



Course on Mouse Osteology: basis for X-ray and CT bone phenotyping

Objective of the course

The aim of this EUMODIC Training Course is capacitating participants to localize and to interpret the most common skeletal morphological abnormalities found in mutant mice. This will occur in the context of dedicated learning sessions devoted to the study of bone anatomy and the methodologies (X-ray, CT, Alizarin staining, etc) used to visualize the mouse skeleton. Each lecture will be followed by a practical session in which participants will work with real bone specimens and a CT equipment.

In addition to the theoretical and practical sessions, the course will include seminars where specific skeletal abnormalities found in mutant mice will be discussed.



Theoretical and practical sessions

1. Directional terms and planes of the mouse body. Bone nomenclature. Skeletal design, bone architecture and types of bone. Strain, gender and age bone differences.
2. Bone ontogeny. Osteogenesis and molecular basis of ossification. The genesis of the mouse skeleton.
3. Methodologies addressed to visualize the mouse skeleton: X-ray, CT, Alizarin red staining, enzymatic bone cleaning and Scanning electron microscopy.
4. Skeleton of the head: neural and facial parts of the skull. Mandible and hyoid bone.
5. Vertebral column: cervical, thoracic, lumbar, sacral and caudal vertebrae. Ribs and sternum.
6. Skeleton of the thoracic limb: scapula, clavicle, humerus, radius, ulna, carpal, metacarpal and digital bones.
7. Skeleton of the pelvic limb: coxal, femur, patella, tibia, fibula, tarsal, metatarsal and digital bones.



Speakers

Jesus Ruberte (Course coordinator)
Professor of Veterinary Anatomy and Embryology. UAB
Head of the Mouse Imaging Platform and Morphological Analysis Unit.
CBATEG

Francisca Mulero
Head of the Molecular Imaging Unit. CNIO. Madrid

Marc Navarro
Professor of Veterinary Anatomy and Embryology. UAB

Ana Carretero
Professor of Veterinary Anatomy and Embryology. UAB

Victor Nacher (Course secretary)
Professor of Veterinary Anatomy and Embryology. UAB

Luisa Mendes-Jorge
Professor of Veterinary Anatomy. FMV. Lisboa

Mariana Lopez-Luppo and David Ramos
Assistants in practical sessions

Duration: From 19th to 21st January 2011

Number of participants: 15 maximum

Registration deadline: December 20th

Registration fees: non EUMODIC members 500 euros

The course will take place at the CBATEG and the Veterinary School of the Autonomous University of Barcelona.

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Equipment: eXplore Locus (GE)