NEOGEN | illumina

GeneSeek® GGP whole-genome genotyping arrays.

Customized solutions for non-human organisms.

Collaborative innovation.

More accurate genotyping for breeding and selection.

Illumina, the leader in next-generation sequencing and array technology, has partnered with Neogen, a genomic solutions provider specializing in agriculture. Together, we offer a breadth of genotyping products for non-human organisms.

GeneSeek Genomic Profiler (GGP) arrays are customized solutions designed for single nucleotide polymorphism (SNP) profiling, marker-assisted selection, disease diagnostics, and identity management (high minor allele frequency [MAF]). Developed by leading agricultural researchers, GGP arrays use thousands of industry-validated SNP markers.

These specialty whole-genome arrays leverage Illumina Infinium® array technology and GeneSeek custom content to enable more accurate genotyping for selection and breeding, livestock, and model organism management. Our ready-to-use solutions are available in a variety of densities for bovine, porcine, mouse, equine, and potato.

GGP whole-genome genotyping arrays.

GGP bovine arrays: Accurately predict key traits, such as marbling and ribeye area.

GGP Bovine 150K Array

Featuring more than 134,000 SNPs for *Bos taurus* and *Bos indicus* breeds and an average marker spacing of ~20 kb with higher concentrations in telomeric regions, this array is ideal for genomic selection and imputation applications.

Array content includes:

- International Society for Animal Genetics (ISAG) parentage and flanking microsatellite imputation SNPs
- More than 100 SNPs with causative function for various cattle breeds

GGP *Bos Indicus* HD Array

Designed for parentage-, disease-, and trait-improvement applications, the high MAF SNP content of this array was selected based on thousands of screened *indicus* animals.

Array content includes:

- 74,000 SNPs for *Bos indicus* breeds
- Average marker spacing of ~35 kb

GGP Bovine LD Array

This array is designed for genome-wide bovine genotyping.

Array content includes:

- 26,000 SNPs for *Bos indicus* and *Bos taurus* breeds
- 100% overlap with the GGP Bovine 150K Array

GGP porcine arrays: Target desired breeding traits and genetic makeup, including disease predisposition.

GGP Porcine HD Array

This genome-wide porcine genotyping array is ideal for marker-assisted selection and prediction applications.

Array content includes:

- 70,000 SNPs for all major porcine breeds
- Average marker spacing of ~42 kb
- 20 key causative mutations

GGP Porcine LD Array

This array is designed for marker-assisted selection, Illumina PorcineSNP60 imputation, GGP Porcine HD imputation, and prediction applications.

Array content includes:

- More than 10,000 SNPs for all major porcine breeds
- Average marker spacing of ~250 kb
- ~20 important causative mutations

GGP mouse array: Discover a range of genomic genotyping solutions.

This genome-wide genotyping array enables marker-assisted selection and parentage applications.

Array content includes:

- More than 143,000 SNPs from 159 inbred lines
- Average marker spacing of ~22.5 kb

GGP equine array: Select desired breed traits and verify animal pedigree.

This array is designed for marker-assisted selection and parentage applications.

Array content includes:

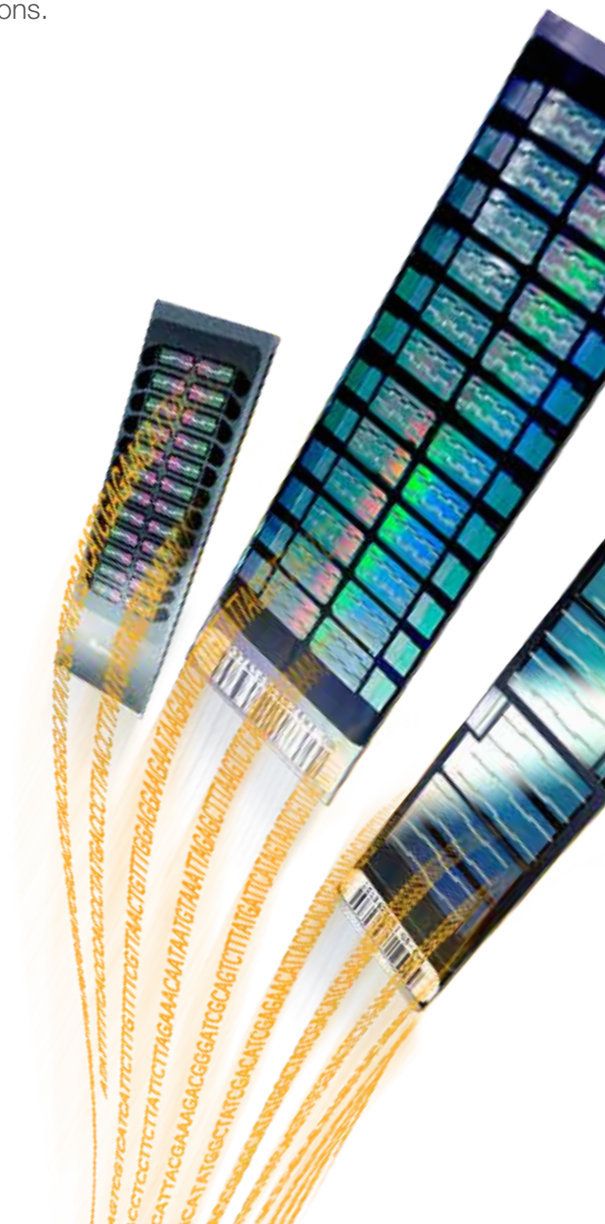
- More than 65,000 SNPs for major equine breeds
- Average marker spacing of ~35 kb

GGP potato array: Identify resistance regions with maximum coverage.

This array harnesses the power of Illumina chemistry to interrogate approximately 12,000 SNPs.

Array content includes:

- 7157 SNPs from the original GGP Potato LD Array with increased density in candidate and resistance regions
- ~3100 SNPs in candidate genes
- ~5000 SNPs for tetraploid genotyping



Industry-leading solutions.

A community of support.

From library prep, arrays, and sequencing to informatics, Illumina genomic solutions empower researchers and clinical researchers across the globe to find the answers they seek.

When you join the Illumina community, you become part of a dynamic scientific movement that includes thousands of researchers and industry thought leaders. Throughout the year, we host user group meetings, symposia, consortia, online forums, and other initiatives—all designed to bring the best minds together to share ideas and advance science.

In addition to on-site training, ongoing support, and phone consults, we offer webinars and courses at various Illumina locations. We're here with all the resources you need to accelerate progress.

Illumina offers GeneSeek Genomic Profiler (GGP) genotyping array products for non-human organisms through a co-agreement with Neogen.

For more information, contact your Illumina account manager or Illumina Inside Sales at 1.800.809.4566 toll-free (US), or visit **www.illumina.com/products/ggp-whole-genome-genotyping-arrays.html**.

A global genomics leader, Illumina provides complete next-generation sequencing workflow solutions to the basic and translational research communities. Illumina technology is responsible for generating more than 90% of the world's sequencing data.* Through collaborative innovation, Illumina is fueling groundbreaking advancements in the fields of oncology, reproductive health, genetic disease, microbiology, agriculture, and forensic science.

*Data calculations on file. Illumina, Inc., 2015.

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