

# SUCCESS STORY

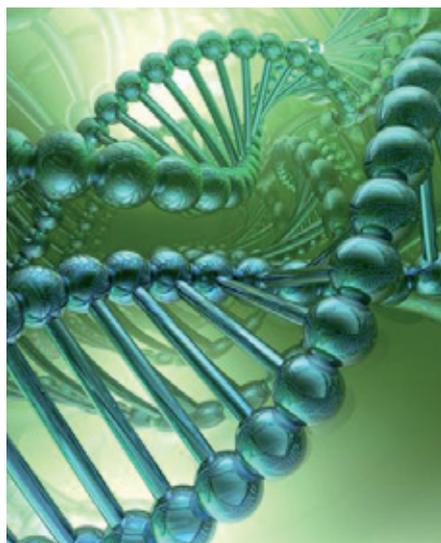
## SEXGENTRANSEVOLUTION/Sex-Biased Genome and Transcriptome Evolution in Mammals

Research area: FP7 – European Research Council/  
Genetics, Genomics, Bioinformatics and Systems Biology (LS2)  
Beneficiary: Prof. Henrik Kaessmann

Host institution: University of Lausanne (UNIL)  
Start date – End date: 2010-02-01 to 2015-01-31  
Duration: 60 months  
Funding: € 1 901 522  
Type of contract: ERC Starting Grant



# HENRIK KAESSMANN



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**“To progress in one’s scientific career one must either join a group of famous researchers or a team of very promising young leaders.”**

## THE GAP BETWEEN MAN AND THE DUCK-BILLED PLATYPUS

Henrik Kaessmann, associate professor in evolutionary genomics at UNIL wants to find out how genomic changes have affected the evolution of the different species. In 2009 he was awarded a subsidy by the European Research Council (ERC) for his work on the functional evolution of mammals’ genomes, called “*Sex-Biased Genome and Transcriptome Evolution in Mammals*”.

### **How did you become interested in science, and later in genomics?**

When I was 15, I was a student in a boarding school in Ottawa, Canada. I got deeply involved in my science classes and won first prize for my year, thanks to my grades, the school’s highest. Back in Germany I met an excellent biology teacher with whom I completed a study on the behaviour of the dog and the wolf. This experience confirmed my calling for biology. My interest in genomics I acquired later, while at the University of Uppsala. Observing plants and animals seemed too obvious; I wanted to explore into cells, a mysterious and fascinating world.

### **What was the subject of your first genuine research work?**

It was my thesis: I researched on the genetic differences between Man and the great apes, the species that is closest to us. Thanks to this work we were able to cast a new light on modern Man’s evolution which we compared with the evolution of the modern chimpanzee. This represented a

crucial time in my career, as this thesis was published in the most respected journals such as *Nature* or *Science*. When I arrived in Lausanne, I carried on in this direction, notably in my current research work on the evolution of mammals’ sexual organs, which benefits from the ERC subsidy.

### **According to you, what are the advantages of this subsidy?**

It allows me to pursue my work in complete peacefulness, but not only that. This European scholarship increases scientific activity in Europe and makes it more competitive in comparison with the United States. Not only on a quantitative level, but also in terms of quality.



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## ABOUT THE PROJECT

The research programme “*Sex-Biased Genome and Transcriptome Evolution in Mammals*” looks in particular into the evolution of mammals’ sexual organs. By combining laboratory experimentation with bioinformatics, the team working under the direction of Henrik Kaessmann sequences the RNA which is the messenger carrying the information from the DNA into the protein factories. This permits one to measure the genes’ activity in a very direct manner and to answer the questions about

mammals’ evolution in their specificities; in short what makes Man, Man and the duck-billed platypus a duck-billed platypus. This research has especially made it possible to discover that the brain had evolved slower than testicles.

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