

# Long-read solution for short-read sequencers

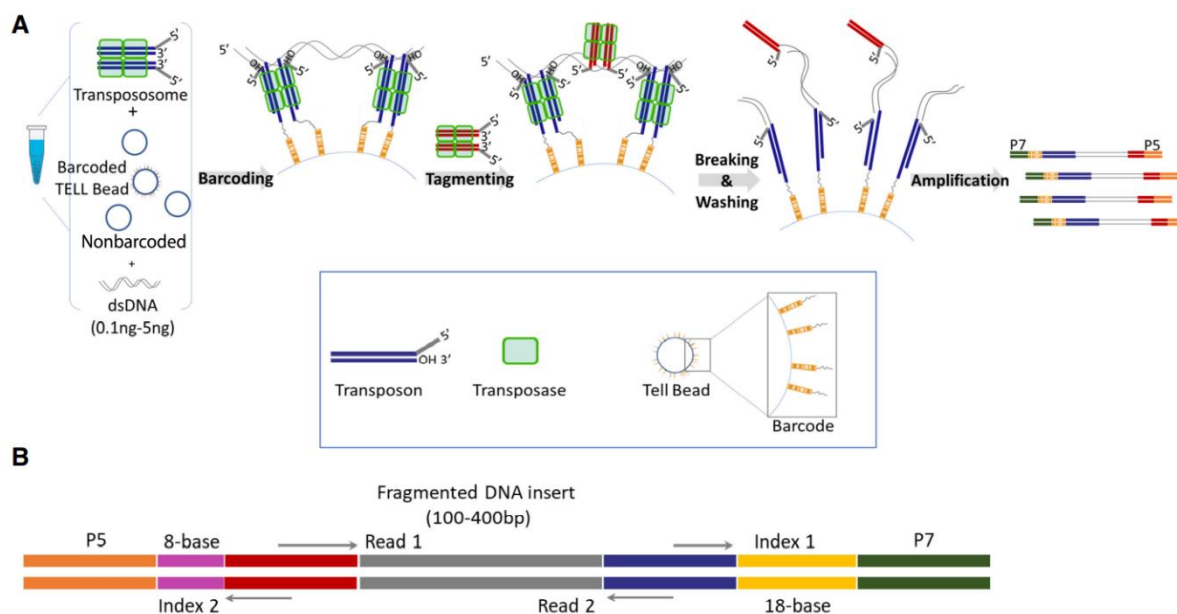
IAB offers a cost-effective and reliable long-read sequencing based on proprietary [TELL-Seq technology](#) invented for short-read sequencers.

## Introduction

Massive demand for long-read sequencing motivated Universal Sequencing to develop an affordable solution compatible with Illumina SBS sequencing technology that provides the most cost-effective sequencing. Combined with the TELL-Seq WGS library preparation kit, [Illumina sequencers](#) have become long-read sequencers providing the most cost-efficient long-read sequencing on the market.

## Methods

TELL-Seq ingenuity lies in the fragmentation step, which is considerably improved compared to traditional WGS protocols. The fragmentation takes place on the surface of barcoded beads, where a transposase incorporates the artificial barcode into the inserts. This way, the information about the origin of a single DNA strand is captured and later used for the reliable assembly of synthetic long reads.



These synthetic long reads are perfect for de novo assemblies, detecting structural variants, precise haplotype phasing, or preparing microbial metagenomes.

Except for the streamlined protocol that takes less than 4 hours, one of the main advantages over any other long-read technology is the minute required gDNA input. To achieve sufficient DNA isolate quality with DNA fragments of high integrity (HMW DNA), IAB recommends using [Bionano](#) isolation kits.

Genome Size	Input Amount	Reaction Vol ( $\mu$ L)	Preps/ Standard Size Kit	Preps/ HT24 Kit
1 Mb – 50 Mb	0.5 ng	22	12	72
50 Mb – 100 Mb	1 ng	22	12	72
100 Mb – 200 Mb	1.5 ng	22	12	72
200 Mb – 1 Gb	2 – 3 ng	44	6	36
1 Gb – 5 Gb	3 – 5 ng	66	4	24

## Conclusions

TELL-Seq WGS library preparation kit is suitable for any sample type with gDNA fragments over 50kbp. The unprecedentedly low input needed for successful library preparation makes it the perfect solution for every biologist in need of long-read sequencing. The combination of the TELL-Seq WGS library preparation kit and the [Bionano Optical Genome Mapping](#) delivers the ultimate solution for reliable and complete genome assemblies.