

Clinical Cell Biology - research group Kent S e

Winsl wparken 25, Odense

Forskningsleder Kent S e

Gruppens kerneforskningsomr der

Clinical Cell Biology consists of 3 senior scientists who through team-work are dedicated to understand key issues of human bone biology. Kent S e (associate professor) is part of this team and his research focus is centered around two research areas: 1. Laboratory research centered around the human bone resorbing cell, the osteoclast. This cell type has many fascinating properties and is the only cells able to degrade bone matrix. We have discovered and documented by time-lapse that osteoclasts can resorb via two modes that do not respond in the same way to drugs. In addition, we have discovered that cells from different individuals have a different ability to resorb in one or the other mode. We have results strongly suggesting that these results are caused by e.g. genetic and/or epigenetic differences between donors/patients and that this discovery can have significant clinical importance. 2. In collaboration with clinical departments such as Oncology, Urology, Endocrinology, Pathology, Immunology and Biochemistry, Kent S e is in charge of or collaborate in several clinical studies which combine bone biomarker measurements and cell culture experiments in vitro using cells from patients in order to optimize treatment of patients with e.g. breast-, prostate cancer or diabetes. Kent S e's research group in general consists of 1 technician, 1-2 PhD-students and 2-3 Master students. Clinical Cell Biology in general consists of approximately 12 research active scientists, technicians and students.

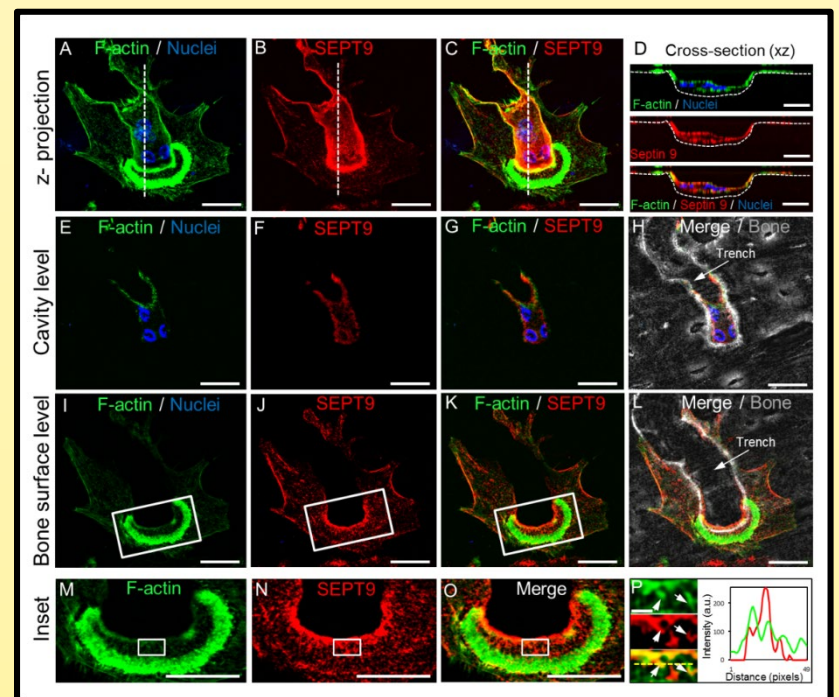
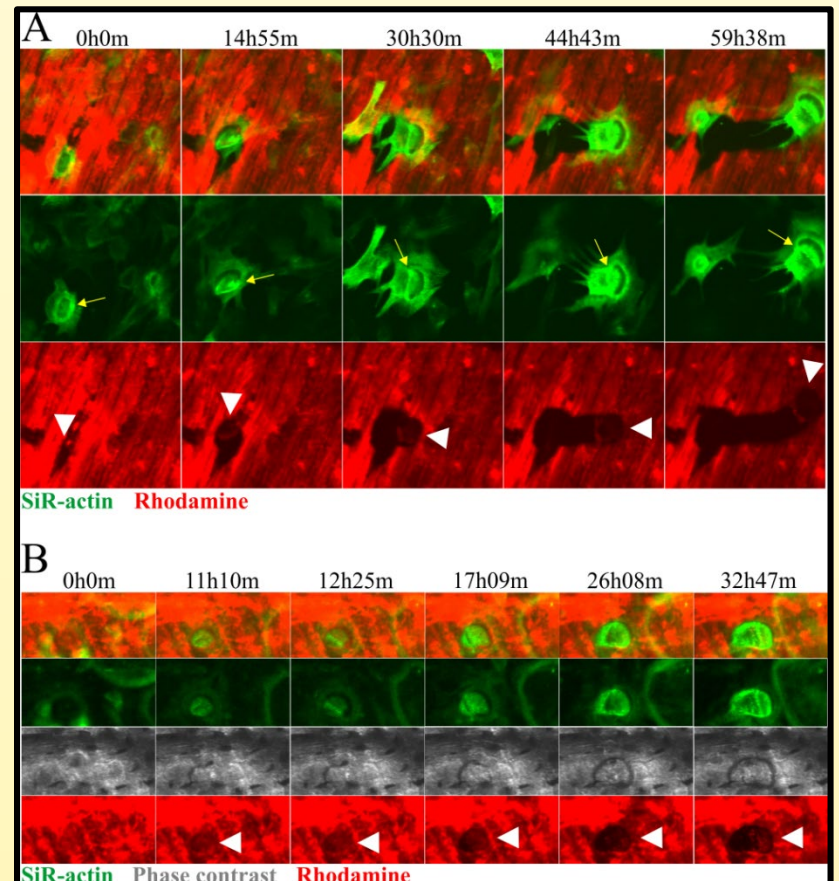


Er du interesseret i at skrive projekt i gruppen, s  kontakt: kent.soe@rsyd.dk/ ksoe@health.sdu.dk

Tidligere studerende

Anais M ller, currently PhD-student under my supervision
Xenia Borggaard, scientific assistant, Dept. of Biochemistry, Vejle Hospital
Mohamed Abdelgawad, Postdoc, INSERM, Paris, France

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Projekter

Beskrivelse

What enables human osteoclasts to resorb continuously while moving across the bone surface?

Using blood from anonymous blood donors you will generate osteoclasts and perform a number of in vitro experiments to characterize and understand what enables an osteoclast to resorb bone continuously for several days without pausing. With techniques such as time-lapse, confocal microscopy, in-situ hybridization, enzymatic assays, Q-RT-PCR, Western blotting, bone resorption assays (using bovine, murine or human bone) you will participate in our internationally competitive research. In addition you may perform co-culture experiments using primary human osteoblasts (grown from fresh human bone specimens) and osteoclasts.

Does increasing age of men affect the resorptive behavior of osteoclasts generated from their blood in vitro?

In collaboration with the Blood Bank at OUH you will use blood from male blood donors specifically recruited for this project. You will generate primary osteoclasts from purified monocytes and perform multiple molecular, microscopic, gene expression, protein synthesis, epigenetic and bone resorptive activity based analyses to answer the research question. This type of project demands determination, good coordination with collaborators, and uni- and multivariate statistical analyses using both in vitro and in vivo obtained data.

Can the activity of osteoclasts in vitro predict/explain the response of patients to treatment in vivo?

You will participate in testing the potential of in vitro experiments and analyses to predict or explain the response of cancer patients to drug treatment or surgery in vivo. This may involve breast cancer patients treated with zoledronic acid or prostate cancer patients undergoing surgical or medical castration. You will isolate cells from the blood of these patients to generate osteoclasts in vitro and test the resorptive behavior of these osteoclasts. Same type of analyses and demands as for project 1.