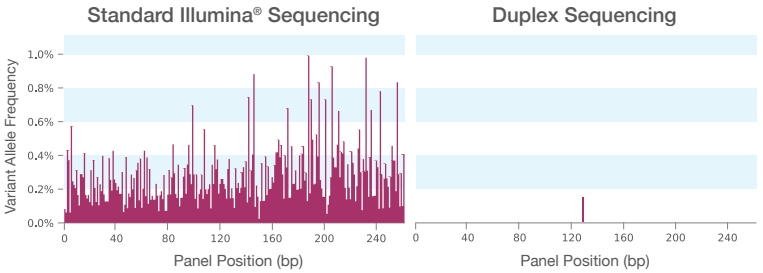
TwinStrand Duplex Sequencing™ Technology

TWINSTRAND BIOSCIENCES

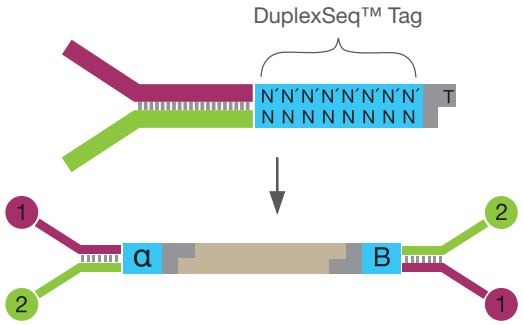
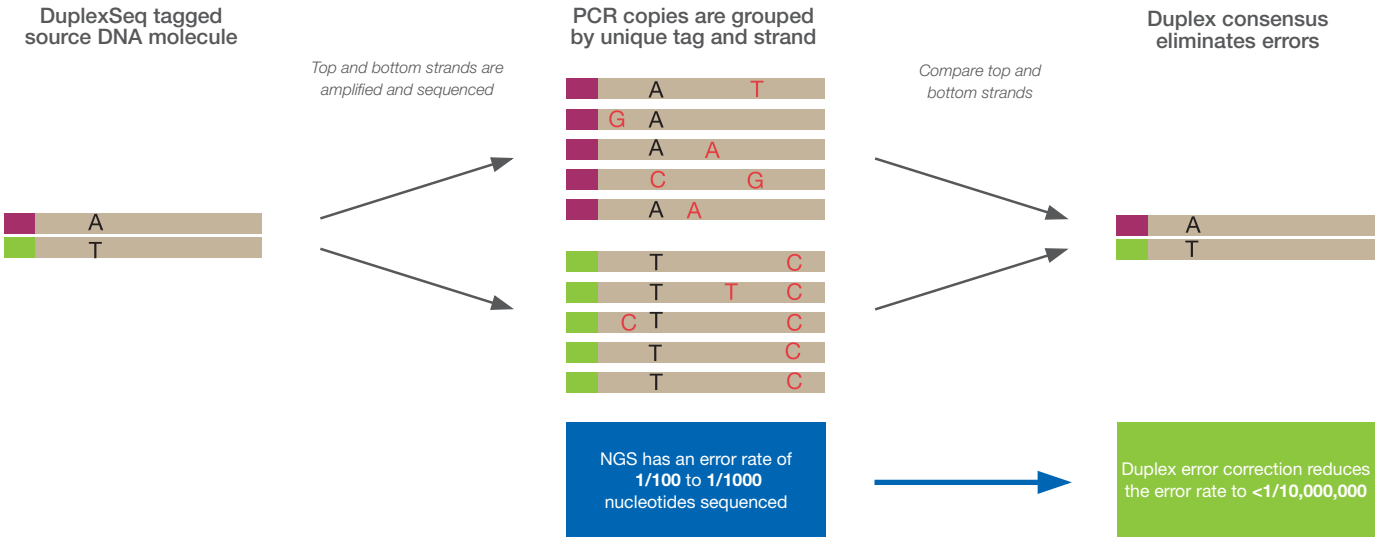
Duplex sequencing is an ultra-high accuracy sequencing method that overcomes the limitations of Next-Generation Sequencing (NGS) by independently tracking both strands of individual DNA molecules. The paired sequences are compared to eliminate errors.

Duplex Sequencing Reveals True Mutations

- > 10,000-fold increase in accuracy over standard NGS
- Eliminates virtually all background errors, revealing ultra-low frequency variants
- Compatible with any Illumina® sequencer
- Easy to adopt with no special equipment needed



The same gene sequenced by standard Illumina sequencing (left) and with duplex sequencing (right). With conventional methods, every position in the gene appears mutated in 0.1-1% of molecules sequenced. Duplex sequencing eliminates the background noise, revealing the previously hidden true mutation.

Duplex Sequencing Eliminates Technical Noise

- Duplex sequencing capitalizes on the naturally-occurring complementarity between strands of the DNA double-helix
- Each strand of each original molecule is uniquely labelled such that both can be tracked throughout amplification and sequencing for subsequent error correction