



ECTS



UNIVERSITY
OF ABERDEEN

Advanced approaches for studying osteoclasts in transgenic models

1-4 December 2008, Institute of Medical Sciences, University of Aberdeen

Organisers: Miep Helfrich and Rob van 't Hof

All lectures in **level 2 meeting room** unless stated otherwise.

Monday 1 December

12.00 Arrival at IMS, Lunch

14.00 Introduction to course (**Miep Helfrich**, *Aberdeen*) and overview of relevant work of the Bone and Musculoskeletal Programme in Aberdeen (**Mike Rogers**, *Aberdeen*) and Bone Unit in Edinburgh (**Rob van 't Hof** (*Edinburgh, UK*))

14.45 Participants introduce themselves and their work. Three minutes each without slides.

15.45 Tea

16.00 Introduction to Histology and Histomorphometry - **Rob van 't Hof** (*Edinburgh, UK*)

17.00 Tour of the labs

17.30 Depart to accommodation at Premier Inn, Aberdeen Central, West North Street, Tel: 0870 990 6300

19.00 Informal dinner with all participants/tutors at 114 Desswood Place Aberdeen (tel 621513), transport provided.

Tuesday 2 December

09.30 MicroCT - **Rob van 't Hof** (*Edinburgh, UK*)

10.30 Coffee

11.00 Practical 1

13.00 Lunch

14.00 Confocal microscopy (theory and probes for osteoclast studies) - **Fraser Coxon** (*Aberdeen, UK*), Tea at end of lecture

15.00 Practical 2

17.00 Finish

Wednesday 3 December

09.30 Practical 3

11.30 Coffee

12.00 Correlative microscopy - **Paul Verkade** (*Bristol, UK*)
Level 5 conference room. Open lecture to all in IMS

13.00 Lunch

14.00 Practical 4

16.00 Electron Microscopy - **Miep Helfrich** (*Aberdeen, UK*) and
Graham Williams (*London, UK*); Tea provided during lecture

Thursday 4 December

09.00 Practical 5

11.00 Extra practical session by choice

12.30 Lunch (can be taken into lecture room)

13.00 Live cell imaging of osteoclasts - **Pierre Jurdic** (*Lyon, France*),
Level 5 conference room. Open lecture to all in IMS

14.00 Final summing up, evaluation and departure.

Practical Sessions:

Participants work in groups of 3

title	first name	family name	group
Dr	Duncan	Bassett	1
Dr	Bram	van der Eerden	1
Professor	Graham	Williams	1
Miss	Vicki	Green	2
Dr	Emanuela	Mrak	2
Dr	Jeske	Smink	2
Miss	Carmen	Flores	3
Mrs	Sania	Kuzmac	3
Miss	Pamela	Pail	3
Mr	Lieve	Coenegrachts	4
Mrs	Elda	Pacheco-Pantoja	4
Ms	Sophie	Torrekens	4
Ms	Anja	Bloom	5
Mrs	Anita	Neutzsky-Wulff	5
Mr	Fredrik	Strålberg	5

and will rotate around the practical sessions as follows:

Group	Tuesday am	Tuesday pm	Wednesday am	Wednesday pm	Thursday
-----Practical sessions-----					
1	3	4	5	1	2
2	2	3	4	5	1
3	1	2	3	4	5
4	5	1	2	3	4
5	4	5	1	2	3

The practicals are:

1. Transmission electron microscopy (TEM) of bone and osteoclasts
2. Scanning electron microscopy (SEM) of osteoclasts
3. Confocal microscopy of osteoclasts, using a range of antibodies and probes to membrane and intracellular structures
4. microCT and reconstruction and analysis, practical on ex-vivo machine, lecture will also cover *in vivo* imaging by CT
5. Histology and histomorphometry of bone (focussing on mouse bone, correlation with microCT and application to transgenic models)

A variety of other analysis methods will be shown on request (participants will be asked prior to the course to indicate what else they want to see) for example: reflective light microscopy to measure resorption pits and pit depth, a variety of imaging programmes to display 3-dimensional data from confocal and microCT and make measurements and live cell imaging equipment. There will be time on Thursday during the last practical session and in addition at the end of the day or during lunch etc. We will try to accommodate everyone.

Demonstrators for the practicals

The following will assist in the practicals, their specific areas of expertise in brackets:

Miep Helfrich (*senior lecturer*, TEM, histology and general microscopy)

Rob van 't Hof (*senior lecturer*, microCT, histology, histomorphometry and image analysis)

Paul Salmon and Nick Corps (*Skyscan*, microCT and image processing)

Fraser Coxon (*research fellow*, confocal microscopy, immunostaining and image analysis)

Kevin Mackenzie (*imaging technologist*, SEM, microCT, general microscopy and image analysis)

Debbie Scott (*PhD student*, TEM and immunostaining for confocal and TEM)

John Greenhorn (*technician*, TEM, immunogold labelling and resin tissue sectioning)

There will be some additional equipment on demo by request, for example the PALM laser microdissection microscope, an Apotome and a portable microCT scanner.

A **final practical session by choice** takes place on Thursday morning. These sessions will be arranged during the course and we will try to accommodate everyone's preferences.