



MULTI-MODALITY MEDICAL IMAGING SOLUTIONS

MEDISO LTD.

Bela Kari PhD.

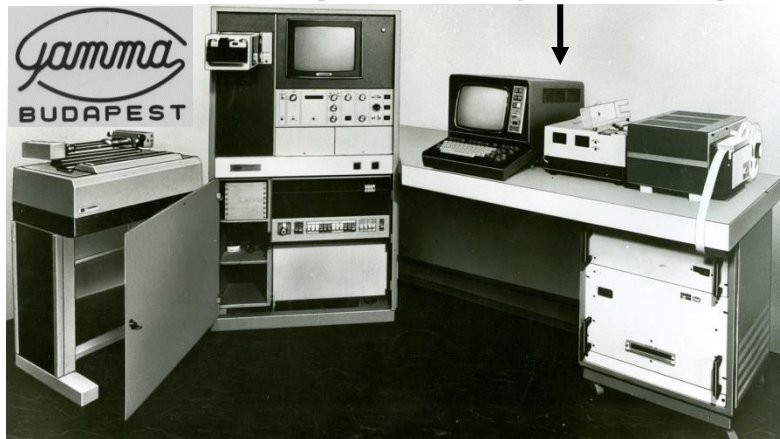
*Engineer-physicist, Research Associate
Head Of Translational Research Laboratory
Semmelweis University Faculty Of Medicine
Medical Imaging Centre*

*Department of Radiology and Department of Nuclear Medicine
Scientific Adviser of Mediso Ltd.*

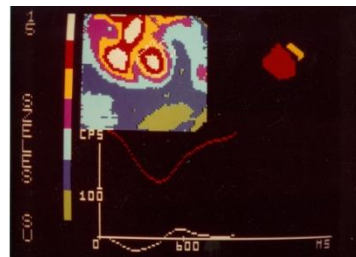
HISTORY

ROLE OF THE HUNGARIAN SCIENCE AND INDUSTRY IN THE FORMATION OF NUCLEAR MEDICINE

- 1920 Foundation of Gamma Works
- 1943 George Hevesy receives Nobel Prize for discovering the Hf element and working out the **theory of in vivo tracer technique**
- 1960 Gamma Works formed the nuclear equipment /including nuclear medical systems/ manufacturing profile
- 1972 Gamma Works first NM imaging system with digital data processing and colour presentation



Dr. Adam Billing, /hardware/
Gamma Works (1972)



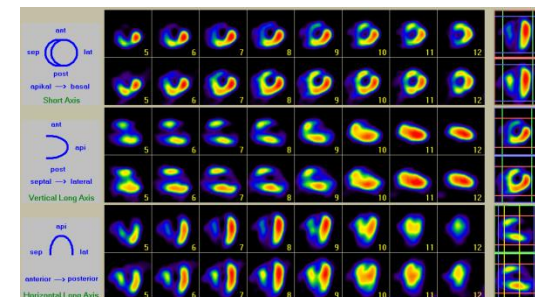
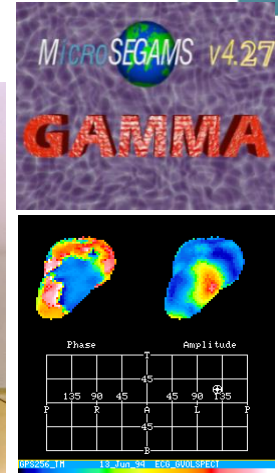
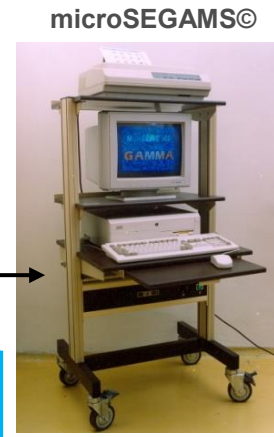
Prof. Laszlo Csernay, Dr.Arpad Makay,
Dr.Eors Mate, Dr. Janos Csirik /software/

HISTORY

ROLE OF THE HUNGARIAN SCIENCE AND INDUSTRY IN THE FORMATION OF NUCLEAR MEDICINE

- 1977 Started the development and production of the gamma cameras, by Gamma Works
- 1983 **The founder of MEDISO** joined to the Gamma Works
- 1989 First digital object oriented nuclear imaging system for analogue and digital cameras & SPECT

- 1990 Foundation of MEDISO
- 1994 Manufacturing of the first MEDISO gamma camera
- 1998 MEDISO acquired the Nuclear Medical division of Gamma Technical Corp. The dominant experts and employees of Gamma Technical Corp. joined to MEDISO Ltd.



INTRODUCTION OF MEDISO

MEDISO IS 100% PRIVATELY OWNED COMPANY

Main Activity: human-diagnostic and preclinical imaging system -

- Research
- Development
- Manufacturing
- Sales
- Services



Medical Service (ScanoMed)

**OITI,
Budapest**



Nuclear Medicine Centre Debrecen



MEDISO RECENT PRODUCT LINES

Recently MEDISO has the broadest range of molecular imaging devices

Nucline™ gamma camera family

- Planar line
- Universal line



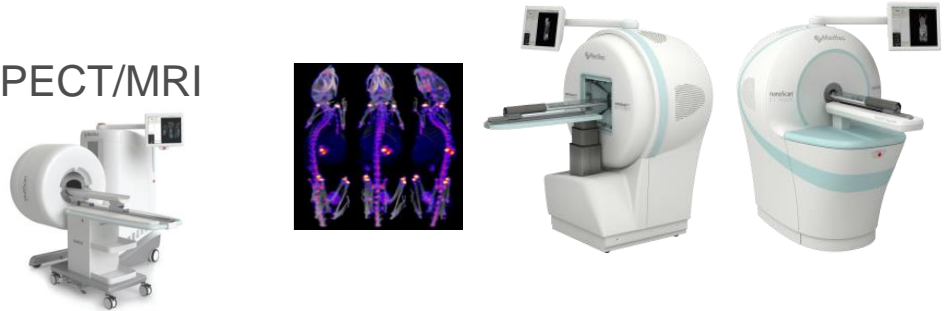
AnyScan® - Hybrid - molecular imaging system Human line

- AnyScan® SPECT/CT/PET
- AnyScan® SC SPECT/CT
- AnyScan® PC PET/CT
- AnyScan® TRIO SPECT/CT/(PET)



Preclinical line

- nanoScan® PRECLINICAL SPECT/CT, SPECT/MRI
- nanoScan® PRECLINICAL PET/CT
- nanoScan® PECLINICAL PET/MRI
- MultiScan LFER 150 PET/CT



OTHER PRODUCTS

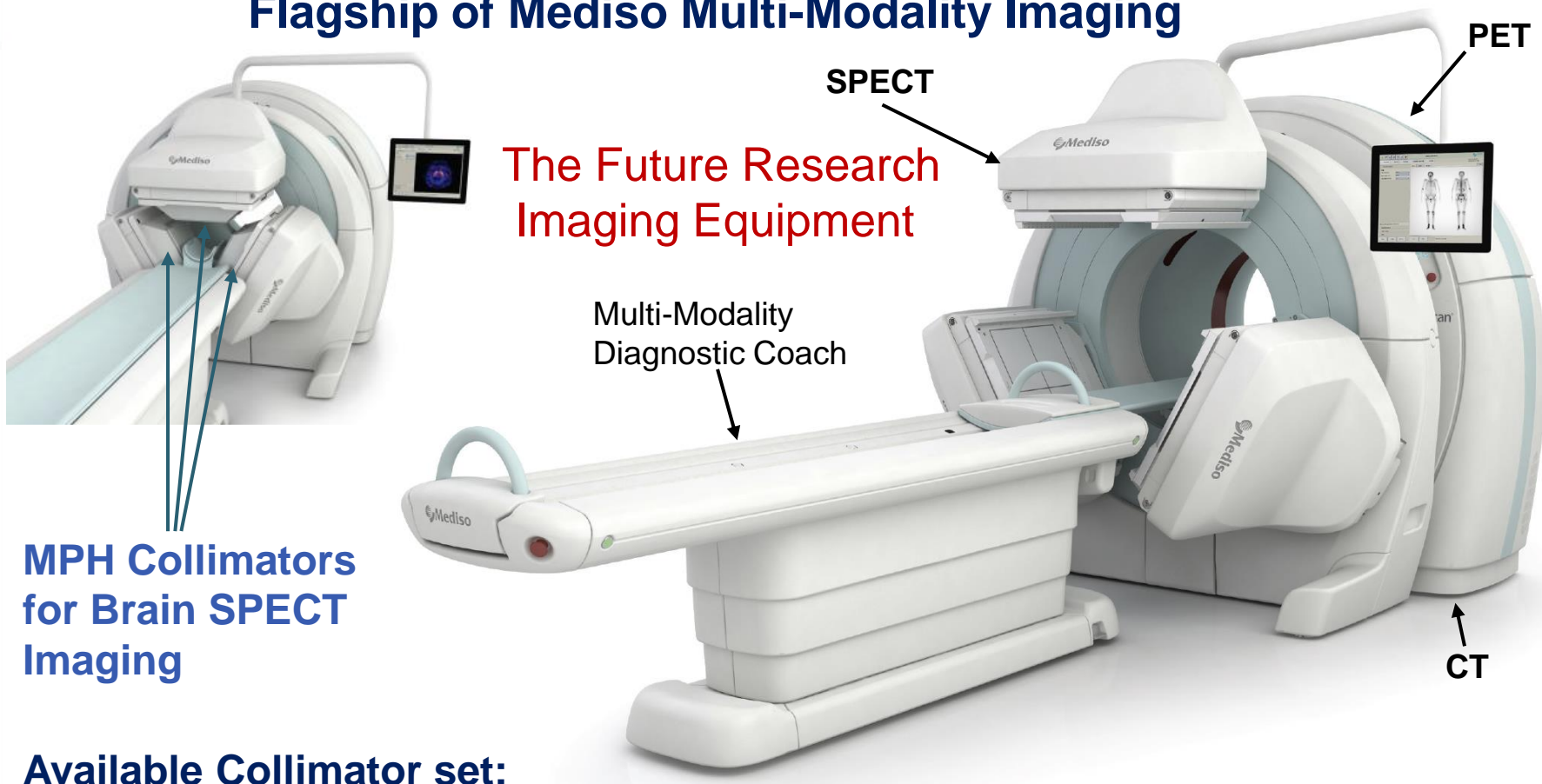
- Upgrade kits for equipment of other manufacturers
- Optional Clinical software Tools

- InterView™ FUSION multi-modality image processing tool
- InterView™ XP SPECT, WB, Planar post processing tool
- InterView™ Tera-Tomo™ advanced 3D reconstruction tool
- InterView™ CT Post processing software for CT
- Emory Cardiac Toolbox, Cedar Sinais, INVIA-4DM, Pmod

Hibrid Tripple-Head SPECT/PET/CT - Trio

AnyScan™ Trio Tripple Head Tripple Modality System Mediso Ltd.

Flagship of Mediso Multi-Modality Imaging



MPH Collimators
for Brain SPECT
Imaging

The Future Research
Imaging Equipment

Multi-Modality
Diagnostic Coach

Available Collimator set:

Parallel Imaging: LEUHR, LEHR, LEHRHS, LEGP, MEGP, HEGP

Multiplex-MultiPinHole (MPH) Imaging: - Organ oriented - Brain, Striatum, Heart -

- min. 5times improvement in sensitivity

- min. 3times improvement in resolution

- Stationary SPECT imaging solution (Heart)

Hibrid Tripple-Head **SPECT/CT/PET**, Trio-SCP

New Installation at Semmelweis University Medical Imaging Centre
Department of Nuclear Medicine (July 02. 2020)



Only for
Research

i.e.

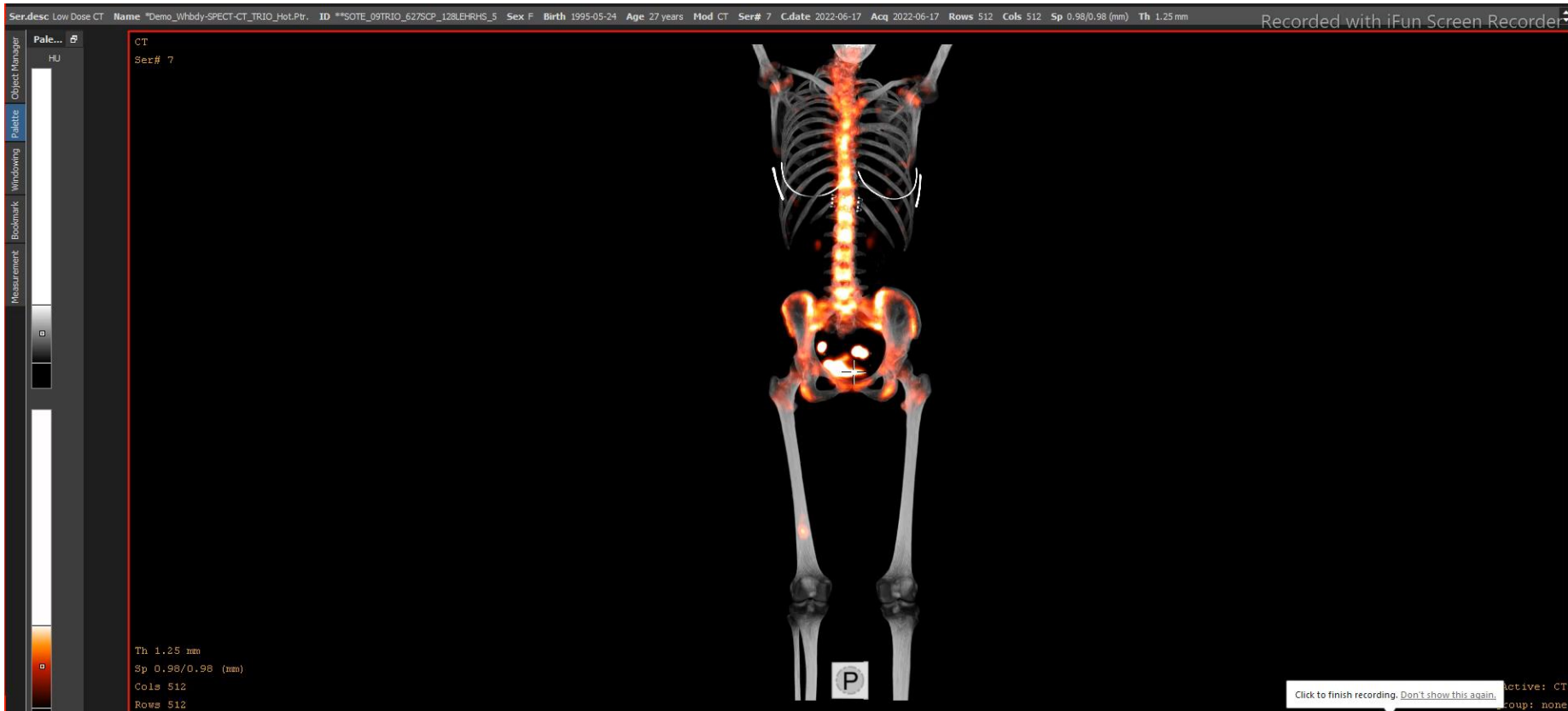
Translation
Research

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Fused Multi-Modality (SPECT/CT) Oncology -Bone Metastases-Test

Multi-Dimensional Presentation



Trio SPECT/CT: 3D Hoffman Brain Phantom Study

MPHB Collimator

*Demo 3D-Hoffmann Brain Phantom TRI_SCP-MPH-B Coll - InterView FUSION 3.08.008.0000 - Semmelweis University Faculty of Medicine

File Toolboxes Toolbars Settings Image Processing Report Help

CT+NM Ser# 4

group: none slice: 29/76

group: none slice: 30/76

group: none slice: 31/76

group: none slice: 32/76

group: none slice: 33/76

group: none slice: 34/76

group: none slice: 35/76

group: none slice: 36/76

group: none slice: 37/76

group: none slice: 38/76

group: none slice: 39/76

group: 10, 10, 10 slice: 40/76 Active: CT C:47 W:105

Max: 592.00 Min: -1000.00 High: 99.91 Low: -5.00 Width: 104.91 Center: 47.46 Percent

Th 2.50 Sp 0.98/0.98 Cols 512 Rows 512

Workspace 1

Multi-Modality Display: Matrix:256x256x167 Rec.Voxel S.:0.8984³mm³ Rec.: 3D MPH

Trio SPECT/CT: Human Tc^{99m}-HMPAO Brain Study

GEM-256 (Warm-Metal) Colour Scale

MPHB Collimator

IMAGING

*Demo-Tc99m-HMPAO_Brain-SPECT-CT_MPHB_Lpt.Sne - InterView FUSION 3.08.008.0000 - Semmelweis University Faculty of Medicine

File Toolboxes Toolbars Settings Image Processing Report Help

Ax Cor Sag

Ser.desc PinSPECT (HMPAO) (HD:40mm) Tera-Tomo MCM It:112 Sub:4 3D.Cum. (AC)_Registered Name *Demo-Tc99m-HMPAO_Brain-SPECT-CT_MPHB_Lpt.Sne ID **SOTE_06_MPHB1113_TRIO-848 Sex F Birth 5/19/1945 Age 76 years Mod CT+NM Ser# 9 C.date 7/14/2021 C.time 5:17 PM Acq 7/14/2021 10:27 AM Rows 128 Cols 128 Sp 1.80/1.80

Windowing
0.59 0.41
2: NM
10% 41% 100.0% 100.0%

Object Manager
Palette
Measurement
Bookmark
Windowing

CT+NM
Ser# 9

group: none slice: 36/76

group: none slice: 37/76

group: none slice: 38/76

group: none slice: 39/76

group: none slice: 40/76

group: none slice: 41/76

group: none slice: 42/76

group: none slice: 43/76

Th 1.80
Sp 1.80/1.80
Width: 83.92
Cols 128
Rows 128
group: none slice: 44/76

group: none slice: 45/76

group: none slice: 46/76

group: 10% slice: 47/76
Active: NM
L:14.93 H:98.85

Workpace 1

Multi-Modality Display: Matrix:128x128x106 Rec.Voxel S.:1.797³mm³ Rec.: 3D MPH



TeraTomo™ Q MCM AC

Multi-Modality Imaging Research Tools for Functional Biology and Pharmaceutical Research



nanoScan® SPECT/CT



nanoScan® PET/CT



nanoScan® PET/MRI

World Leading Technology

Preclinical Line – nanoScan® Family (2016)



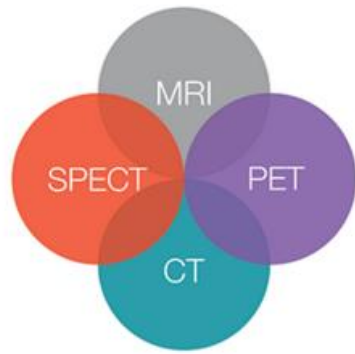
nanoScan® SPECT/MRI



nanoScan® PET/MRI



nanoScan® SPECT/CT



nanoScan® PET/MRI 3T



nanoScan® SPECT/CT/PET

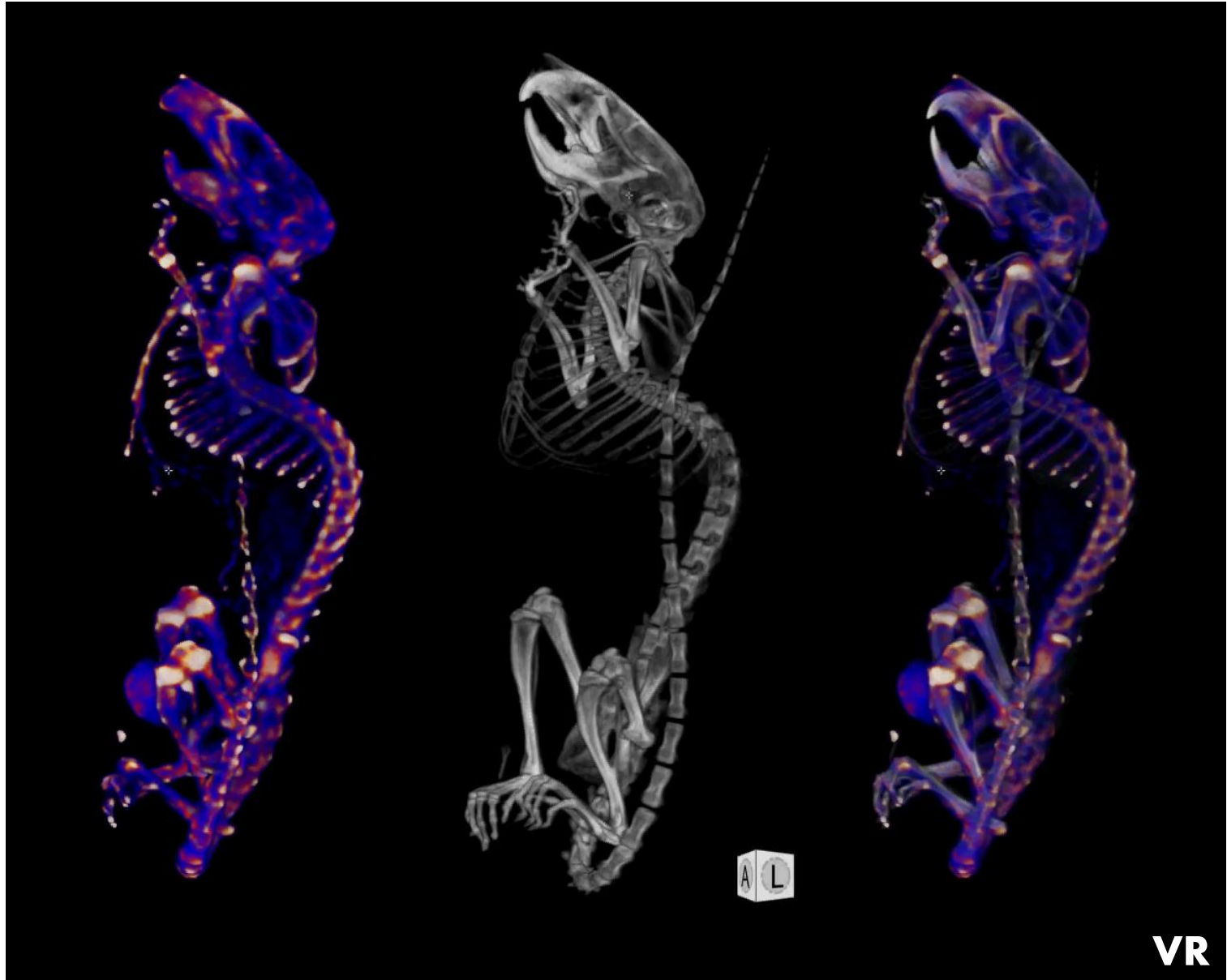


nanoScan® PET/CT

Mouse MDP Bone Scan

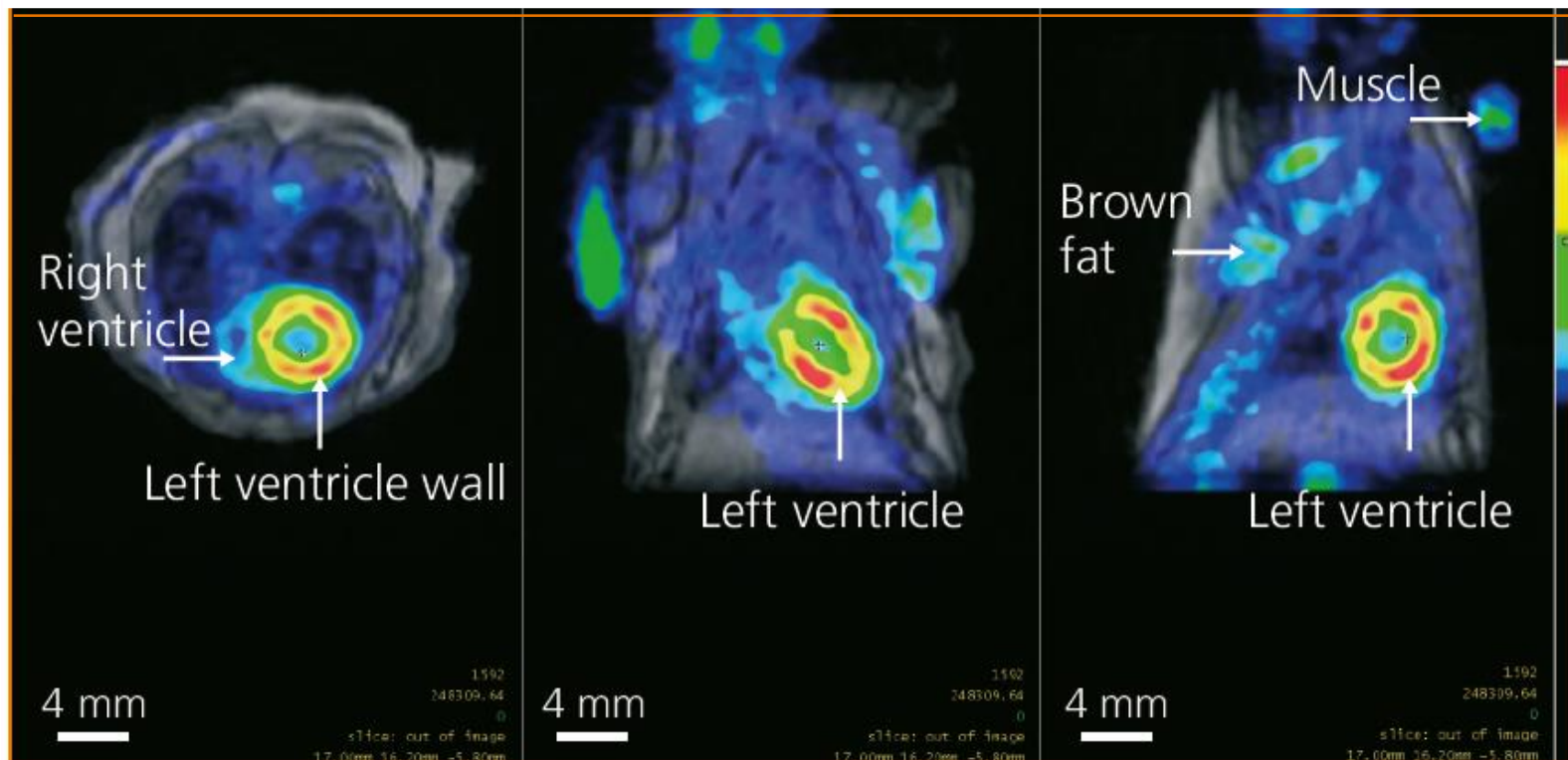
SPECT/CT

IMAGING FOR LIFE



VR

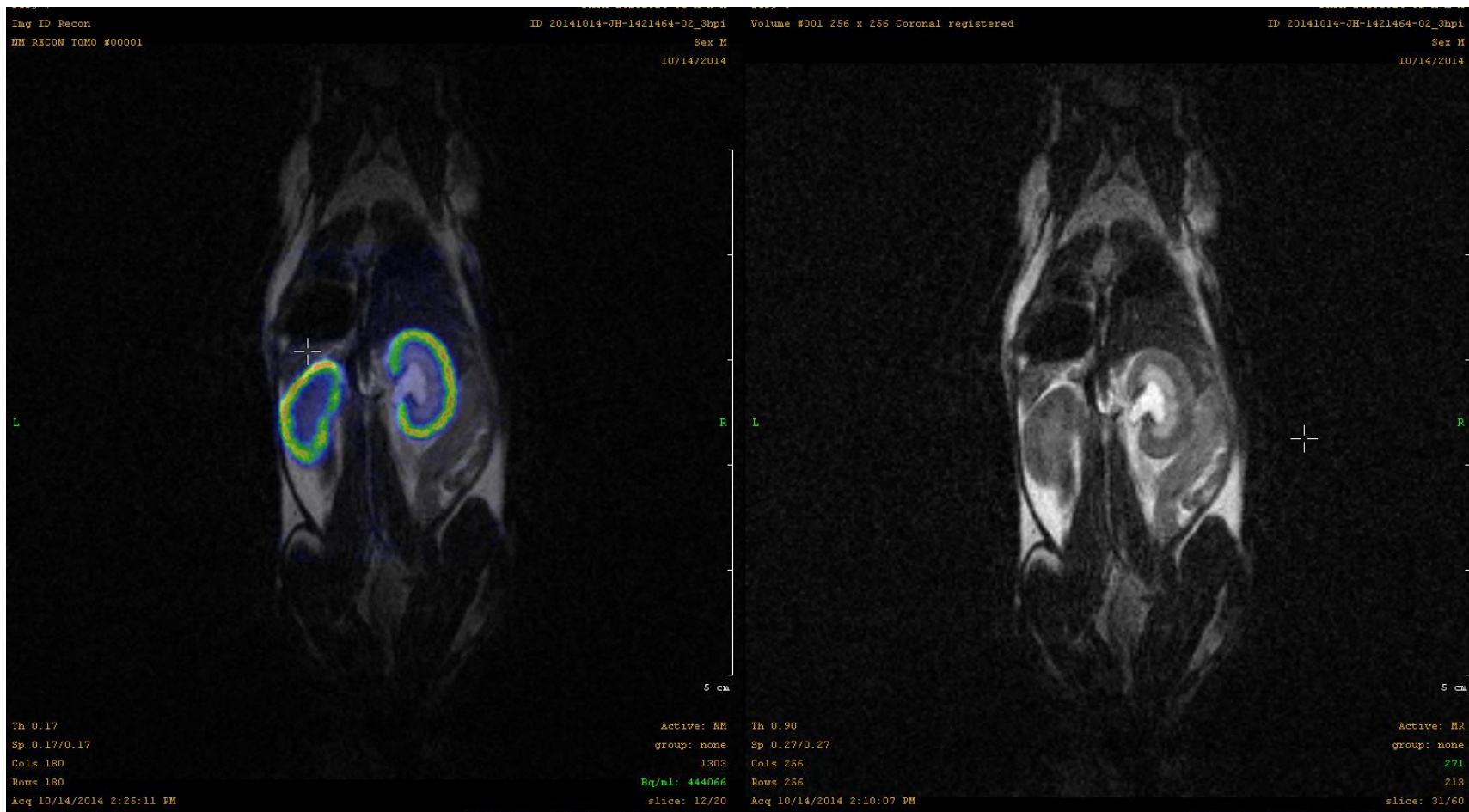
Imaging Heart Metabolism nanoScan® PET/MRI



Imaging heart metabolism with ^{18}F -FDG (8 MBq, 30 min PET, 23.5 min MRI) in a mouse

Image courtesy of Karolinska Institute

Integrated SPECT/MRI Kidney Scan



- T2 Weighted MRI
- 2D Fast Spin Echo MRI
- 7 minutes Scan Time
- 23 MBq ^{99m}Tc -DMSA
- 40 min Scan Time 4 h post injection
- Standard Mouse Aperture

MEDISO's most important Cooperation Partners



Technische
Universität
München



University College
London



King's College
London



Karolinska
Institutet



Semmelweis
University
Budapest



Budapest Technical
University

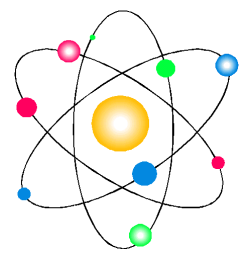


Debrecen
University

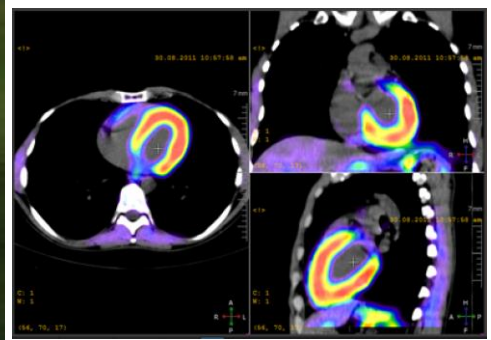


Pázmány Péter Catholic
University (Bionics
Pioneer MSc)

Multi-Modality Imaging Technology



Thank you very much your attention

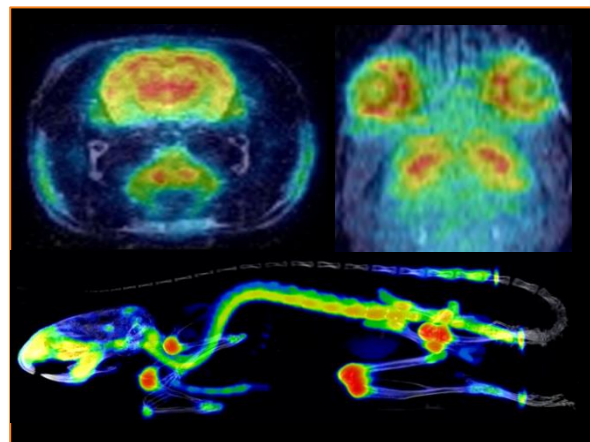
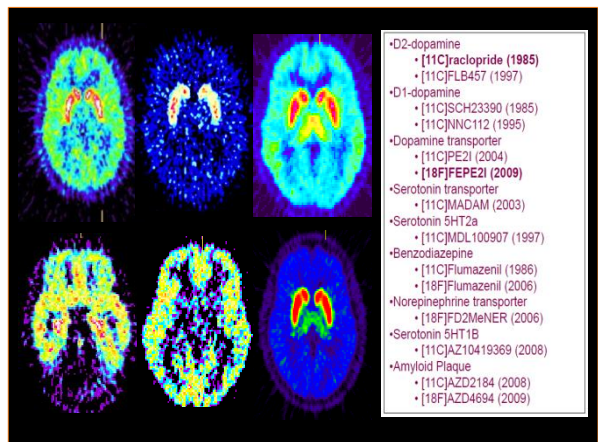


Existing Partnership: KI PET Centre at Karolinska Institute, Stockholm (2010)

Special Radiochemistry & High Resolution Based Translational Neuroscience



Christer Halldin
Director



Balázs Gulyás
Professor

MEDISO SERVICE AND SUPPORT

SERVICE NETWORK FOR MEDISO PRODUCTS

- Installation
- Application training
- Periodic check-ups
- Tele-diagnosis
- **Factory Trained Certified**
 - Field engineers
 - First line engineers
 - Collaborators
- Factory Service
- Subsidiaries
- Distributor's service
- Third party service

