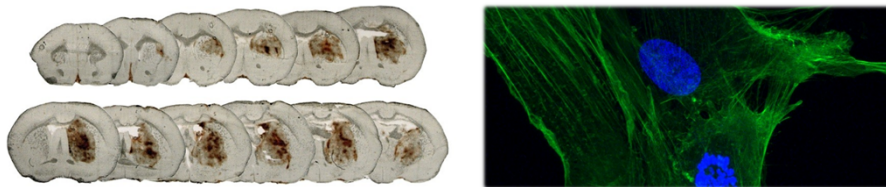
Prevention & Diagnostics

- Device Development
- Diagnostic Markers



Translational Medicine & Cell Technology

- Medical Cell Biology
- Central Nervous System Regeneration



Cellular Biotechnology

- Cell Differentiation
- Cell Technology

