Clinical and Translational Science Seminar Series

“Digging into the transcriptional networks controlling osteoblast differentiation and their natural heterogeneity across humans”

Online seminar

Speaker: Dr. Alexander Rauch

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21 de noviembre 2024, 15:30 horas
Haga clic aquí para unirse a la reunión (acceso Teams)

Studied Biochemistry and Molecular Biology at the University of Jena from which I also received my PhD in Molecular Biology back in 2011. I performed both my Master and PhD project in the group of Jan Tuckermann at

the Leibniz Institute for Age Research Jena focusing on the cellular and molecular aspects of the deleterious actions of glucocorticoids on bone. Early on I was interested in transcriptional regulation and working with genetic mouse models, but more important, I choose Jan being a young PI for his availability over a well-known laboratory in which might see the PI once a week. After repeated interactions at PhD summer schools and conferences Susanne Mandrup and I conducted a plan for a PostDoc period in her lab. I was lucky getting an EMBO Long-Term Fellowship which allowed me to start at the University of Southern Denmark in 2012 with the investigation of the transcriptional reprogramming during osteoblast and adipocyte differentiation using cell culture models and various functional genomics techniques. Due to tax regulations in Denmark I changed quickly on to a PostDoc Fellowship from the Danish Diabetes Academy. Learning bioinformatics and realizing that the existing tools only partly answered the questions we had took a long time of my PostDoc period, which I did not expect to begin with. After 7 great years in Susanne's lab I moved across the city to join the group of Moustapha Kassem to define my own research niche by combining functional genomics with clinically relevant questions supported by a starting grant from the Lundbeck Foundation. Being affiliated with the Steno Diabetes Center Odense, my group is interested in how metabolism and life-style affect the transcriptional networks governing lineage speciation in stromal cells.

Within this talk novel sequencing based translational approaches will be presented allowing to understand transcriptional networks modulating mesenchymal lineage commitment. A particular focus be put on bioinformatics and sequencing-based techniques at cellular level to explore molecular mechanisms of cellular differentiation as well as cellular heterogeneity of bone cells. From a translational point of view, we want to explore new pathways and quantify the composition of stromal progenitor subpopulations in humans to predict their differentiation capacity and to pinpoint crucial cellular and molecular targets of metabolic bone diseases with relevance for musculoskeletal regeneration.

Moderators: Dra. Maria José Escámez: mescamez@ing.uc3m.es de la Cátedra de Investigación IISFJD-UC3M-CIEMAT CIBER de Enfermedades Raras

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Note: Free seminar. Certificates of attendance are available by registering in advance sending an email to Paloma García.