X-ray HAS_XRY_002

Purpose

Construct and analyse digital X-ray images in immobilised mice using a Faxitron X-Ray system or NTB digital X-ray scanner.

Experimental Design

- **Minimum number of animals:** 5+5
- **Age at test:** adult
- **Sex:** males and females

Procedure

Perform steps 3.1 and 3.2 unless the mouse is coming from DEXA analysis

3.1 Anesthetize the mice.

3.2 Monitor the animal carefully until unconsciousness by ensuring the mouse is adequately sedated.

3.3 Mount the anesthetized mouse onto an X-ray permeable plate. Curve the tail along the left side of the mouse. (Note: this will enable identification of the X-ray as a dorsal or ventral image.)

Faxitron X-ray system

3.3.1 Insert the plate into the Faxitron X-ray system.

3.3.2 Take an image using the software that is supplied by the X-ray scanner.

3.3.3 Set the machine to a voltage of 25kV with an integration time of 40ms.

3.3.4 Take an image using the iX-Pect software that is supplied by the X-ray scanner.

NTB digital X-ray scanner

3.4 Remove the mouse once the image is captured. Place the mouse on a heated mat, set at 37°C, in a cage and monitor closely until consciousness is fully regained.

3.5 Analyze the image.

3.6 Or continue with ABR.

Notes

The protocol described herein employs anaesthesia using intraperitoneal (IP) administration; however, anaesthesia using isofluorane is also suitable.

Parameters and Metadata

Skull shape HAS_XRY_001_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: skull_shape

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Zygomatic bone HAS_XRY_002_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: zygomatic_bone

Options: imageOnly, Normal (0), Mild (1),

Maxilla HAS_XRY_003_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: maxilla

Options: imageOnly, normal, abnormal,

Mandibles HAS_XRY_004_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: mandibles

Options: imageOnly, normal, abnormal,

Teeth HAS_XRY_005_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: teeth

Options: imageOnly, normal, abnormal,

Scapulae HAS_XRY_006_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: scapulae

Options: imageOnly, normal, abnormal,

Clavicle HAS_XRY_007_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: clavicle

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Number of ribs right HAS_XRY_008_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_ribs_right

Number of ribs left HAS_XRY_009_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_ribs_left

Shape of ribs HAS_XRY_010_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: shape_of_ribs

Options: imageOnly, normal, abnormal,

Fusion of ribs HAS_XRY_011_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: fusion_of_ribs

Options: imageOnly, fused, not fused,

Pelvis HAS_XRY_012_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: pelvis

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Number of cervical vertebrae HAS_XRY_013_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_cervical_vertebrae

Number of thoracic vertebrae HAS_XRY_014_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_thoracic_vertebrae

Number of lumbar vertebrae HAS_XRY_015_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_lumbar_vertebrae

Number of pelvic vertebrae HAS_XRY_016_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_pelvic_vertebrae

Number of caudal vertebrae HAS_XRY_017_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_caudal_vertebrae

Shape of vertebrae HAS_XRY_018_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: shape_of_vertebrae

Options: imageOnly, normal, abnormal,

Fusion of vertebrae HAS_XRY_019_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: fusion_of_vertebrae

Options: imageOnly, yes, no,

Processes on vertebrae HAS_XRY_020_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: processes_on_vertebrae

Options: imageOnly, normal, abnormal,

Humerus HAS_XRY_021_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: humerus

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Radius HAS_XRY_022_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: radius

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Ulna HAS_XRY_023_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: ulna

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Femur HAS_XRY_024_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: femur

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Tibia HAS_XRY_025_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: tibia

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Fibula HAS_XRY_026_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Description: fibula

Options: imageOnly, Normal (0), Mild (1), Obvious (2), Severe (3),

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Joints HAS_XRY_027_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: joints

Options: imageOnly, normal, abnormal,

Number of digits HAS_XRY_028_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: number_of_digits

Syndactylism HAS_XRY_029_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: syndactylism

Options: imageOnly, Syndactylism, no syndactylism,

Completeness of digits HAS_XRY_030_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: completeness_of_digits

Options: imageOnly, yes, no,

Digit integrity HAS_XRY_031_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Description: digit_integrity

Options: imageOnly, yes, no,

Comment on XRay image HAS_XRY_032_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: comment_on_xray_image

Tibia length HAS_XRY_033_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: mm

Description: tibia_length

XRay Images Lateral Orientation HAS_XRY_034_001 | v1.1

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Increments: Minimum 1

XRay Images Dorso Ventral HAS_XRY_035_001 | v1.1

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: xray_images

Increments: Minimum 1

Alive HAS_XRY_036_001 | v1.2

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: alive

Options: Yes, No - terminal bleed, No - frozen, No - fixed,

Xray equipment ID HAS_XRY_037_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: xray_equipment_name

Options: 2321A0950,

Xray equipment manufacturer HAS_XRY_038_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: xray_equipment_manufacturer

Options: Faxitron Xray Corporation,

Xray equipment model HAS_XRY_039_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: xray_equipment_model

Options: MX20,

Settings time of exposure HAS_XRY_040_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: s

Description: settings_time_of_exposure

Options: 10sec,

Settings level HAS_XRY_041_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: settings_level

Options: 26kV,

Experimenter ID (analysis) HAS_XRY_043_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: experimenter_analysis_

Voltage settings HAS_XRY_044_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: voltage_settings

Scanner equipment ID HAS_XRY_045_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: scanner_equipment_name

Scanner equipment manufacturer HAS_XRY_046_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: scanner_equipment_manufacturer

Scanner equipment model HAS_XRY_047_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: scanner_equipment_model

Date Xray equipment last calibrated HAS_XRY_048_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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XRay Images Forepaw HAS_XRY_049_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Increments: Minimum 1

XRay Images Skull Lateral Orientation HAS_XRY_050_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Increments: Minimum 1

XRay Images Skull Dorso Ventral Orientation HAS_XRY_051_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Increments: Minimum 1

XRay Images Hind Leg and Hip HAS_XRY_052_001 | v1.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Increments: Minimum 1

Date Scanner equipment last calibrated HAS_XRY_053_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Skull size HAS_XRY_055_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Ectopic calcification HAS_XRY_056_001 | v1.0

simpleParameter

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Elbow HAS_XRY_057_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Rib cage HAS_XRY_058_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Spine - lumbar HAS_XRY_059_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Spine - tail HAS_XRY_060_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Hip joint HAS_XRY_061_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Knee joint HAS_XRY_062_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Patella ligament oscification HAS_XRY_063_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

Achilles tendon oscification HAS_XRY_064_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Options: Normal (0), Mild (1), Obvious (2), Severe (3),

General comments about the mouse HAS_XRY_065_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: general_comments_about the mouse

PIL number HAS_XRY_066_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Date of procedure HAS_XRY_042_001 | v1.1

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: Date

Description: date_of_measurement

Date of analysis HAS_XRY_067_001 | v1.1

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: Date

Description: date_of_measurement

Procedural comments HAS_XRY_054_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Anaesthetic reversal HAS_XRY_068_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: anaesthetic_reversing_agent

Options: Yes, No,

Anesthetic agent 1 HAS_XRY_069_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: anesthetic_agent_1

Options: Ketamine,

Anesthetic agent 2 HAS_XRY_070_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: anesthetic_agent_2

Options: Xylazine,

Anesthetic agent 1 dosage HAS_XRY_071_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: mg/g

Description: anesthetic_agent_1_dosage

Options: 1,

Anesthetic agent 2 dosage HAS_XRY_072_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: mg/g

Description: anesthetic_agent_2_dosage

Options: 0.01,
