

VET DXA iNSiGHT

Original DXA Technology
DR Image
Fast Scan : 25sec.
Accuracy : $R^2 > 0.9$
Precision : $CV < 1\%$
Simple Operation
Customized Feedback



進階生物科技股份有限公司
服務專線 : 0800-251302

OsteoSys

Longitudinal Measurement In Vivo

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iNSIGHT is the perfect solution for longitudinal research. It offers FAT, LEAN and, BONE measurement in vivo keeping the integrity of the animal. Due to its fast scan time (25sec. total scan, 10sec. X-ray exposure), a simple treatment for anesthesia without any sacrifice of animal is the only prerequisite for measurements.

The screenshot displays the iNSIGHT software interface. On the left, a table lists animal measurements with columns for Measured Date and Study File Name. On the right, a 3D X-ray image of a mouse is shown with red and green ROI markers on its legs. Below the image is a detailed table of measurements for three ROIs (ROI1, ROI2, ROI3).

Index	BMD	BMC	Bone Area	Tissue Area	Fat[%]	Fat[g]	Lean[g]	Total Weight
ROI1	0.217	3.645	44.453	140.543	21.377	104.072	382.764	496.481
ROI2	0.254	0.381	1.142	1.302	18.685	1.331	6.658	0.291
ROI3	0.278	0.308	1.115	1.425	18.788	1.335	6.617	0.253



Measurement Window for each ROI

By combining the merit of NMR(High Precision), DXA(In Vivo Body Composition Follow Up) and DR(High Resolution Image), iNSIGHT pioneers the field of animal body composition analysis with delicate customization and spontaneous co-work with researchers.

The screenshot shows the main user interface of the iNSIGHT software. It features a sidebar menu with options: Measurement, Dailytest, Animal List, and Backup. The iNSIGHT logo is prominently displayed at the bottom.

Main User Interface

The screenshot displays the history analysis window for each ROI. It includes two line graphs showing trends over time and a detailed data table below them.

ROI	Date	BMD	BMC	Bone Area	Tissue Area	Fat[%]	Fat[g]	Lean[g]	Total Weight
ROI1	2018-10-12	0.217	3.645	44.453	140.543	21.377	104.072	382.764	496.481
ROI2	2018-10-04	0.254	0.381	1.142	1.302	18.685	1.331	6.658	0.291
ROI3	2018-09-27	0.278	0.308	1.115	1.425	18.788	1.335	6.617	0.253

History Analysis for Each ROI

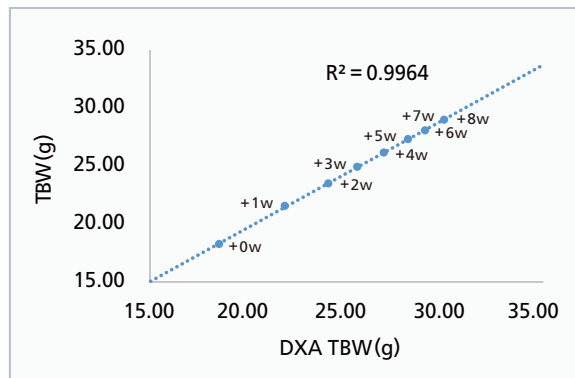
Precision and Accuracy



iNSiGHT is proven with its high precision ($CV < 1\%$) and accuracy ($R^2 > 0.9$) as superb as those of NMR and micro CT. The precision, accuracy and capability of detecting changes for the measurements of total-body weight, fat weight, and lean weight in an 8-week follow-up study of rats was proved by a clinical trial.

On the 8th week, the accuracy was validated by comparing the total body weight measured by iNSiGHT (DXT TBW) with the weight by electronic scale (TBW). The precision was verified by the coefficients of variation (CV) of repeated analysis for rats' Total Body Weight (TBW), Total Body Fat Weight (TBFW) and Total Body Lean Weight (TBLW) measured by iNSiGHT without repositioning of the animals.

Genuine In Vivo Longitudinal Investigation



Accuracy : $R^2 > 0.9$

Contents	CV(%)*
DXA TBW(g)	0.02 ± 0.01 (0.01 - 0.04)
DXA TBFW(g)	0.01 ± 0.05 (0.03 - 0.18)
DXA TBLW(g)	0.03 ± 0.02 (0.01 - 0.06)

* Mean ± SD (Min - Max)

Precision : $CV < 1\%$



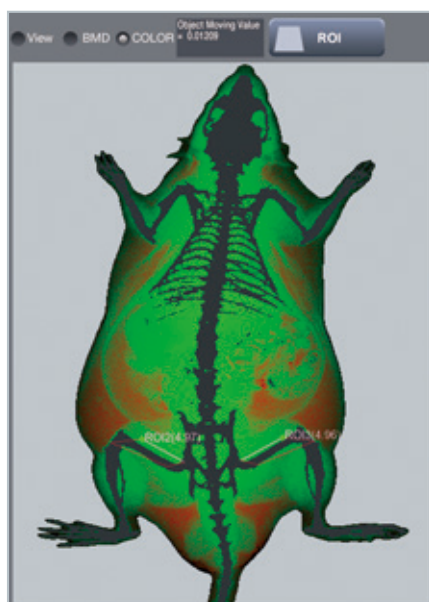
In Vivo Imaging

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iNSiGHT presents an ultimate DXA image with high resolution of 100 μ m. DR image and Color Mapping for lean and fat distribution is optimized for visual analysis and assessment. As pivotal tools enabling a genuine longitudinal study, iNSiGHT is equipped with Multiple ROI setting and the History Analysis. Transparent window and wide imaging area of 16.5cm x 25.5cm secure measuring environment and process for in vivo imaging and DXA analysis. Magnification shelf supports high-end imaging analysis up to 4X geometric magnification.



In Vivo Imaging by Flat Panel Detector



Color Mapping for Fat/Lean Visualization



Bone-Enhanced Image

Ultimate In Vivo Imaging and Automatic DXA Analysis for Longitudinal Studies

iNSiGHT is a fully shielded DXA cabinet body composition analyzer for lab animals. It offers fast scan, high resolution image, multiple ROIs with cone beam HFG and flat panel detector for ultimate precision and accuracy.



X-ray Image by iNSiGHT

Technical Specifications

X-ray System	DXA (Dual Energy X-ray Absorptiometry)
Scan Method	Cone Beam
Scan Object	Small Animal (10~500g)
Scan Time	25sec. (10sec. for X-ray exposure)
Measurement Parameter	BMD (g/cm ²) , BMC (g), Bone Area (cm ²), Tissue Area (cm ²), Fat (%), Fat (g), Lean (g), Total Weight (g)
Precision	CV < 1%
Accuracy	R ² < 0.9
Image area	16.5cm x 25.5cm @1.2X
Pixel size	100μm @1.2X (DXA Mode) 31μm @4X
Operating System	Windows 10 64bit (recommended)
Dimension (W x D x H)	66cm x 60.5cm x 113cm
Weight	160kg

