

# nanoScan<sup>®</sup> PET/CT

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Real dynamic PET-system designed  
for quantitative studies





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|------------------------|---------------------|--------------------------|------------------------------|--------------------------|
| <b>Founded</b><br>1990 | <b>Offices</b><br>7 | <b>Employees</b><br>300+ | <b>Publications</b><br>3200+ | <b>Countries</b><br>100+ |
|------------------------|---------------------|--------------------------|------------------------------|--------------------------|



|                                    |                                  |
|------------------------------------|----------------------------------|
| <b>Preclinical systems</b><br>400+ | <b>Clinical systems</b><br>1500+ |
|------------------------------------|----------------------------------|

# About us

Mediso works in the field of medical imaging for 35 years with a profile of development, manufacturing, selling and servicing stand-alone and multi-modality imaging devices.

The company offers complete solutions from hardware design to evaluation and quantification software for clinical patient care and preclinical research.

Mediso has a leader position in the preclinical imaging market with over 400 commissioned systems around the world. Beyond the market leading nanoScan® PET/CT and SPECT/CT, Mediso also offers standalone MRI and integrated PET/MRI systems based on a cryogen-free magnet with 3T or 7T field strength and a PET insert for simultaneous PET/MRI imaging. Products are sold directly or through a distribution network in 100+ countries worldwide.

|                    |                                               |                                                                          |                                                             |                                                                                                 |                                                                                           |                                                                                         |                                                            |                                               |                                                                  |                                                     |                                        |
|--------------------|-----------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------|
| 1990               | 1994                                          | 1998                                                                     | 2006                                                        | 2009                                                                                            | 2014                                                                                      | 2016                                                                                    | 2018                                                       | 2019                                          | 2022                                                             | 2022                                                | 2023                                   |
| Mediso was founded | Introduction of the first Mediso gamma camera | Introduction of the Nucline™ X-Ring/4R, 4-detector dedicated brain SPECT | Launch of the first Mediso preclinical system, NanoSPECT/CT | Launch of preclinical nanoScan® PET/CT, world's first ever sub-mm resolution preclinical PET/CT | Introduction of MultiScan™ LFER 150 PET/CT, world's first sub-mm resolution mobile PET/CT | Introducing the nanoScan® PET/MRI 3T, world's first superconducting preclinical PET/MRI | Installation of the 100 <sup>th</sup> nanoScan® PET system | Introduction of nanoScan® PET/MRI with 7T MRI | Installation of the 300 <sup>th</sup> preclinical imaging system | Introduction of PET insert for nanoScan® PET/MRI 7T | Introduction of nanoScan® P123S PET/CT |



# Key features

## PET systems

Highest resolution:

**<0.7 mm**

Largest transaxial field of view

**12 cm**

Largest axial field of view

**15 cm**

for **total-body scanning**

Highest count rate performance

**1800 kcps @ 90 MBq / 2.43 mCi**

➤ **Multiple animal imaging**

➤ **Imaging of short half-life isotopes**

Best NEMA sensitivity

**10.5% (250–750 keV)**

Best Minimal Detectable Activity

**60 Bq / 1.6 nCi**

Largest installation base

**>150 systems**

### DESIGNED FOR DYNAMIC STUDIES

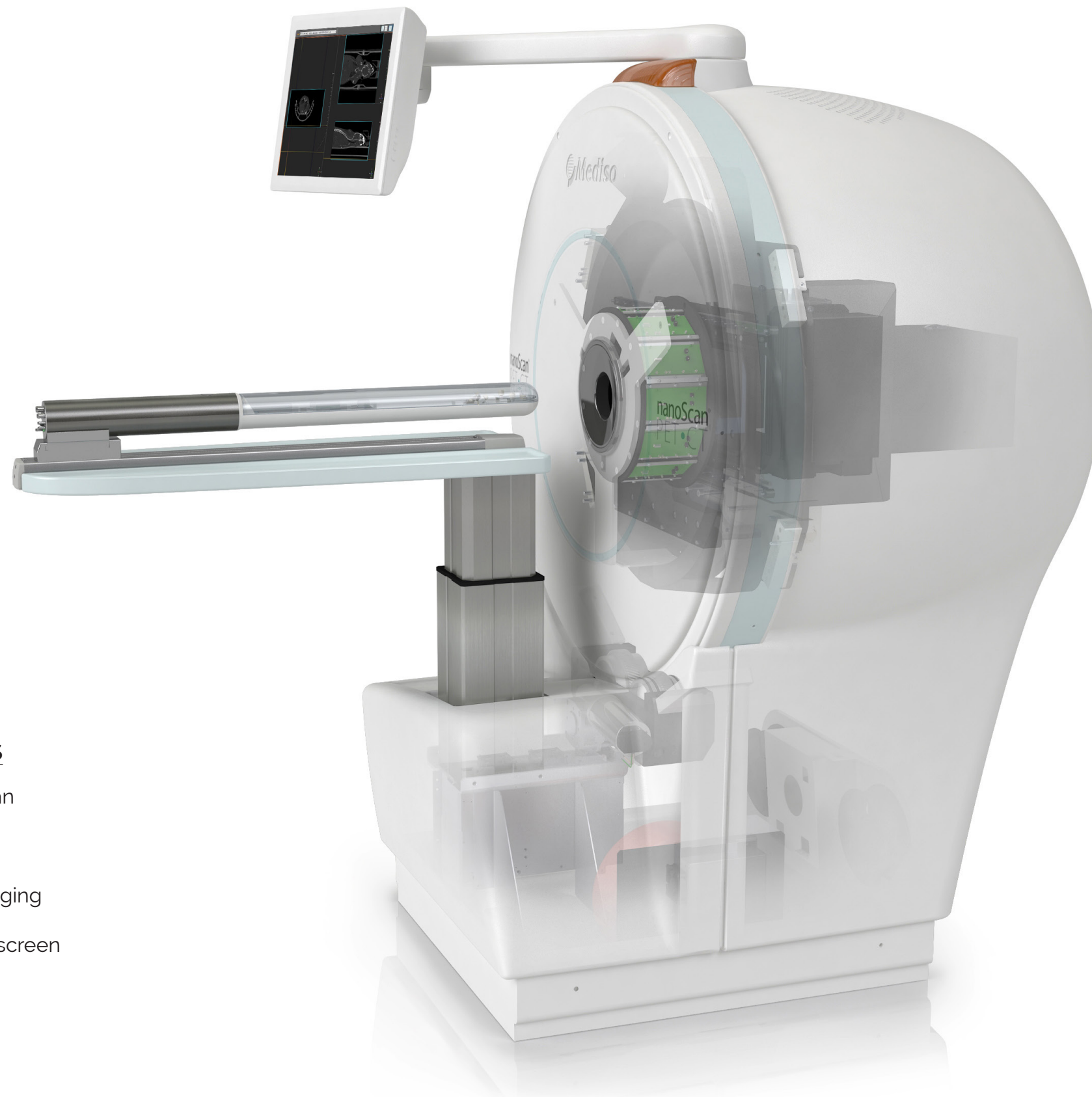
**Freely accessible animal** during the scan

Single FOV whole-body rat imaging

**Minimized dead space** for dynamic imaging

**Start dynamic acquisitions** from touch screen

Animal monitoring up to 4 animals



## CT system

High-resolution: **30  $\mu$ m**

with small voxel size: **10  $\mu$ m**

Up to  **$\times 7.6$  zoom**

Largest transaxial field of view:

**12 cm**

Highest power: **80 W** X-ray tube for

➤ **Large animals**

➤ **Better image quality**

➤ **Fast scanning**

➤ **Ex vivo samples**

Ultra-low dose protocol:

**<1 mGy** for whole-body mouse

**Real-time Feldkamp and  
iterative reconstruction**

Respiration and cardiac gated  
reconstruction

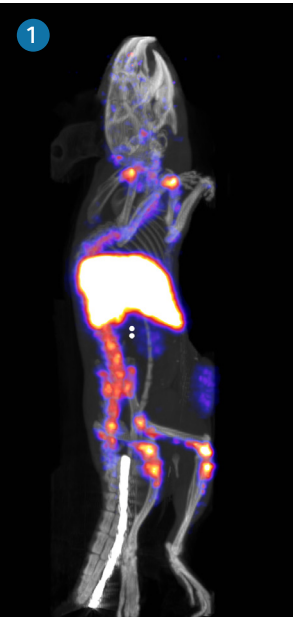
# Quantitative imaging for all applications

The nanoScan® PET subsystems are **capable of performing all PET-applications** at the highest level available on the market. Due to the ultra-fast electronics and finest crystal pixels in thick layers, the **widest dynamic range from 60 Bq to 90 MBq** is achieved. Combining this with the large axial and transaxial FOV of the PET ring, imaging of large or multiple animals simultaneously is possible.

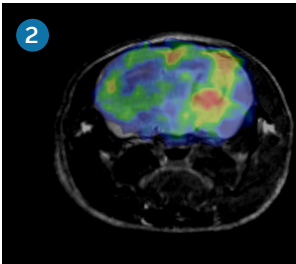
## UNCOMPROMISED APPLICATIONS WITH VERY LOW LEVEL OF RADIOACTIVITY

- Thick LSO crystals for **excellent sensitivity**
- Short (3 ns) coincidence time window** necessary for improved signal to noise ratio
- Advanced corrections (random, scatter, LSO background, etc.) ensuring **quantification at low activity levels**
- Best Minimal Detectable Activity:** 60 Bq (1.6 nCi)
- Dedicated feature** of the iterative Tera-Tomo™ 3D PET reconstruction engine ensures precise quantification at very low levels of activity
- Analytic reconstruction option (FBP)** with attenuation and scatter correction available for quantitative reconstruction of low activities close to regions with significantly higher activity
- Inherently **optimized for longitudinal studies** e.g. long-term cell tracking **1** and cardiac imaging **3**

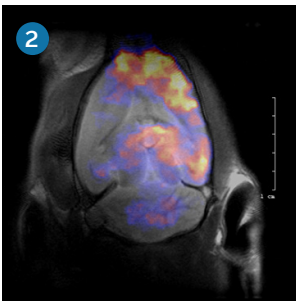
Cell tracking (<sup>89</sup>Zr)



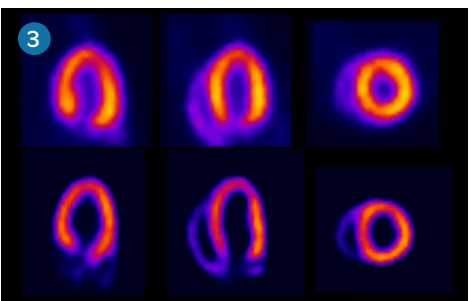
Glioma in mouse brain (FDG)



Stroke in rat brain (FDG)

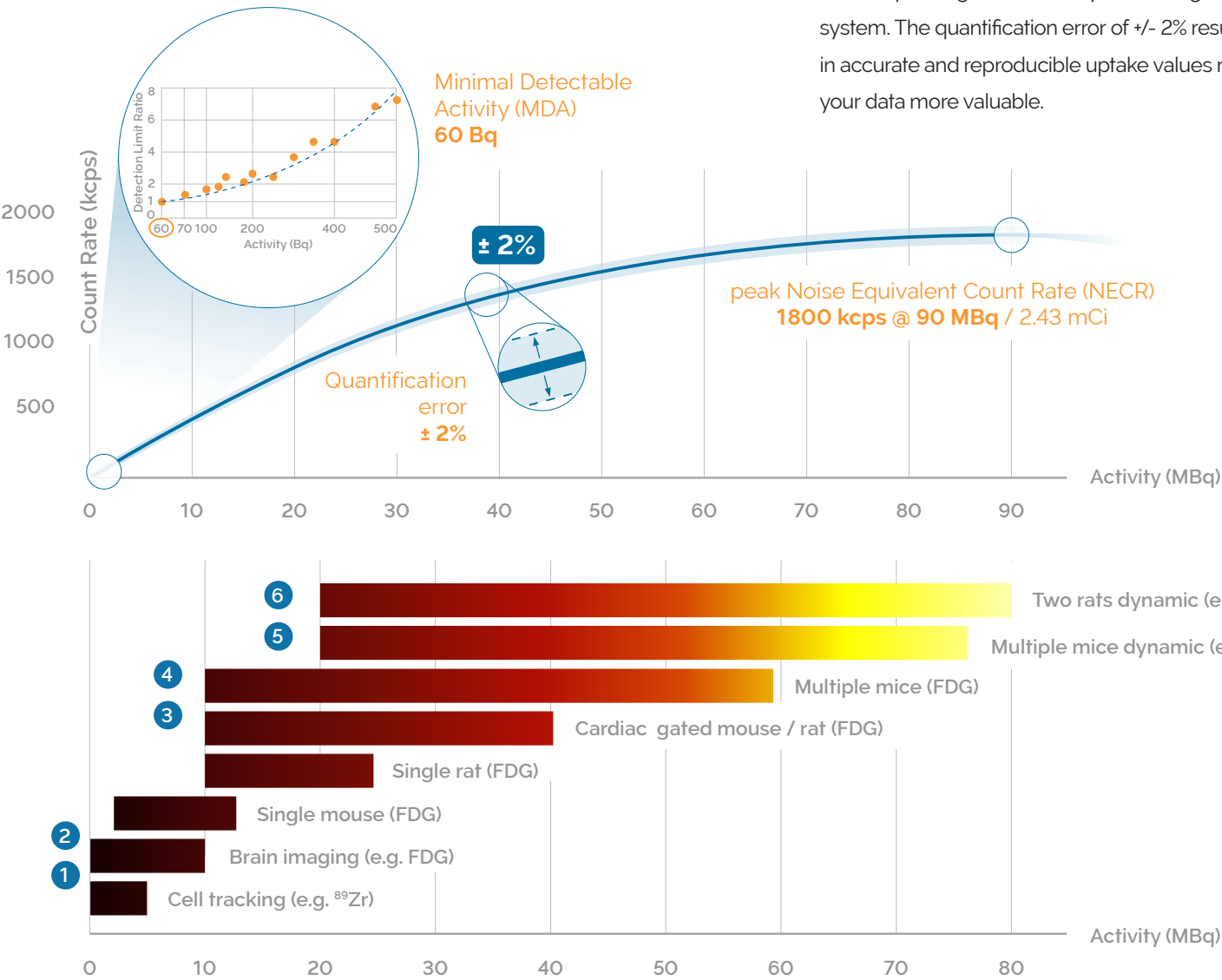


Gated myocardial perfusion

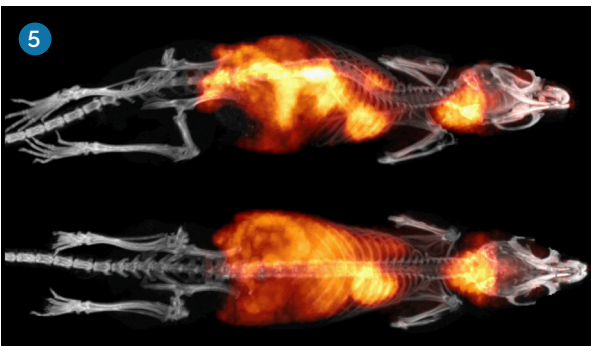


## QUANTIFICATION ACCURACY

- The Tera-Tomo™ 3D PET reconstruction engine along with the most advanced detector calibration algorithms ensure a very high level of quantification accuracy through the entire dynamic range of the system. The quantification error of +/- 2% results in accurate and reproducible uptake values making your data more valuable.



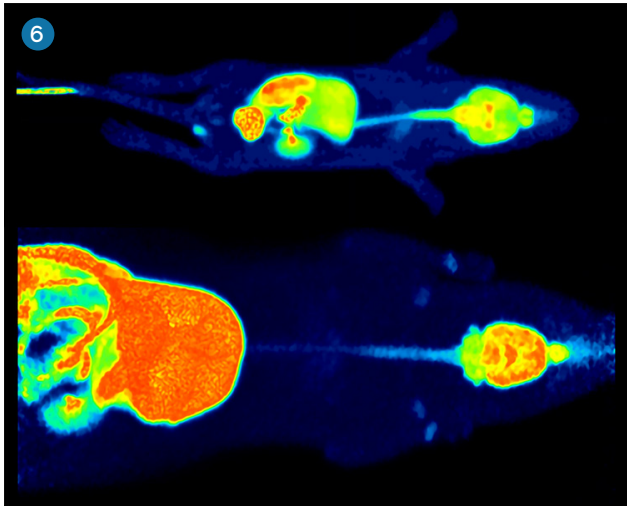
Two mice (<sup>11</sup>C-Choline)



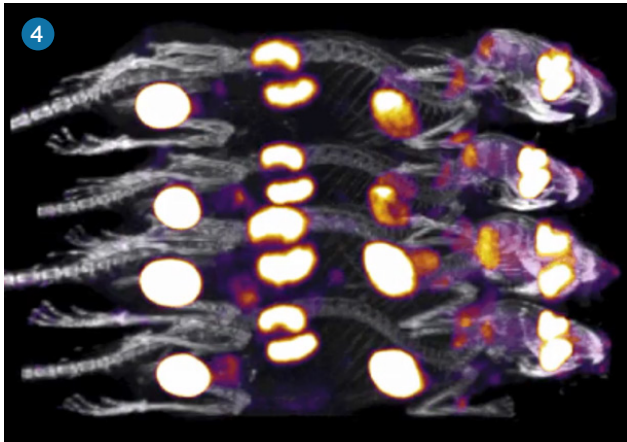
## COPING WITH COUNT RATE: MASTERING STUDIES WITH HIGH DOSE

- Multichannel read-out electronics, ultra-fast data processing and advanced dead-time correction
- Exceptional count rate performance** – peak Noise Equivalent Count Rate (NECR) for mouse is 1800 kcps @ 90 MBq
- Fully quantitative up to 90 MBq (2.43 mCi)** and beyond
- Suitable for **total-body rat 6** and mouse, as well as **dynamic imaging of up to 4 mice 4** or **2 rats simultaneously**
- Optimal for imaging of isotopes with **short half-life** (<sup>11</sup>C, <sup>13</sup>N, <sup>15</sup>O, etc.) **5**

Dynamic Total-body rat scans (<sup>18</sup>F-SynVesT-1), 2-weeks and 6-weeks old



Four mice (FDG)

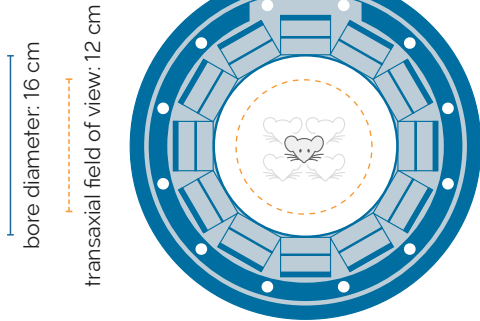


# Excellent image quality in the entire 12 cm TFOV

# High power CT with large FOV and high resolution

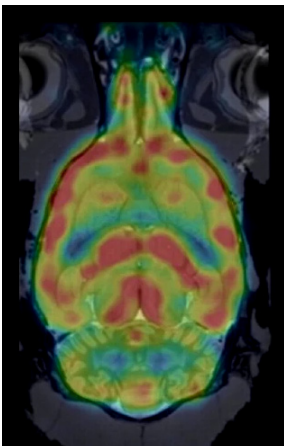
## Largest transaxial and longest axial field-of views

- Wide bore diameter of 16 cm allowing free access to the animals
- Large transaxial field of view of 12 cm
- Longest axial field of view of 15 cm
- Excellent homogeneity over the entire field of view
- Suitable for various animal models from tiny mouse (25 g) to large rabbits (6.5 kg)
- Simultaneous multiple animal imaging (up to 4 mice or 2 rats) with individual physiological monitoring



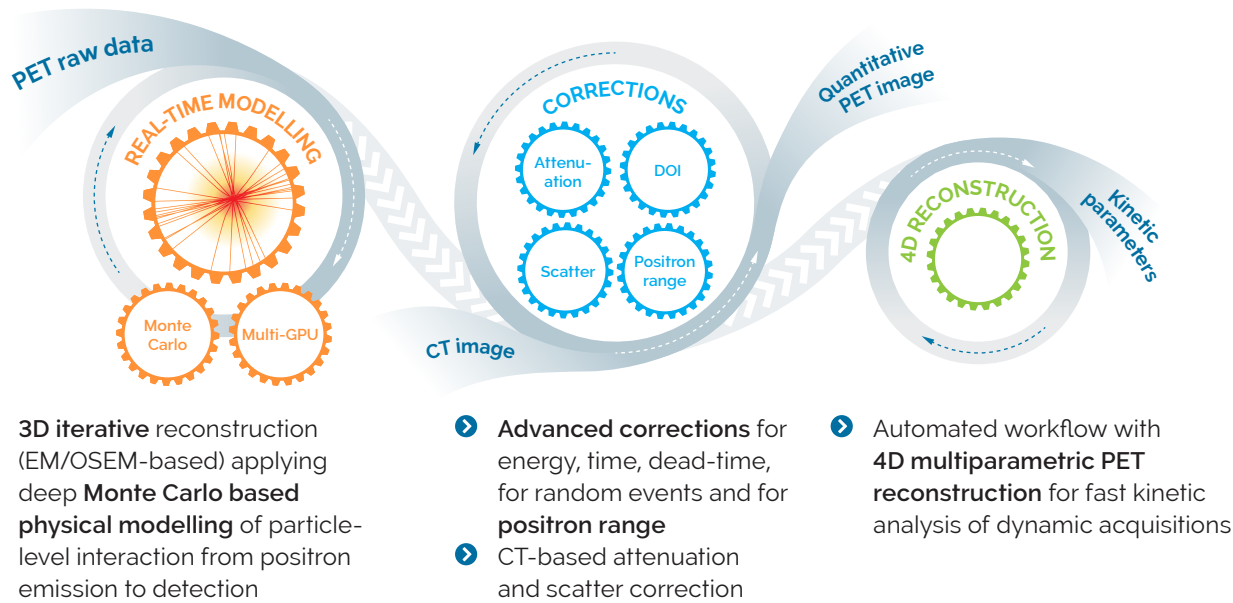
## Resolving precise details with 700 µm spatial resolution

- Finest (1.12 mm×1.12 mm) lutetium oxyorthosilicate (LSO) crystal needles provide precise signal localization preserving spatial information in raw data
- Tera-Tomo™ 3D PET iterative reconstruction with real-time Monte Carlo based physical modelling unveiling the tiniest details on the image
- Large ring diameter and statistical depth of interaction compensation offer homogeneous image quality over the entire field of view



## Tera-Tomo™ image reconstruction

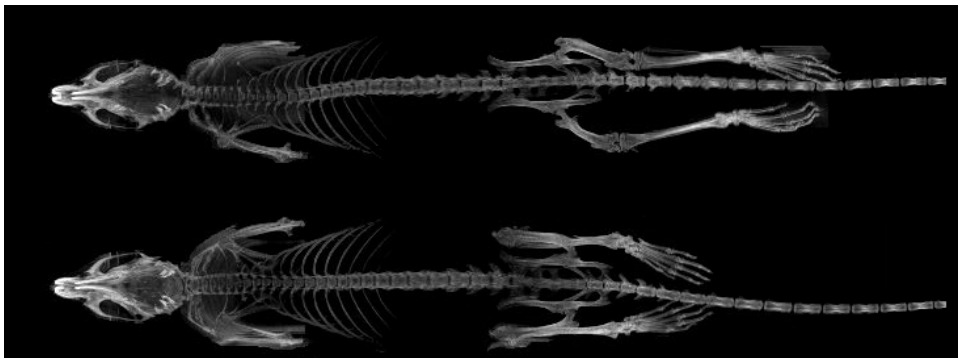
Our proprietary iterative reconstruction engine, used in both clinical and preclinical systems ensures quantitative results with excellent resolution for all PET isotopes.



The nanoScan CT system combines a powerful X-ray tube with variable geometrical magnification, therefore it covers all possible CT applications regardless whether they require high power, large field of view, or high spatial resolution.

The real time image reconstruction allows to minimize the study duration and to get the CT volume ready for attenuation and scatter correction of multimodality studies without additional waiting time. The possibility of scanning up to four animals simultaneously multiplies the throughput further. The system also covers wide range of standalone CT-applications from measuring bone mineral density in high resolution bone scans to

ECG and respiratory gated CT studies. The iterative image reconstruction offers excellent low contrast imaging, but also a key to reduce the dose to the animal below 1mGy per scan.



## Highest power with largest FOV

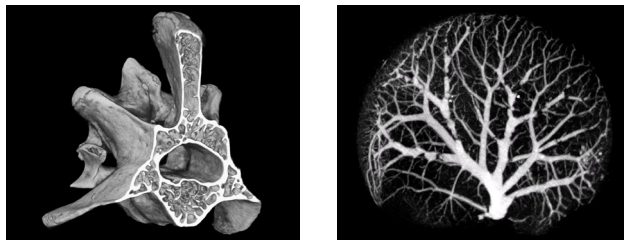
The high power (80 W) X-ray tube together with the largest field of view (12 cm transaxial and 45 cm helical scan range) enables high-performance scanning of large animals: large rats or rabbits up to the weight of 6.5 kg or multiple animals: four mice or two rats simultaneously. The highest photon flux also allows to reduce whole-body scan time without compromising the image quality.

## Lowest dose preclinical CT

The high-power tube is equipped with a thick aluminium filter absorbing low energy X-rays that would create unnecessary dose to the animal. Adding iterative image reconstruction the Ultra-low dose CT protocol enables whole-body mouse scans with <1mGy radiation dose. Therefore, there is no need to eliminate CT based attenuation and scatter correction for any PET or SPECT scan.

## High spatial resolution

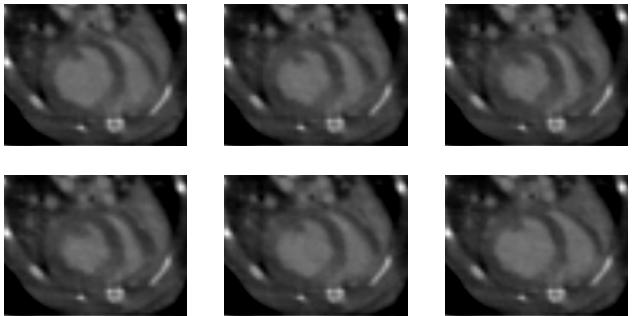
The system offers variable magnification (up to 7.6x) for high-resolution imaging even with 10 µm isotropic voxel size. Low noise and excellent image quality are also ensured by iterative image reconstruction.



Mouse vertebra and liver (10 µm and 20 µm voxel size)

## ECG and respiratory gating

Cardiac and respiratory gated CT studies are also available both for reducing motion artefacts and for analysis of cardiac and pulmonary function.

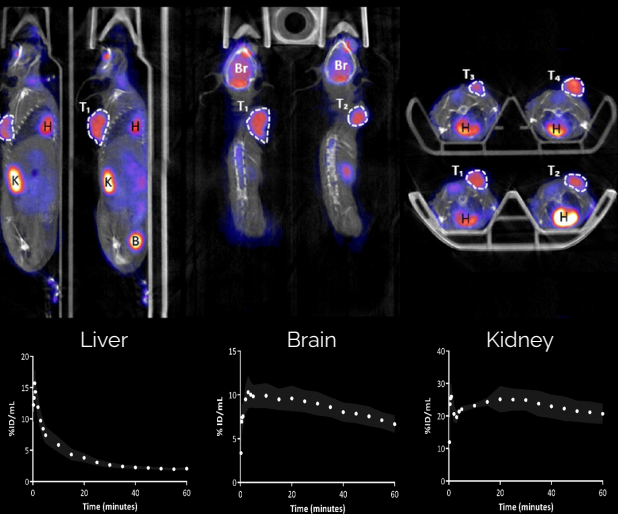


ECG gated mouse CT

# PET/CT Applications

## Simultaneous dynamic multiple animal imaging

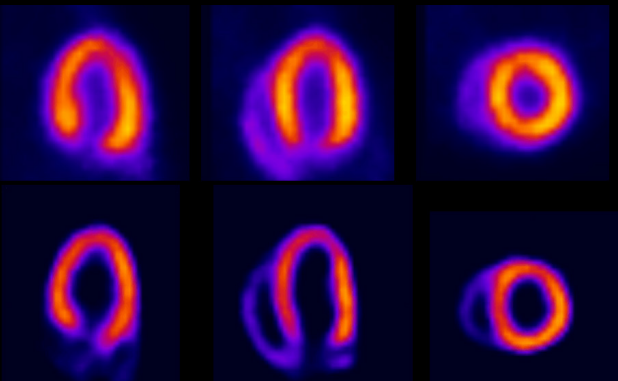
Simultaneous dynamic scan of 4 mice. Temperature control and physiological monitoring of all animals ensure quantitative readout of metabolic activity of organs.



ANIMAL: 4×20 g mice  
RADIOTRACER: 3.7 MBq (100 µCi) <sup>18</sup>F-FDG  
ACQUISITION: dynamic PET  
Greenwood et al JNM 2020, 61 (2) 292-297

## Cardiac gated mouse and rat imaging

High resolution and advanced reconstruction enables high-quality cardiac gated PET imaging, where even the right ventricle of the mouse is visible.

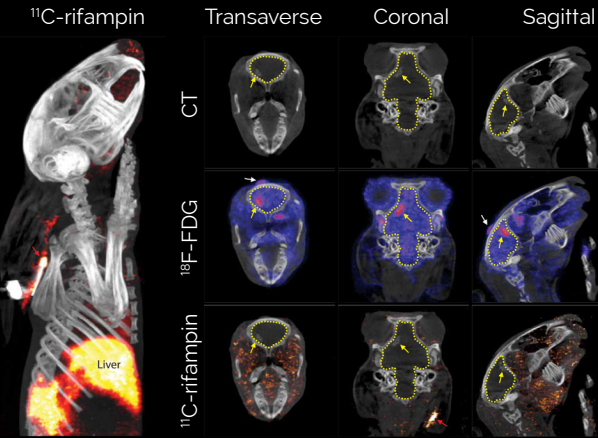


ANIMAL: 18 g mouse  
RADIOTRACER: 13.3 MBq (360 µCi) <sup>18</sup>F-FDG  
ACQUISITION: ECG-gated PET, 8 frames  
ACQUISITION TIME: 90 minutes

ANIMAL: 220 g rat  
RADIOTRACER: 30.8 MBq (830 µCi) <sup>18</sup>F-FDG  
ACQUISITION: ECG-gated PET, 8 frames  
ACQUISITION TIME: 60 minutes

## Tuberculosis imaging in rabbit with <sup>11</sup>C-rifampin

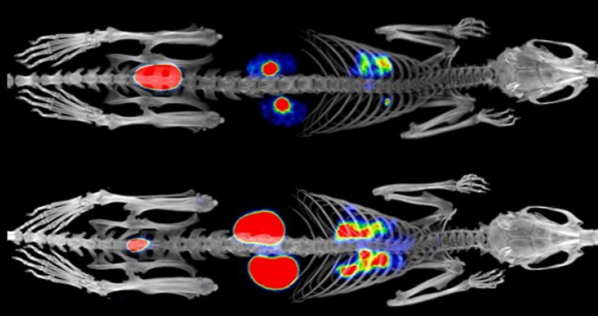
Dynamic and longitudinal <sup>11</sup>C-rifampin PET/CT imaging provided reliable data for optimized TBM treatments.



ANIMAL: New Zealand White rabbit  
RADIOTRACER: ~66 MBq (1.8 mCi) <sup>11</sup>C-rifampin, ~20 MBq (0.55 mCi) <sup>18</sup>F-FDG  
ACQUISITION: dynamic PET 30 min  
Tucker et al Sci. Transl. Med. 10, eaau0965 (2018)

## <sup>68</sup>Ga-Ornibactin for bacteria infection imaging

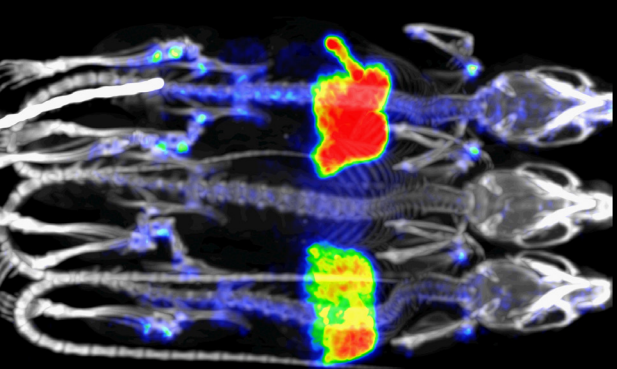
The system is able to handle the long positron range of <sup>68</sup>Ga and provide quantitative results showing, that <sup>68</sup>Ga-ORN complex accumulates at the site of Burkholderia multivorans infection, including pneumonia, in two animal infection models.



ANIMAL: female 8- to 10-week-old Lewis rat, lung infection model  
RADIOTRACER: 5 MBq (0.8 µCi) <sup>68</sup>Ga-ORN  
ACQUISITION: 2-FOV PET  
Bendova et al J. Med. Chem. 2023, 66, 11, 7584-7593

## In vivo cell tracking <sup>89</sup>Zr

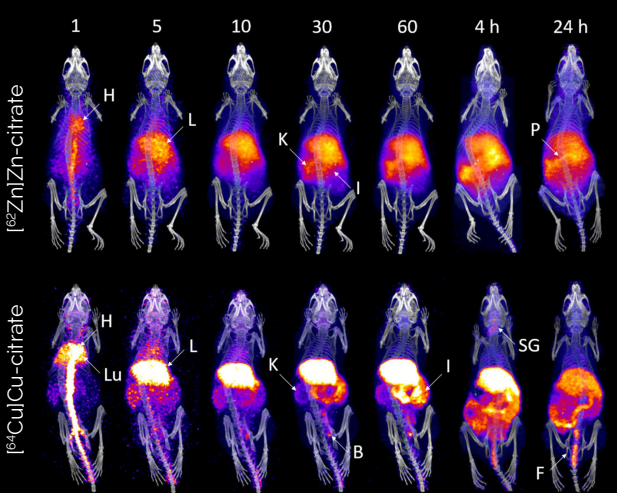
The system enables quantitative studies with extremely low activities like in case of longitudinal cell tracking studies. The image below shows the last data point of a study taken on 17th day post-injection.



ANIMAL: 3×20 g mice  
RADIOTRACER: 30 kBq (0.8 µCi) <sup>89</sup>Zr labelled cells  
ACQUISITION: static PET

## Imaging zinc trafficking in vivo with <sup>62</sup>Zn

Whole-body biodistribution of <sup>62</sup>Zn-citrate was investigated in vivo, and then compared with <sup>64</sup>Cu-citrate as a control to distinguish the biodistribution of <sup>62</sup>Zn from that of its daughter <sup>62</sup>Cu, present at the time of injection.



ANIMAL: Female BALB/c (9-11 weeks)  
RADIOTRACER: ~5 MBq (0.14 mCi) <sup>62</sup>Zn-citrate and <sup>64</sup>Cu-citrate  
ACQUISITION: dynamic PET 60 min, 4 h, and 24 h p.i.  
Firth et al Metallomics, 14, 2022, mfac076

## Whole-body angiography of rat's vasculature

Whole-body angiography of a large (500 g) rat's vasculature after contrast agent injection into the left carotid artery.

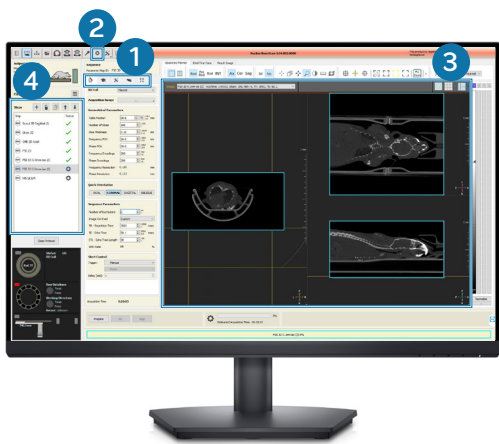


ANIMAL: 500 g Wistar rat  
ENERGY: 50 kVp  
TUBE POWER: 80 W  
ACQUISITION TIME: 5 min

# Complete PET/CT workflow

## Perform routine scans with the clinical validated Nucline™ acquisition software

Nucline™ acquisition software has been developed for **multimodal** medical imaging devices, and is used in **clinical and preclinical** systems as well. It provides the same easy-to-use, integrated framework and main features for all the different modalities (**PET, SPECT, CT and MRI**). It integrates wide range of functionalities of acquisition, calibration, data management, reconstruction, and visualization. Nucline™ has been developed with focus on **clean and user-friendly interface**, while complying to **industry standards** (21 CFR p11, DICOM) and high level **cybersecurity** expectations.



### 1 PERSONALIZED ACCESS LEVELS

- **Routine:** A couple of clicks and the system is ready to run a study-specific, optimized protocol. Only geometry is to set: error-free scanning guaranteed.
- **Advanced:** Several acquisition and reconstruction parameters are editable providing the chance to further optimize the protocols for the study.
- **Research:** Access for all system parameters for researchers with significant experience



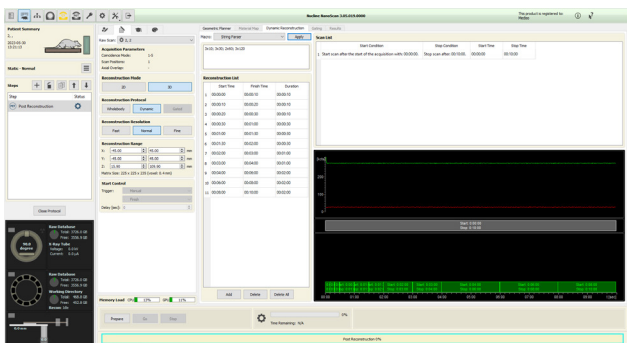
### 2 FOCUS ON QUALITY

- Automatic, quick daily QC protocols
- Real-time diagnostic – including energy and time spectra as well as total and random rate display – for verifying successful injection of radioactivity
- Logged diagnostic data



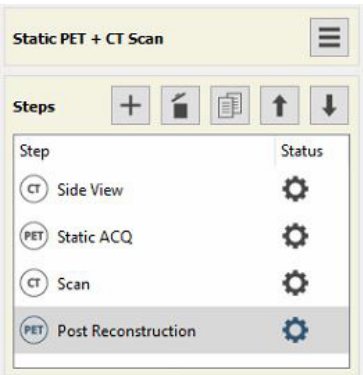
### 3 INTUITIVE GEOMETRIC AND DYNAMIC PLANNER

- Designing scans graphically based on CT scout
- Start PET and CT scanning by 2 clicks using the predefined protocols
- Handle radiotracer information easily, even during scanning to save time
- Design dynamic frames and even multi-FOV dynamic scans and reconstructions graphically
- Copying FOV from one modality to other
- Easy-to-use image viewer to quickly check the result image before next step



### PREDEFINED, CONFIGURABLE PROTOCOLS

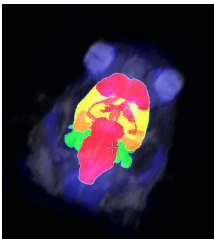
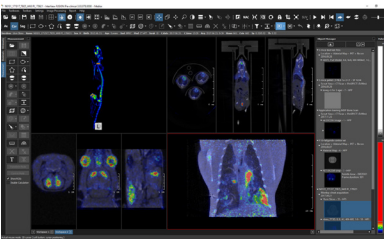
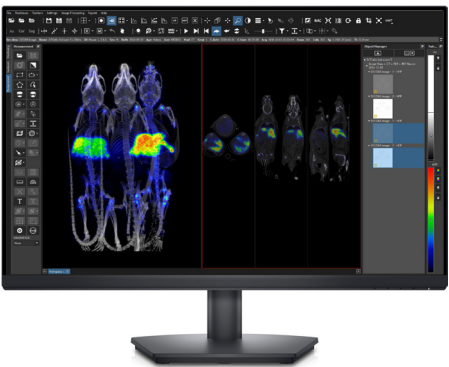
- Multimodality multi-step pre-saved factory protocols optimized for various applications
- Factory protocols can be copied, edited, fine-tuned by the User
- Application specific User protocols can be saved and loaded easily assuring quick, reliable scanning
- Protocol steps can run automatically one by one



## Analyze your quantitative data with the FDA approved InterView™ FUSION visualization and evaluation software

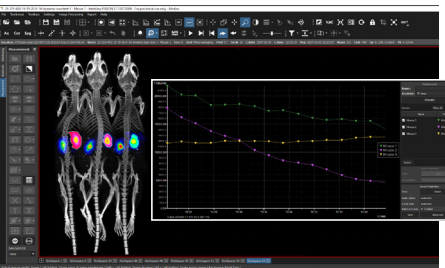
The FDA approved and clinically validated InterView™ FUSION multi-modal post-processing software is an essential part of system. It provides a wide range of functionalities to evaluate PET/SPECT/CT/MRI preclinical data for example:

- Automatic multiple animal image separator
- Brain atlas
- Wide range of 2D and 3D image viewers and rendering for visualization including 3D MIP and 3D Volume Rendering
- 3D and 4D data fusion via all image viewers and visualization of them over time frames
- Large variety of ROI/VOI tools
- Time activity Curves (TAC) of multiple ROIs/VOIs over 4D dynamic data with multiple statistics (min, max, mean, stdev, sum, etc.)
- Automatic co-registration procedures (rigid, affine and non-linear)
- Advanced segmentation methods
- Wide range of data input/output/export capabilities including video formats

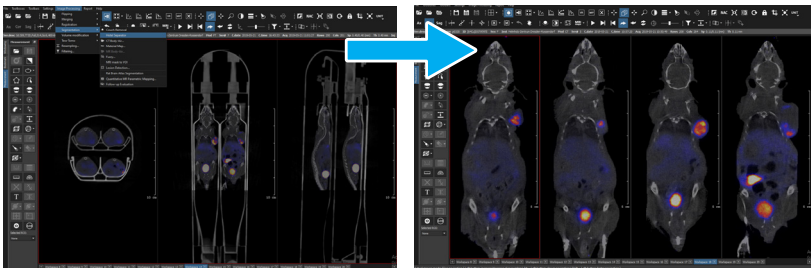


Various image viewer tools

Rat brain atlas



3D MIP viewer with VOIs and related TACs



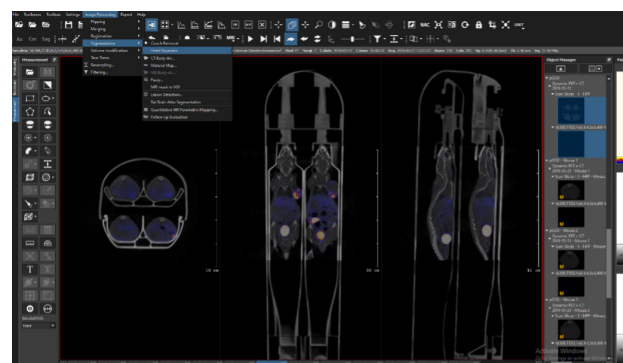
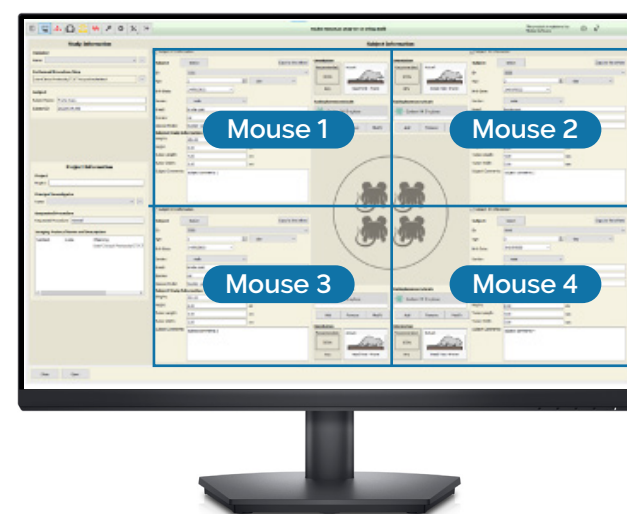
Automatic multiple animal image separator

# Throughput quadrupled

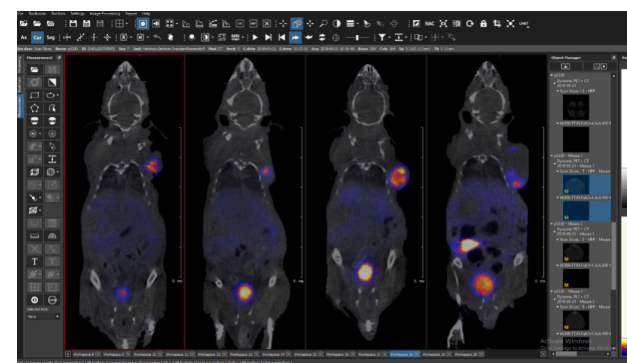
## Fully automated workflow for multiple-animal imaging

With the fully automated complete multiple-animal workflow the improvement in throughput is not limited to acquisition but enables **significant improvement** in **reconstruction** and **image analysis time** as well. There is no need to any manual modifications in animal or dose data, the solution offered takes care of the whole process **automatically**, ensuring **quantitative SUV** data in the end.

- Record animal data (animal ID, weight, injected activity, etc.) for all animals separately and store it in the raw acquisition file.
- Acquisition is as simple as a single animal scan - with individual physiological monitoring for all animals
- Reconstruction: The whole scanned volume can be reconstructed within a couple of minutes
- Automatic erasing of the chamber in the Inter-View™ FUSION software in one click of a button
- Automatic separation of animal images to individual DICOM sets
- Applying dose and weight information separately and save them to the DICOM header:



Automatic erasing of the chamber



Automatic separation

### Four mice scanning without compromise

The **large bore size** (16 cm) and **transaxial field of view** (12 cm) of the nanoScan® PET/CT system enables scanning of **four mice, each up to 60 g** simultaneously. With the nanoScan® system there is no **need to squeeze** the animals in very small diameter containers that results in limitation in animal size and degradation in image quality due to possible spill over.



Scanning of four "normal-sized" mice

# Flexible options for installation

The nanoScan® PET/CT system is designed to have and to be installed in any lab. At the same time dynamic PET-imaging capabilities are supported with all possible means i.e. free access to the animal in the PET-ring, minimal dead space and starting acquisition from the touchscreen.

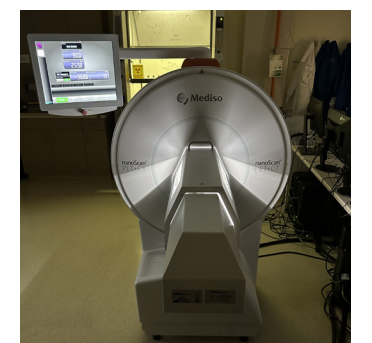
As is an important topic for every imaging lab, the nanoScan® PET/CT fits all possible requirements. From closed box X-ray option to open CT system in separate acquisition room various possible configuration are offered.



nanoScan® PET/CT and SPECT/CT reference installation of two systems in one small laboratory

### CLOSED BOX CT OPTION

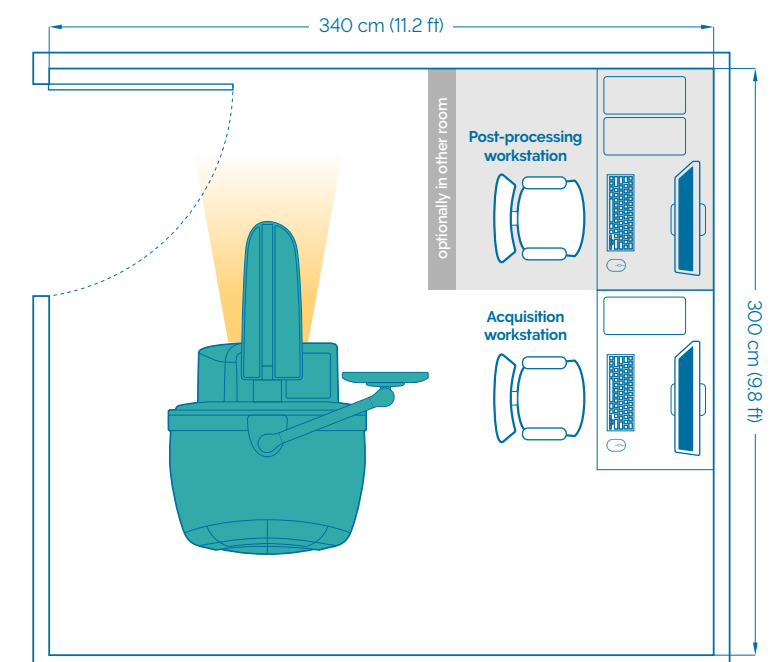
Available option ensuring zero radiation emission in the imaging room.



Closed box CT option installed

## Minimal installation requirements

- Light-weighted systems with small footprint: 650 kg, 1760×1050 mm (L×W)
- No need for control or technical room. All workstations can be placed next to the system
- Post-processing workstation can be next to the acquisition workstation or at the researcher's room
- Acquisition can be started from touchscreen
- As the nanoScan® PET/CT is a closed and properly shielded system (compliant with the regulations of IEC/EN 60601-1-3 12.4 and 12.5), it is not necessary for the operator to leave to camera room even in standard configuration.



# Animal handling

## MultiCell™ imaging chambers

### Mouse L (Standard)

Inner space: 141×31 mm  
Outer dimension: 466×40 mm  
Up to 80 g  
Also available in BSL3 version

### Rat L

Inner space: 249×60 mm  
Outer dimension: 580×70 mm  
Up to 600 g

### Rat Dual (Side-by-Side)

Inner space: 2×55×400 mm  
Outer dimension: 118×579 mm  
Up to 2×300 g

### Mouse Triple

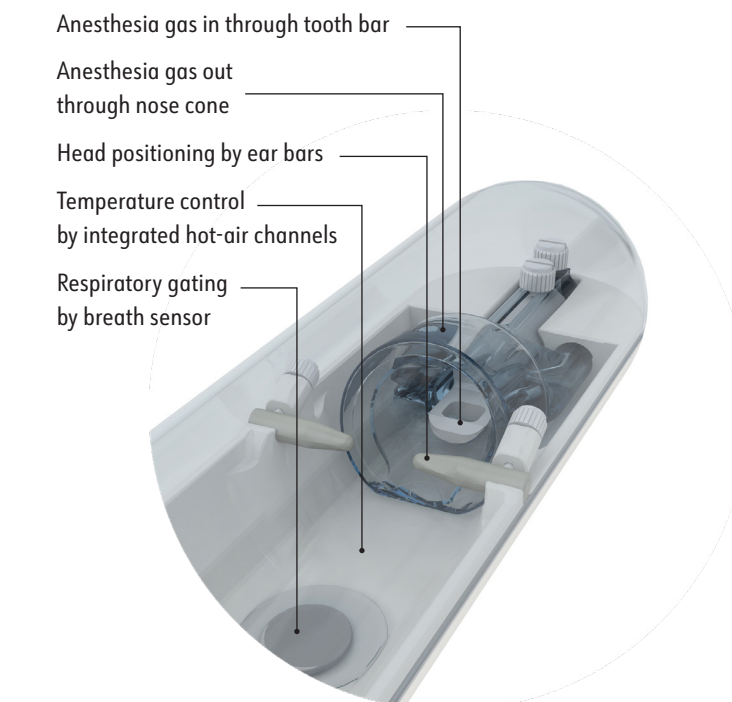
Inner space: 144×26 mm  
Outer dimension: 488×70 mm  
Up to 3×35-40 g

### Mouse Quadruple

Inner space: 4×30×194 mm  
Outer dimensions: 85×524 mm  
Up to 4×60 g

### Marmoset

Inner space: 65×440 mm  
Outer dimensions: 70×540 mm  
Up to 600 g



### Rat Dual (Head-to-Head)

Inner space: 240×60 mm  
Outer dimension: 590×70 mm  
Up to 2×200 g

### Mouse BSL-3

Inner space: 141×31 mm  
Outer dimension: 578×60 mm  
Up to 80 g

### Rat XXL

Inner space: 102×510 mm  
Outer dimensions: 110×650 mm  
Up to 1.5 kg

### Rabbit

Inner space: 150×600 mm  
Outer dimensions: 160×760 mm  
Up to 6.5 kg

## Monitoring and gating

- » ECG monitoring and triggering
- » Respiration monitoring and triggering
- » Temperature monitoring and control module
- » Accessible from touchscreen and workstation

**Respiration and body temperature monitoring even for four animals**

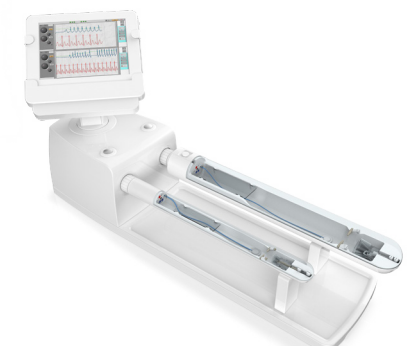


## PrepaCell™

Supporting complete animal preparation before the scan, setting of:

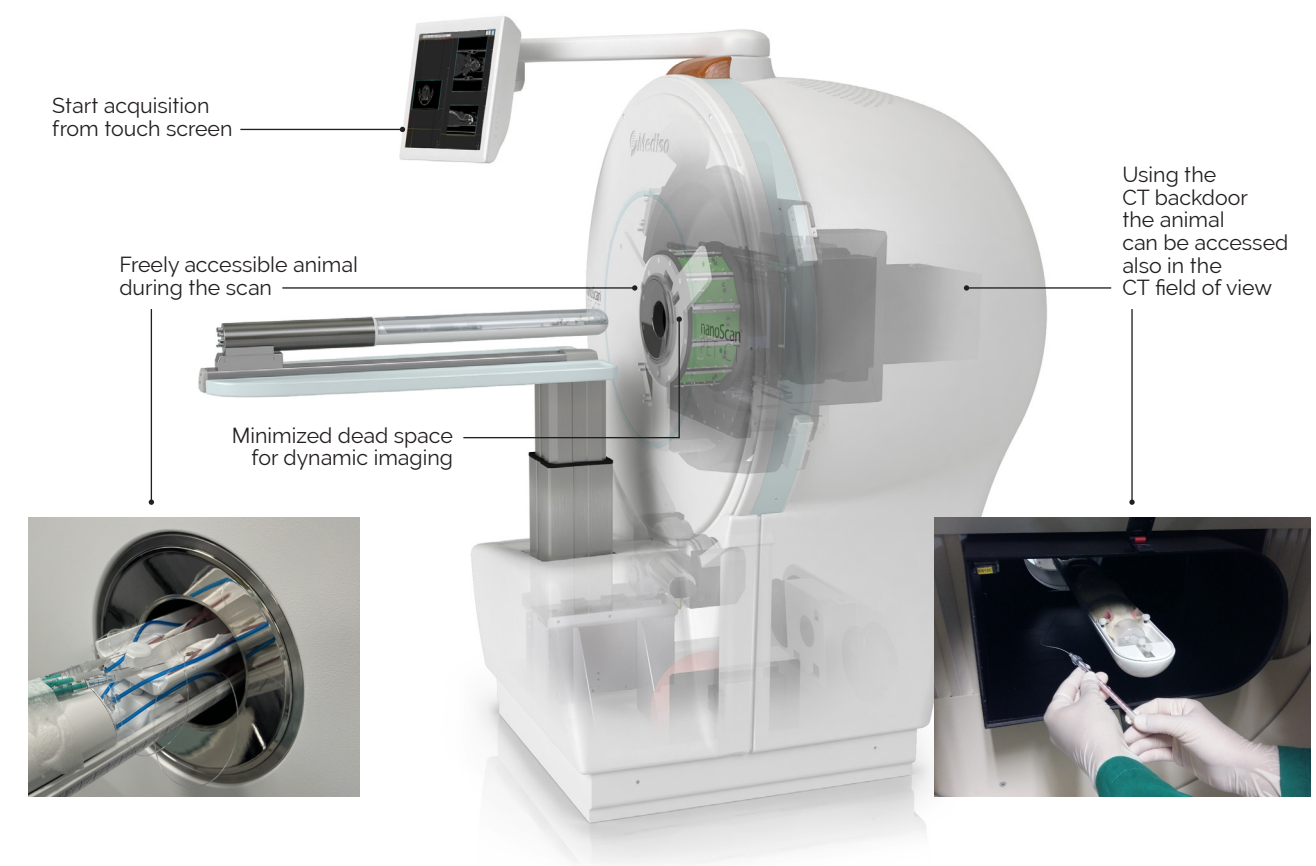
- » Anaesthesia
- » Heating
- » Vital function monitoring

**Eases workflow and increases throughput**



## Free access to the animal

For dynamic PET-studies it is **crucial to have free access to the animal** and to avoid the use of long catheters. The nanoScan® PET/CT system is designed to master these needs and to offer the best possible solution with clearly visible and accessible animal in the PET field of view.



**nanoScan® MRI 3T/7T**  
High-end MRI with the most robust cryogen-free magnet on the market



## MRI

100% CRYOGEN-FREE • ROBUST MAGNET

- 3T and 7T field strength
- 100% Cryogen-free magnet
  - » No liquid helium or nitrogen
  - » Closed loop – no need to top-up helium
- Wide-range of RF Coils and Sequences
- Compact design:
  - » Small footprint
  - » Marginal fringe field
  - » 480 / 970 kg (3T / 7T)
  - » 1050 / 2140 lbs (3T / 7T)
- Powerful Gradient: (up to 1050 mT/m) for DWI application
- Low-vibration, rear mounted PulseTube cryocooler for artefact free DWI-EPI
- SmartMagnet™
  - » Eco-friendly idle mode
  - » Active quench protection
- Upgrade possibility with 2-types of completely integrated PET systems

**nanoScan® PET/MRI 3T and 7T**

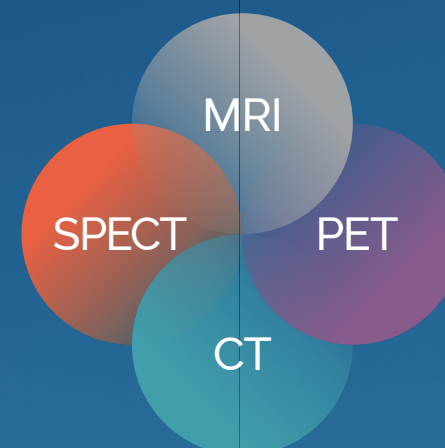
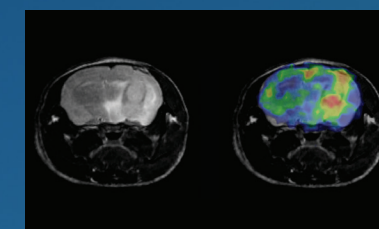
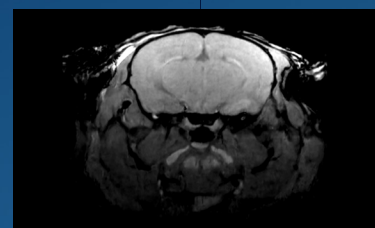
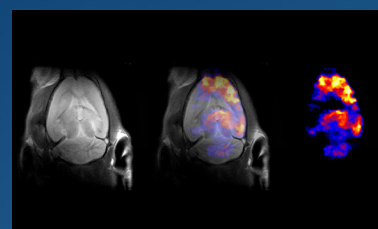
Full-scale, quantitative PET combined with a robust, cryogen-free MRI



## SPECT

HIGH SENSITIVITY • HIGH RESOLUTION • OUTSTANDING THROUGHPUT AT THE SAME TIME

- High resolution (0.3 mm *in vivo*) and high sensitivity 13 000 cps/MBq
- Largest field of view for large and multiple-animal imaging
- High-throughput
- Largest installation base 150+
- Highest flexibility:
  - » Wide isotope energy range, single or multiple: 20 keV – 1 MeV
  - » Various applications – optimized
- multi-pinhole collimators (e.g. MDP bonescan, dynamic, cardiac gated etc.)
  - » Animal models from tiny mouse up to large rabbit (6.5 kg)
  - » Different imaging schemes: helical, circular, full-stationary, 2D
- Parallel-hole collimators for imaging large animals
- List-mode acquisition



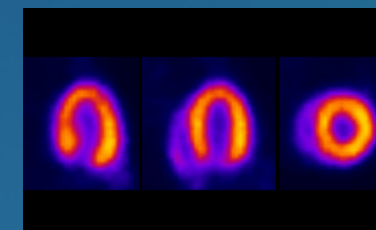
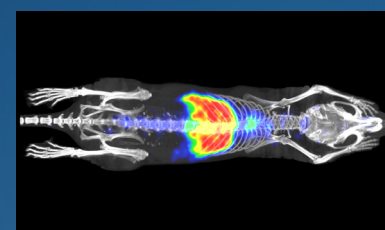
## PET

BEST COUNT RATE PERFORMANCE • HIGHEST RESOLUTION WITH FREE ACCESS TO THE ANIMALS

- Highest resolution (< 0.7 mm)
- Largest transaxial field of view (12 cm)
- Longest axial field of view (up to 15 cm)
- Highest count rate performance (up to 1800 kcps @ 90 MBq / 2.43 mCi) supporting quantitative imaging in
  - » Radiotracer development
  - » Imaging of short half-life isotopes (e. g. <sup>11</sup>C, <sup>13</sup>N, <sup>15</sup>O)
  - » Multiple-animal imaging
- Free access to the animal supporting dynamic imaging
- Best NEMA sensitivity up to 10.5% (250-750 keV) and best Minimal Detectable Activity (MDA)
- Excellent quantification
- Largest installation base: 150+

**nanoScan® SPECT/CT**

Versatile SPECT/CT with absolute quantification and dedicated solutions for theranostic imaging



**nanoScan® PET/CT**

Real dynamic PET-system designed for quantitative studies



**nanoScan® SPECT/CT/PET**

Versatile SPECT with Real dynamic PET with absolute quantification



## CT

HIGH POWER • HIGH RESOLUTION • LARGE FIELD OF VIEW

- High-resolution (30 µm)
  - Small voxel size (10 µm)
- Up to x7.6 zoom
- Variable transaxial field of view: 2–12 cm
- Highest power: 80 W X-ray tube for
  - » Large animals
  - » Better image quality
- Fast scanning
- Ex vivo samples
- Ultra-low dose protocol (<1 mGy for whole-body mouse)
- Real-time FBP and iterative reconstruction
- Respiration and cardiac gated reconstruction

**MultiScan™ LFER 150 PET/CT**

The ultimate tool for PET imaging in primates and medium sized animals



# Specifications | nanoScan® PET/CT

## PET

### Gantry opening

16 cm

### Transaxial FOV

12 cm

### Axial FOV

15 cm

### Spatial resolution with Tera-Tomo™ (3D OSEM)

0.7 mm

### Spatial Resolution with FBP (NEMA)

1.25 mm

### Sensitivity

10.5% (250–750 keV)

### Noise Equivalent Count Rate for mouse (NEMA)

up to 1800 kcps @ 90 MBq / 2.43 mCi

### Animal models

mouse, rat, marmoset, guinea pig, rabbit

### Multiple animal imaging

up to 4×60 g mice and 2×300 g rats

### Detector crystal

LSO (1.12×1.12×13 mm)

## CT

### Gantry opening

16 cm

### Transaxial FOV

12 cm

### Axial FOV

10 cm

### X-ray power

up to 80 W

### Spatial resolution

30 µm at 10 µm voxel size

### Ultra low-dose protocol

down to 1 mGy for whole-body mouse

### Animal models

Mouse, rat, marmoset, guinea pig, rabbit

### Multiple animal imaging

up to 4×60 g mice and 2×300 g rats

### Image reconstruction

modified Feldkamp-type for real-time reconstruction, iterative for low-dose and low-noise applications

400+ preclinical systems in  
35 countries



nanoScan®  
PET/CT

nanoScan®  
SPECT/CT

nanoScan®  
MRI 3T/7T

nanoScan®  
PET/MRI 3T and 7T

nanoScan®  
SPECT/CT/PET

MultiScan™  
LFER150 PET/CT



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