

SNP DISCOVERY AND MAPPING

in one system...

TECHNOLOGY BRIEF

Floragenex is a genomic research services firm focused on applying leading edge technology to the challenges of biological and medical research for both academic and industry customers. We work collaboratively with each customer to understand the technical objectives of each research aim and translate that into a project that fits within the timeframe and budget available.

Restriction site Associated DNA (RAD) sequencing technology, combines the focusing ability of restriction enzyme digestion with the ever increasing power of today's most advanced sequencing platforms. The RAD system enables simultaneous SNP discovery and SNP genotyping via sequencing thus accelerating the speed of discovery and driving down costs for large sample size projects.

For example, in simple traits that are controlled by only one or two genes, Floragenex can perform marker development in a bulked-segregant analysis of a 30+ individual population to identify genomic regions associated with the phenotype or screen for markers linked to the trait of interest.

For complex, quantitative traits, RAD technology can be extended to genotype members of a mapping population and create genetic maps that offer

“This is perhaps the biggest advance in genetic marker development since Vos et al., in 1995”

Faculty of 1000 Review on RAD Technology

Evaluations for Baird NA et al PLoS ONE

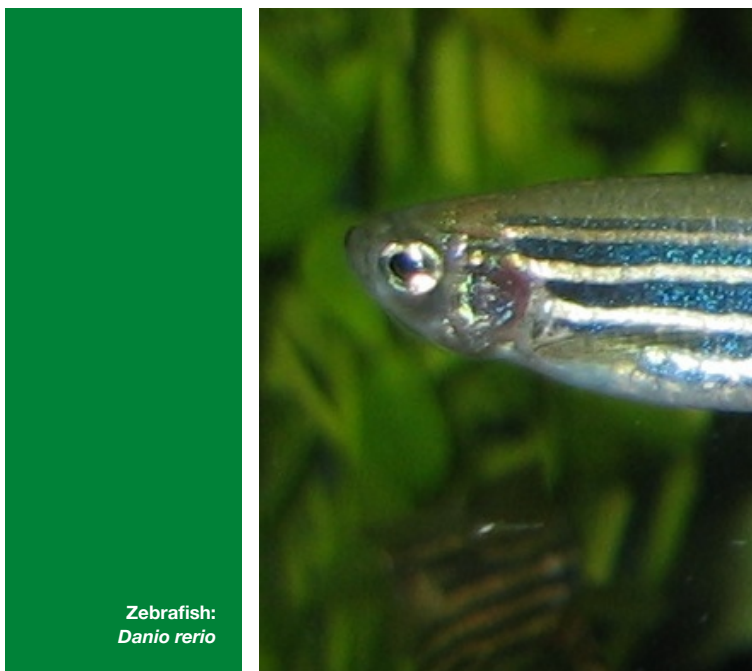
<http://www.f1000biology.com/article/id/1135931/evaluation>

powerful insight into QTLs contributing to traits of interest.

To date Floragenex has completed RAD sequencing applications in over 25 species, including Zebrafish, maize, cavefish, three-spined stickleback, soybean and a variety of other biologically and medically important organisms.

Interested in learning more? Contact our scientific team for more information:

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Zebrafish:
Danio rerio

Case Study: Meiotic Mapping (*Danio rerio*)

- ❑ Floragenex executed SNP discovery in two parental Zebrafish lines and followed that with RAD analysis of two bulked segregant populations to identify a region linked to a developmental defect.
- ❑ Using a medium density RAD scanning techniques Floragenex identified a window of 2.5 Mbp linked to the developmental defect.
- ❑ The region was later confirmed by the client. Further analysis of gene function is currently underway.