Powerful MRI, Simplified

- ICON, compact MRI system

Compact MRI

Innovation with Integrity

Preclinical MRI with the ICON™: Powerful insights, simplicity in operation

Traditionally MRI technology has been seen as expensive, requiring years of technical expertise and intensive training to operate the system. Now an MRI system from Bruker does all the complex work for you. You focus on your investigations – let us take care of the rest.

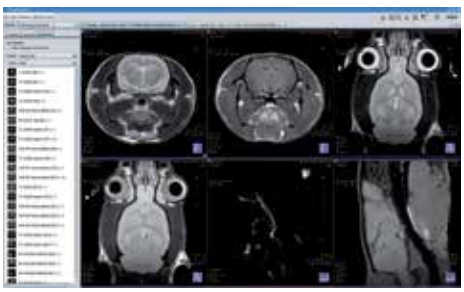
With the ICON compact MRI system, preclinical MRI is now accessible, affordable for smaller labs, and enables non-imaging experts to generate powerful quantitative results.

What makes the ICON unique

- Permanent 1 Tesla magnet with negligible fringe field, negligible running costs, and no water cooling
- 1.2 m² footprint
- Easy to use ParaVision® software enables both novices and experts to achieve maximum efficiency
- Integrated animal handling and physiological monitoring
- The widest range of imaging methods provide full MRI capabilities
- Just a simple power socket is required

Ease of Installation

The ICON provides researchers with the most powerful MRI system in the most convenient form. Its permanent magnet design ensures compatibility with most laboratories. All that is needed is 1.2 m² of floorspace and a simple power socket.



Ease of Use

Bruker's ParaVision® software puts more than five decades of MRI expertise at your fingertips, providing access to the most comprehensive protocol library. Now the non-expert, the biologist, and expert user will quickly be able to operate their MRI systems at optimal efficiency.

Delivering Deeper Insights

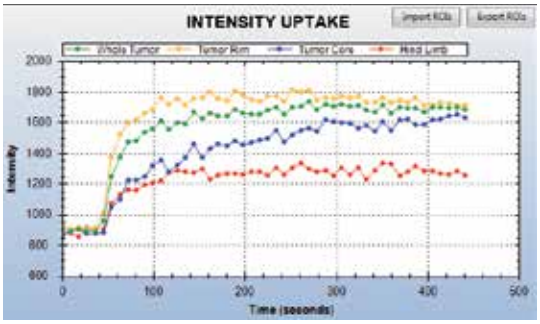
Combining simplicity with compact dimensions and genuine affordability, the ICON brings high performance MRI within everyone's reach.

Wide Application Range

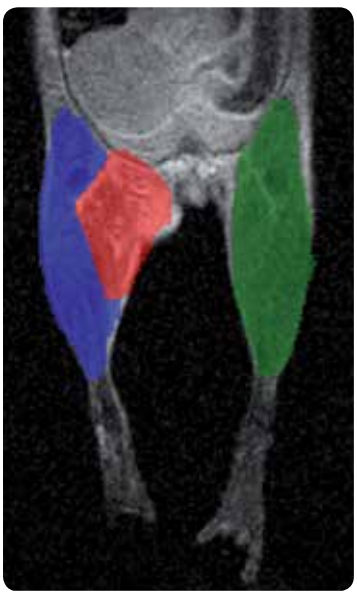
- Oncology
- Whole body anatomy
- Cardiovascular disease
- Neurological disease
- Diabetes and obesity
- Molecular and multi-modality imaging

Localized Perfusion

Localized perfusion measurements of cervical tumor in mouse. Quantification of contrast media leakage from blood vessels into tissue helps explain how the vasculature is structured and how the blood/organ interface works.



Courtesy of J. Zheng, STTARR (UHN), Toronto, Canada.



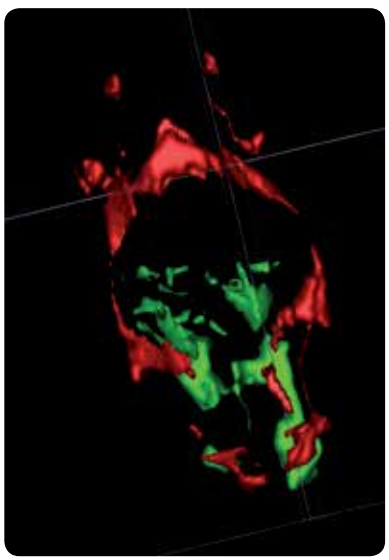
Courtesy of of J Zheng, STTARR (UHN), Toronto, Canada.

Inflammation Visualization

Volume measurement of limb lesion in mouse acute inflammation model. Inflammation processes include change of intracellular/ extracellular water balance. Due to its unique capability of imaging water states, MRI can image and measure this change.

Obesity Fat Study

Segmentation and volume measurement of fats in high fat diet reveals adipose tissues in red, and abdominal adipose tissue in green. The unique capability of MRI to differentiate fats from soft tissue enables the tracking of different diets.



Courtesy of S. Aime, the Molecular Imaging Center, University of Torino, Italy.

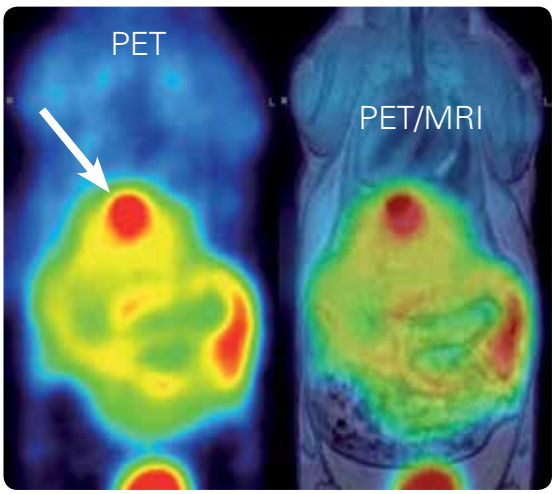
Multi-Modal Imaging

Designed and built by the world's market leader in preclinical MRI, with the widest range of multimodal imaging technologies, the ICON features the industry standard MRI software ParaVision.

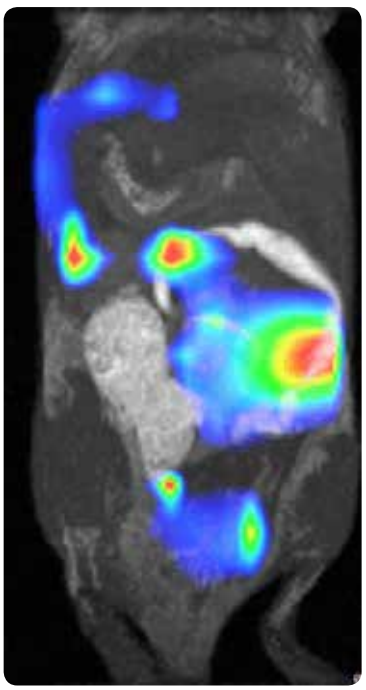
ParaVision 6 seamlessly integrates the ICON's capabilities with multimodal preclinical imaging research labs. Thanks to fully optimized, application-oriented experiment protocols presented in an accelerated workflow, productivity is significantly simplified and enhanced for both the routine user and accomplished expert.

PET/MRI Coregistration

Without any anatomical reference, it is difficult to determine the anatomical location of the PET signal (arrow). Once co-registered with the ICON MRI image, it is clear, that the signal comes from the gall bladder.



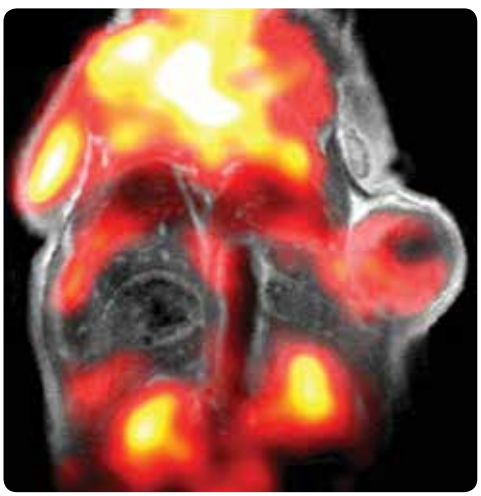
Courtesy C. Kuntner, Austrian Institute of Technology, Vienna, Austria.



MR/bioluminescence Imaging of Ovarian Cancer Tumor Model in Mouse

Combining MR images with optical images enables tumors to be visualized in anatomical context, improving accuracy of the results.

Courtesy of R. de Souza and J. Zheng, STTAR (UHN), Toronto, Canada.



PET/MR Imaging of Flank Tumor in Mouse

Correlation observed between metabolic tumor heterogeneity in PET and anatomical heterogeneity in MRI during sequential acquisition.

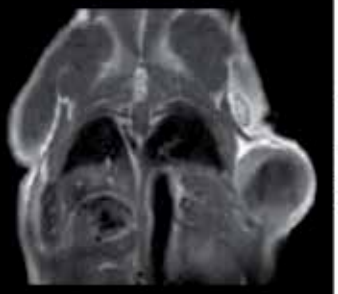
Courtesy of U. Mahmood, P. Heidari and P. Habibollahi, MGH, Massachusetts, USA.

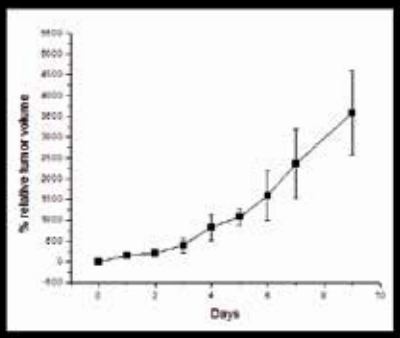
Multiple Applications, Quantifiable Results

With the ICON, researchers have access to over five decades of protocol optimization knowledge. Add-on software packages enable the ICON to perform the latest MRI applications, such as self-gated cardiac imaging, dynamic contrast enhanced perfusion, fast echo-planar image read-out, or ultra-short echo time techniques.

Multiple *in vivo* Applications

- Oncology
- 3D whole body anatomical imaging
- Cardiovascular disease
- Neurological disease
- Diabetes and obesity
- Molecular and multi-modality imaging

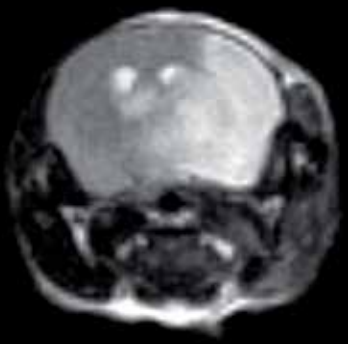


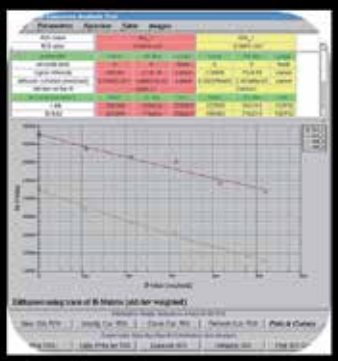


Courtesy of U. Mahmood, P Heidari, P. Habibollahi, MGH, Massachusetts, USA (left) and S. Aime of the Molecular Imaging Center, University of Torino, Italy (right).

Monitor Morphological Changes

Tumor growth and metastasis can be tracked longitudinally over the course of a study. Lesions are easily visualized and quantified volumetrically and therapeutic efficacy can be monitored non-invasively, ensuring tissues and biological processes are not damaged due to ionizing radiation.

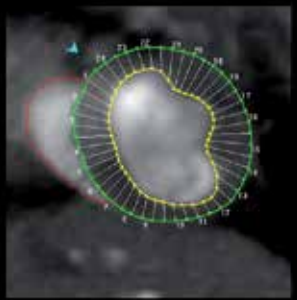




Courtesy of U Mahmood, P. Heidari, P. Habibollahi, MGH, Massachusetts, USA.

Quantify Functional Changes

Assessment of stroke in mouse brain through ischemic area imaging and ADC measurement. In addition, morphological changes in the brain and central nervous system can be visualized, characterized, and quantified with the ICON.



	LV	RV
End Diastolic Volume	0.0151 ml	0.0050 ml
End Systolic Volume	0.0119 ml	0.0034 ml
Stroke Volume	0.0032 ml	0.0016 ml
Ejection Fraction	21.27 %	32.16 %
ED Mass	0.0185 g	NA
ES Mass	0.0181 g	NA

Courtesy of Jun Wu, Toronto General Hospital, Canada.

Visualize Organ Function

Organ and system function, such as angiogenesis for cancer research and cardiovascular function (shown on left) including left ventricular function and assessment of myocardial infarction, can be quantified using the ICON.

50 Years of Innovation

Choose Bruker and benefit from 50 years of innovative leadership, technical expertise, and unwavering commitment to ongoing development of advanced preclinical solutions.

- A global network of technical expertise and applications support
- A global community of over 5,000 users of our instruments
- An unmatched portfolio of nine preclinical imaging modalities
- Knowledge and expertise from a global market leader in imaging technologies
- Service throughout the whole product lifecycle of your instruments
- A company driven by scientists, understanding the needs of scientists

Key Facts

- Innovative permanent 1 Tesla magnet from Aspect Imaging
- Small 1.2 m^2 footprint
- Negligible fringe field for safety and convenience
- Powerful gradients: 360-390 mT/m
- Advanced digital RF AVANCE III architecture
- Negligible running costs
- Integrated animal handling system
- Intuitive MRI software with ParaVision 6
- Always "on" and always ready to image

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