X-ray KMPCLA_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 58

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

Experimenter ID (analysis) KMPCLA_XRY_042_001 | v1.1

procedureMetadata

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

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Lordosis KMPCLA_XRY_058_001 | v1.1

simpleParameter

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

Options: yes, imageOnly, no, unobservable,

Shape of ribcage KMPCLA_XRY_059_001 | v1.1

simpleParameter

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

Options: normal, unobservable, imageOnly, abnormal,

Voltage settings KMPCLA_XRY_043_001 | v1.1

procedureMetadata

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

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XRay Images Whole Body Lateral Orientation KMPCLA_XRY_048_001 | v1.2

seriesMediaParameter

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

Increments: Minimum 1

Pelvic vertebrae morphology KMPCLA_XRY_073_001 | v1.0

simpleParameter

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

Options: imageOnly, normal, unobservable, abnormal,

Number of ribs right KMPCLA_XRY_008_001 | v1.0

simpleParameter

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

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Free Ontology KMPCLA_XRY_054_001 | v1.0

simpleParameter

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

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Settings level KMPCLA_XRY_040_001 | v1.1

procedureMetadata

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

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Number of caudal vertebrae KMPCLA_XRY_017_001 | v1.1

simpleParameter

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

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Cervical processes KMPCLA_XRY_063_001 | v1.1

simpleParameter

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

Options: abnormal, normal, unobservable, imageOnly,

Radius KMPCLA_XRY_022_001 | v1.0

simpleParameter

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

Options: imageOnly, unobservable, abnormal, normal,

Ulna KMPCLA_XRY_023_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

XRay Images Hind Leg and Hip KMPCLA_XRY_052_001 | v1.1

seriesMediaParameter

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

Increments: Minimum 1

Fusion of vertebrae KMPCLA_XRY_019_001 | v1.0

simpleParameter

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

Options: no, unobservable, yes, imageOnly,

Brachydactyly KMPCLA_XRY_030_001 | v1.1

simpleParameter

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

Options: no, unobservable, imageOnly, yes,

Number of lumbar vertebrae KMPCLA_XRY_015_001 | v1.0

simpleParameter

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

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Humerus KMPCLA_XRY_021_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Xray equipment model KMPCLA_XRY_038_001 | v1.4

procedureMetadata

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

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

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Caudal processes KMPCLA_XRY_067_001 | v1.0

simpleParameter

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

Options: imageOnly, unobservable, abnormal, normal,

Comment on XRay image KMPCLA_XRY_032_001 | v1.1

simpleParameter

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

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Teeth KMPCLA_XRY_005_001 | v1.0

simpleParameter

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

Options: unobservable, normal, imageOnly, abnormal,

Joints KMPCLA_XRY_027_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, abnormal, unobservable,

Shape of ribs KMPCLA_XRY_010_001 | v1.0

simpleParameter

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Options: imageOnly, unobservable, normal, abnormal,

Zygomatic bone KMPCLA_XRY_002_001 | v1.0

simpleParameter

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Options: imageOnly, normal, unobservable, abnormal,

Digit integrity KMPCLA_XRY_031_001 | v1.0

simpleParameter

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

Options: no, imageOnly, unobservable, yes,

Scanner equipment ID KMPCLA_XRY_044_001 | v1.1

procedureMetadata

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Transitional vertebrae KMPCLA_XRY_060_001 | v1.1

simpleParameter

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Options: yes, imageOnly, no, unobservable,

Number of thoracic vertebrae KMPCLA_XRY_014_001 | v1.0

simpleParameter

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Fusion of ribs KMPCLA_XRY_011_001 | v1.0

simpleParameter

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Options: imageOnly, fused, not fused, unobservable,

Fusion of processes KMPCLA_XRY_061_001 | v1.1

simpleParameter

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

Options: unobservable, no, yes, imageOnly,

Mandibles KMPCLA_XRY_004_001 | v1.0

simpleParameter

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

Options: unobservable, abnormal, imageOnly, normal,

XRay Images Whole Body Dorso Ventral KMPCLA_XRY_034_001 | v1.3

seriesMediaParameter

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

Increments: Minimum 1

Femur KMPCLA_XRY_024_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

Xray equipment ID KMPCLA_XRY_036_001 | v1.1

procedureMetadata

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

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Thoracic processes KMPCLA_XRY_064_001 | v1.1

simpleParameter

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

Options: unobservable, imageOnly, normal, abnormal,

Kyphosis KMPCLA_XRY_057_001 | v1.1

simpleParameter

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

Options: no, imageOnly, yes, unobservable,

Caudal vertebrae morphology KMPCLA_XRY_074_001 | v1.0

simpleParameter

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

Options: abnormal, normal, imageOnly, unobservable,

Cervical vertebrae morphology KMPCLA_XRY_070_001 | v1.0

simpleParameter

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

Options: normal, abnormal, unobservable, imageOnly,

Number of ribs left KMPCLA_XRY_009_001 | v1.0

simpleParameter

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

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Scanner equipment model KMPCLA_XRY_046_001 | v1.1

procedureMetadata

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

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Tibia KMPCLA_XRY_025_001 | v1.0

simpleParameter

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

Options: normal, unobservable, imageOnly, abnormal,

Fibula KMPCLA_XRY_026_001 | v1.0

simpleParameter

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

Options: imageOnly, unobservable, abnormal, normal,

Rib morphology KMPCLA_XRY_069_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

Date Xray equipment last calibrated KMPCLA_XRY_047_001 | v1.3

procedureMetadata

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

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Date Scanner equipment last calibrated KMPCLA_XRY_053_001 | v1.1

procedureMetadata

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

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Experimenter ID (scan) KMPCLA_XRY_041_001 | v1.1

procedureMetadata

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

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Number of digits KMPCLA_XRY_028_001 | v1.0

simpleParameter

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

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Skull shape KMPCLA_XRY_001_001 | v1.0

simpleParameter

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

Options: imageOnly, normal, unobservable, abnormal,

Xray equipment manufacturer KMPCLA_XRY_037_001 | v1.4

procedureMetadata

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

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

Number of pelvic vertebrae KMPCLA_XRY_016_001 | v1.0

simpleParameter

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

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Shape of spine KMPCLA_XRY_055_001 | v1.1

simpleParameter

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

Options: abnormal, imageOnly, normal, unobservable,

XRay Images Skull Lateral Orientation KMPCLA_XRY_050_001 | v1.2

seriesMediaParameter

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

Increments: Minimum 1

Syndactylism KMPCLA_XRY_029_001 | v1.0

simpleParameter

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

Options: Syndactylism, imageOnly, no syndactylism, unobservable,

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XRay Images Forepaw KMPCLA_XRY_049_001 | v1.1

seriesMediaParameter

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

Increments: Minimum 1

Scanner equipment manufacturer KMPCLA_XRY_045_001 | v1.1

procedureMetadata

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

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Missing cranial rib KMPCLA_XRY_068_001 | v1.0

simpleParameter

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

Options: Yes, No,

Clavicle KMPCLA_XRY_007_001 | v1.0

simpleParameter

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

Options: unobservable, imageOnly, abnormal, normal,

Tibia length KMPCLA_XRY_033_001 | v1.1

simpleParameter

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

Unit Measured: mm

Thoracic vertebrae morphology KMPCLA_XRY_071_001 | v1.0

simpleParameter

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

Options: abnormal, imageOnly, unobservable, normal,

Lumbar vertebrae morphology KMPCLA_XRY_072_001 | v1.0

simpleParameter

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

Options: abnormal, unobservable, imageOnly, normal,

Sacral processes KMPCLA_XRY_066_001 | v1.0

simpleParameter

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

Options: imageOnly, abnormal, normal, unobservable,

Processes on vertebrae KMPCLA_XRY_020_001 | v1.0

simpleParameter

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

Options: normal, unobservable, abnormal, imageOnly,

Scapulae KMPCLA_XRY_006_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

Maxilla/Pre-maxilla KMPCLA_XRY_003_001 | v1.1

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

Number of cervical vertebrae KMPCLA_XRY_013_001 | v1.0

simpleParameter

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

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Scoliosis KMPCLA_XRY_056_001 | v1.2

simpleParameter

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

Options: imageOnly, yes, unobservable, no,

Lumbar processes KMPCLA_XRY_065_001 | v1.1

simpleParameter

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

Options: normal, imageOnly, unobservable, abnormal,

XRay Images Skull Dorso Ventral Orientation KMPCLA_XRY_051_001 | v1.2

seriesMediaParameter

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

Increments: Minimum 1

Polysyndactylism KMPCLA_XRY_062_001 | v1.1

simpleParameter

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

Options: no, imageOnly, unobservable, yes,

Alive KMPCLA_XRY_035_001 | v1.0

simpleParameter

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

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Settings time of exposure KMPCLA_XRY_039_001 | v1.1

procedureMetadata

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

Unit Measured: s

Shape of vertebrae KMPCLA_XRY_018_001 | v1.0

simpleParameter

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

Options: abnormal, imageOnly, normal, unobservable,

Pelvis KMPCLA_XRY_012_001 | v1.0

simpleParameter

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

Options: unobservable, normal, imageOnly, abnormal,
