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Mapping the global gene expression during tooth development may provide new bio-therapeutics tools in dentistry

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Tooth development in murine models occurs in a short time-span providing a window of genetics events and is a good model for organ development. Understanding the genetic processes that govern tooth development by mapping the global murine mRNA transcriptome and their regulators mi-RNAs may provide new bio-therapeutic tools in dentistry. Previous research focus has been on identifying one or more target proteins that can be used as a diagnostic tool and to find the most successful treatment. The understanding of the genetic events during murine tooth development may provide bio-tools for dentists and influence positively the clinical outcome in persistent infectious cases like periodontitis or perio-implantitis. For many patients with persistent infectious conditions with loss of bone and eventually loss of teeth may benefit of new treatment approaches. Extrapolation of genetic studies may contribute to increase knowledge on the numerous biological events in regeneration and healing processes of oral soft and hard tissues may generate new treatment strategies and give predictable results in restoration treatment after oral infections resistant to clinical treatment.

Biography

Maria A Landin is a Toxicologist and specialized in Toxicogenomics. She is working with Prof. Harald Osmundsen at the Institute for Oral Biology. During her PhD, she investigated and mapped the global gene expression in murine tooth buds using molecular biological methods. During her Doctorate degree she acquired knowledge and skills in molecular biological techniques such as microarrays, real-time RT-PCR, isolation of proteins or RNA / DNA from tissues or cells. Currently she researches on the roll of micro-RNAs (mi-RNAs) in the regulation of the murine transcriptome using loss of function studies.

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