

## Recent patents in DNA sequencing

Patent number	Description	Assignee	Inventor	Date
US 9,890,425	Systems and methods for detecting genomic copy number changes, in particular, next-generation sequencing methods for detection of copy number changes.	Abbott Molecular (Des Plaines, IL, USA)	Domanus MH, Ho SY, Kim DH	2/13/2018
US 9,890,375	An isolated oligonucleotide and a use thereof in nucleic acid sequencing, wherein the isolated oligonucleotide comprises a first strand, wherein the 5'-end nucleotide of the first strand has a phosphate group, and the 3'-end nucleotide of the first strand is a dideoxynucleotide, and a second strand, wherein the 5'-end nucleotide of the second strand does not have a phosphate group, and the 3'-end nucleotide of the second strand is a dideoxynucleotide, wherein the first strand is longer than the second strand in length, and a double-stranded structure is formed between the first strand and the second strand.	BGI Shenzhen (Shenzhen, China)	Geng C, Ballinger DG, Zhang Yanyan, Fu S, He L, Zhang W, Jiang H	2/13/2018
US 9,889,449	Fully integrated microfluidic systems to perform nucleic acid analysis, including sample collection, nucleic acid extraction and purification, amplification, sequencing, and separation and detection. Also, optical detection systems and methods for separation and detection of biological molecules, in particular, the simultaneous separation and detection of a plurality of biological molecules, typically fluorescent dye-labeled nucleic acids, within one or a plurality of microfluidic chambers or channels. The systems and methods are particularly useful for DNA-fragment-sizing applications, such as human identification by genetic fingerprinting and DNA sequencing applications such as clinical diagnostics.	ANDE (Waltham, MA, USA)	Tan E, Lam HC, Bogdanov VL, Kellogg GJ, Wright JA, Thomann UH, Selden RF	2/13/2018
US 9,889,422	The localization of nucleic acids to arrays such as silane-free arrays, and of sequencing the nucleic acids localized thereby. In particular, the preparation of a hydrogel surface useful in the formation and manipulation of arrays of molecules, particularly polynucleotides and to the chemical modification of these and other arrays.	Illumina Cambridge (Little Chesterford, UK)	Smith MEB, Sabot A, Rasolonjatovo IMJ, Sohna Sohna J-E, Horgan AM, Swerdlow HP	2/13/2018
US 9,885,657	System and methods for analyzing single molecules and performing nucleic acid sequencing. An integrated device includes multiple pixels with sample wells configured to receive a sample, which when excited, emits radiation. The integrated device includes at least one waveguide configured to propagate excitation energy to the sample wells from a region of the integrated device configured to couple with an excitation energy source. A pixel may also include at least one element for directing the emission energy towards a sensor within the pixel. The system also includes an instrument that interfaces with the integrated device. The instrument may include an excitation energy source for providing excitation energy to the integrated device by coupling to an excitation energy coupling region of the integrated device.	Quantum-Si I (Guilford, CT, USA)	Rothberg JM, Kabiri A, Sickler JW, Gyarfas BJ, Lackey J, Schmid G, West LC, Fife KG, Cipriany B, Ghasemi F	2/6/2018
US 9,885,076	Methods, compositions, kits, systems and apparatus useful for multiplex PCR of one or more nucleic acids present in a sample. In particular, various target-specific primers are provided that allow for the selective amplification of one or more target sequences, e.g., target-specific primers useful for the selective amplification of one or more target sequences associated with cancer or inherited disease. Amplified target sequences obtained using the disclosed methods, kits, systems and apparatuses can be used in various downstream processes, including nucleic acid sequencing and used to detect the presence of genetic variants.	Life Technologies (Carlsbad, CA, USA)	Leamon J, Andersen M, Thornton M	2/6/2018
US 9,885,034	Methods, compositions, and kits for assays, many of which involve amplification reactions such as digital PCR or droplet digital PCR. The assays may be used for such applications as sequencing, copy number variation analysis, etc. In some cases, the assays involve subdividing a sample into multiple partitions (e.g., droplets) and merging the partitions with other partitions that comprise adaptors with barcodes.	Bio-Rad Laboratories (Hercules, CA, USA)	Saxonov S	2/6/2018
US 9,879,318	Methods and compositions useful for supplying high-throughput nucleic acid sequencing systems with templates. The methods circumvent the need for costly, labor-intensive cloning and cell culture methods and can be scaled to accommodate template production for a variety of sequencing applications, e.g., sequencing individuals' genomes, sequencing subpopulations of transcripts from a gene of interest, and/or gene expression profiling.	Pacific Biosciences of California (Menlo Park, CA, USA)	Vilfan I, Turner S	1/30/2018
US 9,879,309	Algorithms, computer readable media, computer programs, apparatus, and systems for determining the identity of nucleic acids in nucleotide sequences using, for example, data obtained from sequencing by synthesis methods. Methods include correcting one or more phenomena that are encountered during nucleotide sequencing, such as using sequencing by synthesis methods including sequence lead, sequence lag, spectral crosstalk, and noise resulting from variations in illumination and/or filter responses.	Intelligent Bio-Systems (Waltham, MA, USA)	Gordon S, Veatch PA, Olejnik J	1/30/2018

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