

# Infinium® BovineLD v2.0 BeadChip

Extending genomic selection to the entire herd with cost-effective and scalable content.

Strong market demand has depleted the beadpool for the BovineLD v1.1 BeadChip, prompting Illumina to manufacture a new version of the product. To make sure that the transition between versions is as seamless as possible, the v2.0 array was manufactured to match the content and high data quality of the previous version. In addition, Illumina has enhanced the content of the v2.0 array with approximately 1025 SNPs that were not present on the BovineLD v1.1 BeadChip. These new markers include parentage SNPs, SNPs for microsatellite allele imputation, causative mutations, and milk protein polymorphisms.

## What are the principal differences between the 2 BovineLD BeadChips?

The BovineLD v2.0 BeadChip contains 99.91% of the SNP content present on the v1.1 array. Six SNPs from the v1.1 array are not available with the new version. However, the BovineLD v2.0 BeadChip contains 1025 additional SNPs that were not included on the v1.1 array. For approximately 3% of the variants common to both versions, the v2.0 BeadChip uses the Infinium assay designed on the opposite DNA strand relative to the v1.1 array, because it delivers superior analytical performance. Exporting calls from GenomeStudio® software using the "TOP" strand will ensure consistent nucleotide allele calls for downstream applications.

## Are there any changes in pricing?

No, the v1.1 and v2.0 arrays have the same pricing. As with the v1.1 BeadChip, the cost for Add-On Content is added to the base price of the array. Contact your local account manager or visit www.illumina.com to find out more about Add-On Content pricing.

## Are there new catalog numbers for the v2.0 BeadChip?

Yes. Table 1 lists the new catalog numbers for the BovineLD v2.0 BeadChip and the BovineLD v2.0 BeadChip with Add-On Content (BovineLD v2.0+ BeadChip).

Table 1: BovineLD v2.0 BeadChip Ordering Information

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Product	Samples	Catalog No.
Infinium BovineLD v2.0 BeadChip	48	WG-451-2001
	288	WG-451-2002
	1152	WG-451-2003
Infinium BovineLD v2.0+ BeadChip (with Add-On Content)	48	WG-451-2011
	288	WG-451-2012
	1152	WG-451-2013

#### When does the BovineLD v2.0 BeadChip begin shipping?

The BovineLD v2.0 BeadChip begins shipping in April 2015.

#### Will the v1.1 product files (cluster file and manifest) work for the v2.0 arrays?

No, the v1.1 files will not work with the v2.0 BeadChips and vice versa. New cluster (.egt), manifest (.bpm), marker list (.csv), and product definition (.xml) files are available for the new v2.0 array. All product files can be accessed via the Illumina website.

#### Does Illumina recommend using the standard cluster file with the BovineLD v2.0 BeadChip?

Illumina recommends using the provided cluster file as a reference. Customers are encouraged to analyze and cluster their samples as appropriate to maximize call rates. Review the Infinium Genotyping Data Analysis Technical Note for guidelines about how to use GenomeStudio software to create the optimal cluster file for your population.<sup>1</sup>

#### How do I merge data from the two different versions?

After clustering the data from each version independently in GenomeStudio software, export genotype calls in A/B format and merge them for downstream analysis. Analysis can be performed using open-source applications such as PLINK.<sup>2</sup>

## Is it possible to cluster and merge v1.1 and v2.0 data sets within GenomeStudio software?

No. Projects that span the two versions must be clustered independently in GenomeStudio software and then exported and merged outside of GenomeStudio software. Illumina recommends exporting data in A/B format.

#### Will Illumina manufacture additional versions beyond the v2.0 BeadChip in the future?

Illumina has built the beadpool for the v2.0 BeadChip to meet current and forecasted demands of the market. If future demand warrants it, the manufacture of additional versions might be necessary.

# What if the v2.0 array does not represent my loci of interest?

The base content of the BovineLD v2.0 BeadChip was created using the v1.1 specifications. The v2.0 array contains 99.91% of the SNPs on the v1.1 array. In the unlikely event that there are loci of interest that are not represented on the v2.0 BeadChip, customers can cost-effectively add them onto the BeadChip with Add-On Content.

#### How much Add-On Content will be allowed on the v2.0 BeadChip?

The BovineLD v2.0 BeadChip can accommodate 90,000 beadtypes on the substrate, ie, room for 80,000 beadtypes of Add-On Content in addition to the 7931 beadtypes of base content.

#### References

- 1. Illumina (2010) Infinium Genotyping Data Analysis. (www.illumina.com/documents/products/technotes/technote\_infinium\_genotyping\_data\_analysis.pdf)
- 2. PLINK: Whole genome data analysis toolset (pngu.mgh.harvard.edu/~purcell/plink) Accessed 06 February 2015.

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