X-ray ICSLA_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 56

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

Fusion of ribs ICSLA_XRY_011_001 | v1.0

simpleParameter

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

Options: imageOnly, not fused, unobservable, fused,

Cervical processes ICSLA_XRY_063_001 | v1.1

simpleParameter

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

Options: imageOnly, normal, unobservable, abnormal,

Scanner equipment manufacturer ICSLA_XRY_045_001 | v1.1

procedureMetadata

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

Settings time of exposure ICSLA_XRY_039_001 | v1.1

procedureMetadata

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

Unit Measured: s

Tibia ICSLA_XRY_025_001 | v1.0

simpleParameter

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Options: imageOnly, unobservable, normal, abnormal,

Teeth ICSLA_XRY_005_001 | v1.0

simpleParameter

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Options: imageOnly, normal, abnormal, unobservable,

Number of pelvic vertebrae ICSLA_XRY_016_001 | v1.0

simpleParameter

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

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Caudal processes ICSLA_XRY_067_001 | v1.0

simpleParameter

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Options: abnormal, imageOnly, normal, unobservable,

XRay Images Whole Body Dorso Ventral ICSLA_XRY_034_001 | v1.3

seriesMediaParameter

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

Increments: Minimum 1

Xray equipment model ICSLA_XRY_038_001 | v1.4

procedureMetadata

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

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

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Number of thoracic vertebrae ICSLA_XRY_014_001 | v1.0

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Shape of ribs ICSLA_XRY_010_001 | v1.0

simpleParameter

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Xray equipment ID ICSLA_XRY_036_001 | v1.1

procedureMetadata

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Number of lumbar vertebrae ICSLA_XRY_015_001 | v1.0

simpleParameter

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Comment on XRay image ICSLA_XRY_032_001 | v1.1

simpleParameter

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Number of digits ICSLA_XRY_028_001 | v1.0

simpleParameter

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Syndactylism ICSLA_XRY_029_001 | v1.0

simpleParameter

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Options: no syndactylism, imageOnly, Syndactylism, unobservable,

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Fibula ICSLA_XRY_026_001 | v1.0

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Options: normal, unobservable, imageOnly, abnormal,

Clavicle ICSLA_XRY_007_001 | v1.0

simpleParameter

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Options: unobservable, abnormal, imageOnly, normal,

Thoracic vertebrae morphology ICSLA_XRY_071_001 | v1.0

simpleParameter

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Options: abnormal, unobservable, imageOnly, normal,

Lumbar vertebrae morphology ICSLA_XRY_072_001 | v1.0

simpleParameter

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Options: abnormal, unobservable, imageOnly, normal,

Alive ICSLA_XRY_035_001 | v1.0

simpleParameter

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Scoliosis ICSLA_XRY_056_001 | v1.2

simpleParameter

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Options: no, imageOnly, yes, unobservable,

Free Ontology ICSLA_XRY_054_001 | v1.0

simpleParameter

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Lordosis ICSLA_XRY_058_001 | v1.1

simpleParameter

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Options: imageOnly, unobservable, no, yes,

Sacral processes ICSLA_XRY_066_001 | v1.0

simpleParameter

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Options: normal, abnormal, unobservable, imageOnly,

Scapulae ICSLA_XRY_006_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, abnormal, unobservable,

Pelvis ICSLA_XRY_012_001 | v1.0

simpleParameter

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Options: imageOnly, abnormal, unobservable, normal,

Polysyndactylism ICSLA_XRY_062_001 | v1.1

simpleParameter

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Options: yes, unobservable, imageOnly, no,

XRay Images Skull Dorso Ventral Orientation ICSLA_XRY_051_001 | v1.2

seriesMediaParameter

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Increments: Minimum 1

Tibia length ICSLA_XRY_033_001 | v1.1

simpleParameter

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

Unit Measured: mm

Rib morphology ICSLA_XRY_069_001 | v1.0

simpleParameter

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Options: unobservable, imageOnly, normal, abnormal,

Radius ICSLA_XRY_022_001 | v1.0

simpleParameter

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Options: imageOnly, unobservable, abnormal, normal,

Number of cervical vertebrae ICSLA_XRY_013_001 | v1.0

simpleParameter

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Caudal vertebrae morphology ICSLA_XRY_074_001 | v1.0

simpleParameter

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Options: normal, unobservable, abnormal, imageOnly,

Joints ICSLA_XRY_027_001 | v1.0

simpleParameter

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Options: imageOnly, abnormal, unobservable, normal,

Missing cranial rib ICSLA_XRY_068_001 | v1.0

simpleParameter

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

Options: Yes, No,

Experimenter ID (scan) ICSLA_XRY_041_001 | v1.1

procedureMetadata

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

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XRay Images Forepaw ICSLA_XRY_049_001 | v1.1

seriesMediaParameter

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

Increments: Minimum 1

Xray equipment manufacturer ICSLA_XRY_037_001 | v1.4

procedureMetadata

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

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

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Shape of spine ICSLA_XRY_055_001 | v1.1

simpleParameter

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Options: imageOnly, normal, abnormal, unobservable,

Fusion of vertebrae ICSLA_XRY_019_001 | v1.0

simpleParameter

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Options: no, imageOnly, yes, unobservable,

Number of ribs left ICSLA_XRY_009_001 | v1.0

simpleParameter

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Pelvic vertebrae morphology ICSLA_XRY_073_001 | v1.0

simpleParameter

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Options: unobservable, normal, abnormal, imageOnly,

Cervical vertebrae morphology ICSLA_XRY_070_001 | v1.0

simpleParameter

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Options: imageOnly, unobservable, abnormal, normal,

Lumbar processes ICSLA_XRY_065_001 | v1.1

simpleParameter

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Options: imageOnly, normal, abnormal, unobservable,

Voltage settings ICSLA_XRY_043_001 | v1.1

procedureMetadata

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Settings level ICSLA_XRY_040_001 | v1.1

procedureMetadata

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

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Kyphosis ICSLA_XRY_057_001 | v1.1

simpleParameter

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

Options: imageOnly, yes, unobservable, no,

Shape of ribcage ICSLA_XRY_059_001 | v1.1

simpleParameter

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Options: imageOnly, normal, unobservable, abnormal,

Scanner equipment ID ICSLA_XRY_044_001 | v1.1

procedureMetadata

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

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Maxilla/Pre-maxilla ICSLA_XRY_003_001 | v1.1

simpleParameter

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Options: normal, unobservable, abnormal, imageOnly,

Humerus ICSLA_XRY_021_001 | v1.0

simpleParameter

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Options: unobservable, normal, abnormal, imageOnly,

Number of ribs right ICSLA_XRY_008_001 | v1.0

simpleParameter

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Date Xray equipment last calibrated ICSLA_XRY_047_001 | v1.3

procedureMetadata

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

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Scanner equipment model ICSLA_XRY_046_001 | v1.1

procedureMetadata

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

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XRay Images Skull Lateral Orientation ICSLA_XRY_050_001 | v1.2

seriesMediaParameter

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

Increments: Minimum 1

Brachydactyly ICSLA_XRY_030_001 | v1.1

simpleParameter

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

Options: imageOnly, no, yes, unobservable,

Zygomatic bone ICSLA_XRY_002_001 | v1.0

simpleParameter

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

Options: abnormal, unobservable, imageOnly, normal,

Ulna ICSLA_XRY_023_001 | v1.0

simpleParameter

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

Options: normal, unobservable, imageOnly, abnormal,

Skull shape ICSLA_XRY_001_001 | v1.0

simpleParameter

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

Options: abnormal, unobservable, imageOnly, normal,

Date Scanner equipment last calibrated ICSLA_XRY_053_001 | v1.1

procedureMetadata

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

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Thoracic processes ICSLA_XRY_064_001 | v1.1

simpleParameter

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

Options: unobservable, normal, imageOnly, abnormal,

Shape of vertebrae ICSLA_XRY_018_001 | v1.0

simpleParameter

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Options: unobservable, imageOnly, abnormal, normal,

XRay Images Whole Body Lateral Orientation ICSLA_XRY_048_001 | v1.2

seriesMediaParameter

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Increments: Minimum 1

Femur ICSLA_XRY_024_001 | v1.0

simpleParameter

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

Options: unobservable, abnormal, imageOnly, normal,

Digit integrity ICSLA_XRY_031_001 | v1.0

simpleParameter

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

Options: yes, unobservable, no, imageOnly,

Fusion of processes ICSLA_XRY_061_001 | v1.1

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Transitional vertebrae ICSLA_XRY_060_001 | v1.1

simpleParameter

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

Options: no, unobservable, imageOnly, yes,

Mandibles ICSLA_XRY_004_001 | v1.0

simpleParameter

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

Options: normal, abnormal, unobservable, imageOnly,

Number of caudal vertebrae ICSLA_XRY_017_001 | v1.1

simpleParameter

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

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XRay Images Hind Leg and Hip ICSLA_XRY_052_001 | v1.1

seriesMediaParameter

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

Increments: Minimum 1

Processes on vertebrae ICSLA_XRY_020_001 | v1.0

simpleParameter

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

Options: imageOnly, abnormal, unobservable, normal,

Experimenter ID (analysis) ICSLA_XRY_042_001 | v1.1

procedureMetadata

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

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