X-ray HMGULA_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 78

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

Skull shape HMGULA_XRY_001_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Zygomatic bone HMGULA_XRY_002_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Maxilla/Pre-maxilla HMGULA_XRY_003_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Mandibles HMGULA_XRY_004_001 | v1.0

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Options: normal, abnormal, imageOnly, unobservable,

Teeth HMGULA_XRY_005_001 | v1.0

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Options: normal, abnormal, imageOnly, unobservable,

Scapulae HMGULA_XRY_006_001 | v1.0

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Options: normal, abnormal, imageOnly, unobservable,

Clavicle HMGULA_XRY_007_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Number of ribs right HMGULA_XRY_008_001 | v1.0

simpleParameter

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Number of ribs left HMGULA_XRY_009_001 | v1.0

simpleParameter

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Shape of ribs HMGULA_XRY_010_001 | v1.0

simpleParameter

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Fusion of ribs HMGULA_XRY_011_001 | v1.0

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Options: not fused, fused, imageOnly, unobservable,

Pelvis HMGULA_XRY_012_001 | v1.0

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Options: normal, abnormal, imageOnly, unobservable,

Number of cervical vertebrae HMGULA_XRY_013_001 | v1.0

simpleParameter

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Number of thoracic vertebrae HMGULA_XRY_014_001 | v1.0

simpleParameter

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Number of lumbar vertebrae HMGULA_XRY_015_001 | v1.0

simpleParameter

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Number of pelvic vertebrae HMGULA_XRY_016_001 | v1.0

simpleParameter

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Number of caudal vertebrae HMGULA_XRY_017_001 | v1.0

simpleParameter

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Shape of vertebrae HMGULA_XRY_018_001 | v1.0

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Options: normal, abnormal, imageOnly, unobservable,

Fusion of vertebrae HMGULA_XRY_019_001 | v1.0

simpleParameter

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Options: yes, no, imageOnly, unobservable,

Processes on vertebrae HMGULA_XRY_020_001 | v1.0

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Options: normal, abnormal, imageOnly, unobservable,

Humerus HMGULA_XRY_021_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Radius HMGULA_XRY_022_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Ulna HMGULA_XRY_023_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Femur HMGULA_XRY_024_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Tibia HMGULA_XRY_025_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Fibula HMGULA_XRY_026_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Joints HMGULA_XRY_027_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Number of digits HMGULA_XRY_028_001 | v1.0

simpleParameter

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Syndactylism HMGULA_XRY_029_001 | v1.0

simpleParameter

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Options: no syndactylism, Syndactylism, imageOnly, unobservable,

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Brachydactyly HMGULA_XRY_030_001 | v1.0

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Options: yes, no, imageOnly, unobservable,

Digit integrity HMGULA_XRY_031_001 | v1.0

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Options: yes, no, imageOnly, unobservable,

Comment on XRay image HMGULA_XRY_032_001 | v1.0

simpleParameter

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Tibia length HMGULA_XRY_033_001 | v1.0

simpleParameter

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

Unit Measured: mm

XRay Images Whole Body Dorso Ventral HMGULA_XRY_034_001 | v1.0

seriesMediaParameter

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

Increments: Minimum 1

Alive HMGULA_XRY_035_001 | v1.0

simpleParameter

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Xray equipment ID HMGULA_XRY_036_001 | v1.0

procedureMetadata

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Xray equipment manufacturer HMGULA_XRY_037_001 | v1.0

procedureMetadata

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

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Xray equipment model HMGULA_XRY_038_001 | v1.0

procedureMetadata

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Options: MX-20-DC12, MX-20-DC4, R_mCT (Micro-CT), MX-20, MS-FX Pro, UltraFocus 100, UltraFocus DXA, InAlyzer2 Model S,

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Settings time of exposure HMGULA_XRY_039_001 | v1.0

procedureMetadata

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

Unit Measured: s

Settings level HMGULA_XRY_040_001 | v1.0

procedureMetadata

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

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Experimenter ID (scan) HMGULA_XRY_041_001 | v1.0

procedureMetadata

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

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Experimenter ID (analysis) HMGULA_XRY_042_001 | v1.0

procedureMetadata

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Voltage settings HMGULA_XRY_043_001 | v1.0

procedureMetadata

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Scanner equipment ID HMGULA_XRY_044_001 | v1.0

procedureMetadata

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Scanner equipment manufacturer HMGULA_XRY_045_001 | v1.0

procedureMetadata

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Scanner equipment model HMGULA_XRY_046_001 | v1.0

procedureMetadata

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Date Xray equipment last calibrated HMGULA_XRY_047_001 | v1.0

procedureMetadata

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XRay Images Whole Body Lateral Orientation HMGULA_XRY_048_001 | v1.0

seriesMediaParameter

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Increments: Minimum 1

XRay Images Forepaw HMGULA_XRY_049_001 | v1.0

seriesMediaParameter

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

Increments: Minimum 1

XRay Images Skull Lateral Orientation HMGULA_XRY_050_001 | v1.0

seriesMediaParameter

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Increments: Minimum 1

XRay Images Skull Dorso Ventral Orientation HMGULA_XRY_051_001 | v1.0

seriesMediaParameter

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

Increments: Minimum 1

XRay Images Hind Leg and Hip HMGULA_XRY_052_001 | v1.0

seriesMediaParameter

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

Increments: Minimum 1

Date Scanner equipment last calibrated HMGULA_XRY_053_001 | v1.0

procedureMetadata

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

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Free Ontology HMGULA_XRY_054_001 | v1.0

simpleParameter

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

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Shape of spine HMGULA_XRY_055_001 | v1.0

simpleParameter

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Options: normal, abnormal, imageOnly, unobservable,

Scoliosis HMGULA_XRY_056_001 | v1.0

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Kyphosis HMGULA_XRY_057_001 | v1.0

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Lordosis HMGULA_XRY_058_001 | v1.0

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Shape of ribcage HMGULA_XRY_059_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Transitional vertebrae HMGULA_XRY_060_001 | v1.0

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Fusion of processes HMGULA_XRY_061_001 | v1.0

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Polysyndactylism HMGULA_XRY_062_001 | v1.0

simpleParameter

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

Options: yes, no, imageOnly, unobservable,

Cervical processes HMGULA_XRY_063_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Thoracic processes HMGULA_XRY_064_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Lumbar processes HMGULA_XRY_065_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Sacral processes HMGULA_XRY_066_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Caudal processes HMGULA_XRY_067_001 | v1.0

simpleParameter

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

Options: normal, abnormal, imageOnly, unobservable,

Missing cranial rib HMGULA_XRY_068_001 | v1.0

simpleParameter

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

Options: Yes, No,

Rib morphology HMGULA_XRY_069_001 | v1.0

simpleParameter

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

Options: normal, imageOnly, abnormal, unobservable,

Cervical vertebrae morphology HMGULA_XRY_070_001 | v1.0

simpleParameter

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

Options: normal, abnormal, unobservable, imageOnly,

Thoracic vertebrae morphology HMGULA_XRY_071_001 | v1.0

simpleParameter

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

Options: unobservable, normal, abnormal, imageOnly,

Lumbar vertebrae morphology HMGULA_XRY_072_001 | v1.0

simpleParameter

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

Options: normal, unobservable, abnormal, imageOnly,

Pelvic vertebrae morphology HMGULA_XRY_073_001 | v1.0

simpleParameter

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

Options: abnormal, normal, unobservable, imageOnly,

Caudal vertebrae morphology HMGULA_XRY_074_001 | v1.0

simpleParameter

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Options: imageOnly, abnormal, unobservable, normal,
