

Figure 2: Two-Channel SBS Imaging. Accelerated detection of all 4 DNA bases is performed on the MiniSeq and NextSeq Series Systems using only 2 images to capture red and green filter wavelength bands. A bases will be present in both images (yellow cluster), C bases in red only, T bases in green only, and G bases in neither.

SBS Accuracy and System Compatibility

Illumina SBS-based sequencing systems deliver the most accurate sequencing data at any coverage, the highest yield of error-free reads, and the highest percentage of base calls above Q30* in the industry, even in difficult-to-sequence regions of the genome (Figure 3). This high data quality results in low false positive and false negative rates, reducing the need for extensive downstream validation and giving researchers full confidence in the data generated for their genome, exome, and transcriptome studies. Because all Illumina sequencing systems are based on the same core SBS technology, researchers can confidently transition their research from one Illumina sequencing system to another (Figure 4). Regardless of whether data are generated by a 4-channel or 2-channel SBS system, results can be seamlessly compared and analyzed in BaseSpace®, the Illumina genomics computing environment, or across a wide array of third-party analysis tools

Summary

Illumina SBS technology offers the highest NGS accuracy, enabling accurate base-by-base sequencing and robust performance across the genome. The latest evolution of this transformational technology can be found in the MiniSeq and NextSeq Series Systems, where it enables a breakthrough reduction in data generation times, enabling next-generation sequencing to become an everyday research tool.

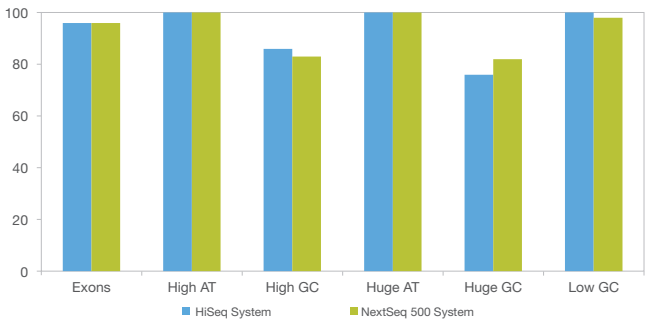


Figure 3: Coverage in Hard-to-Sequence Regions. Designed using the same fundamental sequencing chemistry technology, NextSeq, and HiSeq Systems exhibit robust performance in difficult-to-sequence regions of the genome.

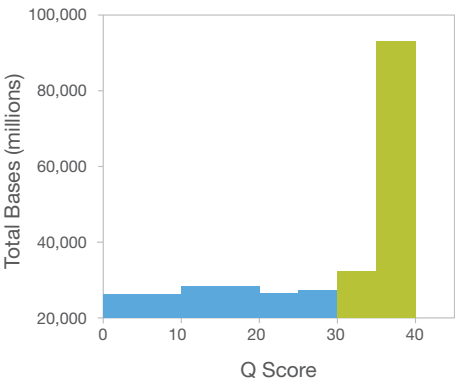


Figure 4: Base Call Accuracy and Performance. Two-channel SBS technology enables the NextSeq 500 System to deliver high-quality data, with a sequencing accuracy of > 75% of sequenced bases over Q30 at 2 × 150 bp.

References

1. www.illumina.com/systems/nextseq-sequencer/technology.html

* Q30 = 1 error in 1,000 base calls or an accuracy of 99.9%