

X-ray JAXLA_XRY_001

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** : 4M + 4F
- **Age at test:** Week 75

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 isoflurane is also suitable.

[Digit integrity IMPC_XRY_031_001](#) *Definition:* The state of being whole and undivided.

Parameters and Metadata

Scanner equipment model JAXLA_XRY_046_001 | v1.1

procedureMetadata

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

Number of thoracic vertebrae JAXLA_XRY_014_001 | v1.0

simpleParameter

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

Free Ontology JAXLA_XRY_054_001 | v1.0

simpleParameter

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

Humerus JAXLA_XRY_021_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, imageOnly, normal, unobservable,

XRay Images Skull Dorso Ventral Orientation JAXLA_XRY_051_001 | v1.2

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

Maxilla/Pre-maxilla JAXLA_XRY_003_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, normal, unobservable, imageOnly,

Joints JAXLA_XRY_027_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: imageOnly, abnormal, unobservable, normal,

Skull shape JAXLA_XRY_001_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: normal, imageOnly, abnormal, unobservable,

Processes on vertebrae JAXLA_XRY_020_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: imageOnly, unobservable, normal, abnormal,

Number of digits JAXLA_XRY_028_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Transitional vertebrae JAXLA_XRY_060_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: imageOnly, yes, unobservable, no,

Shape of ribcage JAXLA_XRY_059_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: imageOnly, normal, unobservable, abnormal,

Date Xray equipment last calibrated JAXLA_XRY_047_001 | v1.3

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Polysyndactylism JAXLA_XRY_062_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: imageOnly, unobservable, yes, no,

Caudal vertebrae morphology JAXLA_XRY_074_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, imageOnly, abnormal, unobservable,

XRay Images Whole Body Lateral Orientation JAXLA_XRY_048_001 | v1.2

seriesMediaParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Increments: Minimum 1

Scapulae JAXLA_XRY_006_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: imageOnly, normal, unobservable, abnormal,

Sacral processes JAXLA_XRY_066_001 | v1.0

simpleParameter

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

Options: unobservable, imageOnly, abnormal, normal,

Number of ribs right JAXLA_XRY_008_001 | v1.0

simpleParameter

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

Fibula JAXLA_XRY_026_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

Scanner equipment ID JAXLA_XRY_044_001 | v1.1

procedureMetadata

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

Date Scanner equipment last calibrated

JAXLA_XRY_053_001 | v1

.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Femur

JAXLA_XRY_024_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: imageOnly, unobservable, abnormal, normal,

Fusion of ribs

JAXLA_XRY_011_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: imageOnly, unobservable, fused, not fused,

Pelvis

JAXLA_XRY_012_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, unobservable, imageOnly, normal,

Kyphosis JAXLA_XRY_057_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, imageOnly, yes, unobservable,

Number of cervical vertebrae JAXLA_XRY_013_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Tibia length JAXLA_XRY_033_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

Scanner equipment manufacturer JAXLA_XRY_045_001 | v1.1

procedureMetadata

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

Tibia JAXLA_XRY_025_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, abnormal, unobservable,

Comment on XRay image JAXLA_XRY_032_001 | v1.1

simpleParameter

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

XRay Images Hind Leg and Hip JAXLA_XRY_052_001 | v1.1

seriesMediaParameter

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

Increments: Minimum 1

Number of ribs left JAXLA_XRY_009_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Teeth JAXLA_XRY_005_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, imageOnly, normal, unobservable,

Mandibles JAXLA_XRY_004_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, imageOnly, unobservable, normal,

Fusion of processes JAXLA_XRY_061_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, no, yes, imageOnly,

XRay Images Whole Body Dorso Ventral JAXLA_XRY_034_001 | v1.3

seriesMediaParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Increments: Minimum 1

XRay Images Forepaw JAXLA_XRY_049_001 | v1.1

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

Thoracic processes JAXLA_XRY_064_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, imageOnly, normal, unobservable,

Lumbar processes JAXLA_XRY_065_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, normal, imageOnly, abnormal,

Ulna JAXLA_XRY_023_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, unobservable, normal, imageOnly,

XRay Images Skull Lateral Orientation JAXLA_XRY_050_001 | v1.2

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

Missing cranial rib JAXLA_XRY_068_001 | v1.0

simpleParameter

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

Options: Yes, No,

Voltage settings JAXLA_XRY_043_001 | v1.1

procedureMetadata

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

Number of lumbar vertebrae JAXLA_XRY_015_001 | v1.0

simpleParameter

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

Radius JAXLA_XRY_022_001 | v1.0

simpleParameter

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

Options: normal, unobservable, abnormal, imageOnly,

Shape of vertebrae JAXLA_XRY_018_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: unobservable, normal, imageOnly, abnormal,

Shape of ribs JAXLA_XRY_010_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, normal, unobservable, imageOnly,

Shape of spine JAXLA_XRY_055_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, imageOnly, normal, abnormal,

Settings time of exposure JAXLA_XRY_039_001 | v1.1

procedureMetadata

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

Unit Measured: s

Cervical processes JAXLA_XRY_063_001 | v1.1

simpleParameter

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

Options: unobservable, normal, imageOnly, abnormal,

Settings level JAXLA_XRY_040_001 | v1.1

procedureMetadata

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

Pelvic vertebrae morphology JAXLA_XRY_073_001 | v1.0

simpleParameter

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

Options: unobservable, imageOnly, abnormal, normal,

Lordosis JAXLA_XRY_058_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: yes, no, unobservable, imageOnly,

Caudal processes JAXLA_XRY_067_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, unobservable, imageOnly, normal,

Experimenter ID (scan) JAXLA_XRY_041_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Digit integrity JAXLA_XRY_031_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: yes, no, unobservable, imageOnly,

Zygomatic bone JAXLA_XRY_002_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, imageOnly, normal, unobservable,

Thoracic vertebrae morphology JAXLA_XRY_071_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, abnormal, unobservable, imageOnly,

Xray equipment model JAXLA_XRY_038_001 | v1.4

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: UltraFocus 100, MS-FX Pro, R_mCT (Micro-CT), UltraFocus DXA, MX-20-DC4, MX-20, MX-20-DC12,

Brachydactyly JAXLA_XRY_030_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: no, imageOnly, unobservable, yes,

Clavicle JAXLA_XRY_007_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: abnormal, unobservable, normal, imageOnly,

Number of caudal vertebrae JAXLA_XRY_017_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Rib morphology JAXLA_XRY_069_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, normal, abnormal, imageOnly,

Xray equipment manufacturer JAXLA_XRY_037_001 | v1.4

procedureMetadata

Req. Analysis: true

Req. Upload: false

Is Annotated: false

Options: Faxitron Bioptics LLC, Bruker, Faxitron X-Ray Corporation,
Rigaku Corporation (Micro-CT),

Fusion of vertebrae JAXLA_XRY_019_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: no, imageOnly, unobservable, yes,

Number of pelvic vertebrae JAXLA_XRY_016_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Syndactylism JAXLA_XRY_029_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Options: unobservable, imageOnly, Syndactylism, no syndactylism,

Lumbar vertebrae morphology JAXLA_XRY_072_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, unobservable, imageOnly, abnormal,

Experimenter ID (analysis) JAXLA_XRY_042_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Alive JAXLA_XRY_035_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Cervical vertebrae morphology JAXLA_XRY_070_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, unobservable, normal, imageOnly,

Scoliosis JAXLA_XRY_056_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: yes, imageOnly, unobservable, no,

Xray equipment ID JAXLA_XRY_036_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false
