

Fasteris participated to an international consortium that sequenced the first spider genome

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The international consortium led by Dr. Miodrag Grbić from the University of Western Ontario (UWO) in London, Canada, recently unveiled the first genome of chelicerates (spiders, scorpions, horseshoe crabs, ticks and mites), the second largest group of animals on Earth. This study is published in the latest issue of Nature, (Grbić *et al*, "The genome of *Tetranychus urticae* reveals herbivorous pest adaptations").

The consortium sequenced the genome of one of most cosmopolitan agricultural pests, spider mite *Tetranychus urticae*. This pest is feeding on over 1000 different plants including 150 plants of agricultural importance, causing damages exceeding 1 billion dollars.

The scientific team uncovered the genetic basis of the ability of mites to feed on many different plants; the spider mite is able to multiply and evolve new genes for the detoxification of plant toxic molecules, and most surprisingly, this species also "highjacks" the detoxification genes from bacteria, fungi and plants to combat the plant defense incorporating them into its own genome. The scientists also found a novel beneficial feature of the spider mite, spider mite silk, a natural nano-material of extreme lightness and strength.

Fasteris participated to the project by developing protocols for the preparation of small RNA and transcriptome libraries from tiny amounts of total RNA. These libraries were then sequenced on the illumina Genome Analyzer instruments.

This pioneering genomics work opens new avenues for sustainable agriculture by developing non-pesticide tools for pest control including breeding for the resistance to spider mites as well as biotechnological approaches for control of this pest resulting in the production of pesticide-free food.

About Fasteris

Fasteris was founded in 2003 in Geneva, Switzerland, by Laurent Farinelli and Magne Osteras to provide DNA sequencing services.

In 1996, while at GlaxoWellcome, Dr. Farinelli co-invented the DNA Colonies now known as DNA Clusters, the key technology of the illumina sequencing technology, used in the HiSeq and MiSeq systems.

End 2006, Fasteris was the first service provider in the world to acquire a Solexa (now illumina) sequencer.

Fasteris has a long track record of developing new protocols for illumina sequencing and is pleased to serve research customers world-wide.

Through its technical leadership, Fasteris developed low cost sequencing, selling economy runs of 8-15 millions reads for CHF 500-910.-, depending on the read length.

Fasteris scientists are co-authors of tens of high-impact publications, while our services are cited in large numbers of publications and patents.

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