Becton Dickinson launches reagents to simplify single cell research

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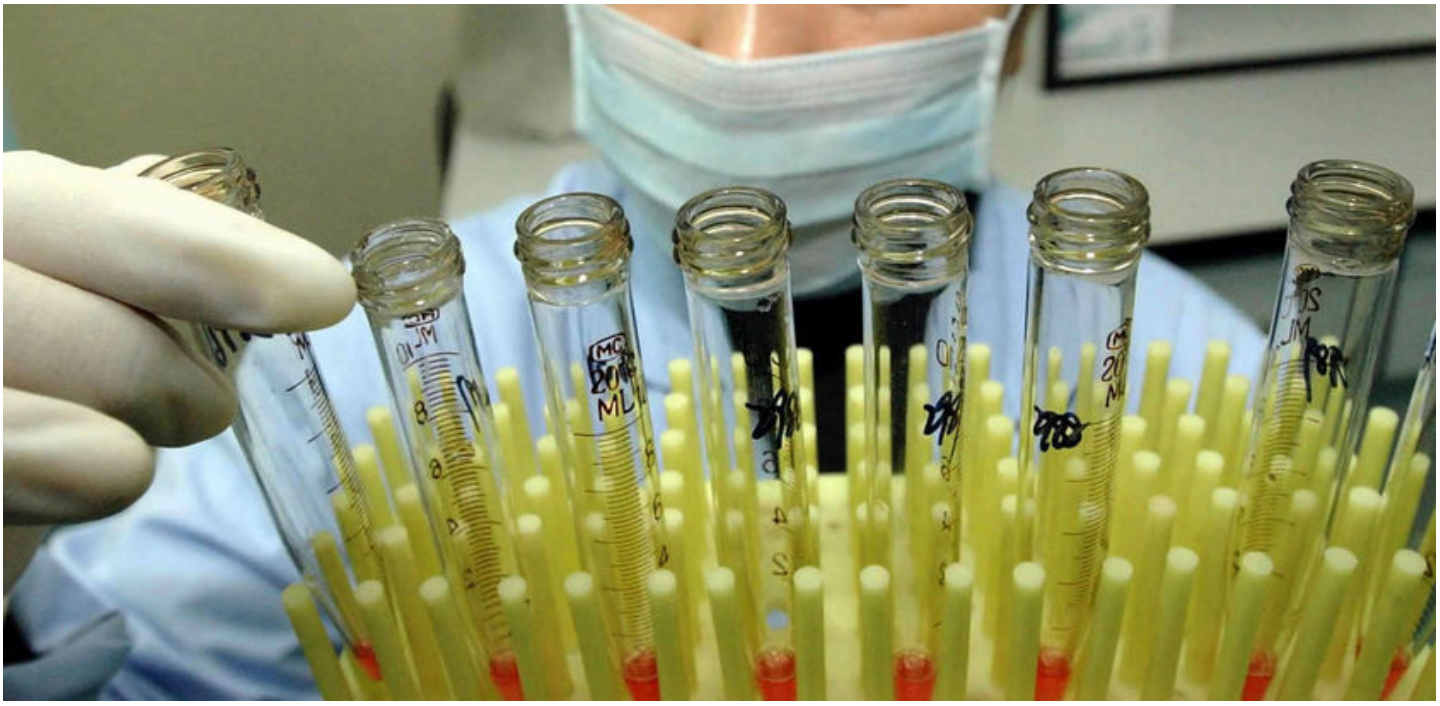

New Delhi: BD (Becton, Dickinson and Company), a leading global medical technology company, on February 19, 2017, announced the commercial availability of its new kits that provide an easier method to identify and quantify genetic information in individual cells for genomics-based research.

The process of whole transcriptome analysis (WTA) is typically used by researchers in the discovery phase to determine if an under- or over-expression of certain genes are indicative of a specific set of physical characteristics, or phenotype. Being able to quantify RNA molecules that comprise genes is a critical early stage process to determine what makes healthy cells different from diseased cells, for example, or to gain a greater understanding of the underlying causes of cell differentiation.

BD Precise WTA kits include specialized reagents that can extract RNA molecules from individual cells and then “tag” each molecule with a unique molecular signature or “molecular index” to enable researchers to count each individual instance of the molecule and attribute the molecule to a specific cell. BD has over 40 years of experience analyzing proteins expressed on cell surfaces through flow cytometry, which BD has paired with Precise WTA kits to create a breakthrough offering. With this innovative combination, BD is empowering researchers to overcome the inherent limitations of current technologies and discover new connections in cell biology.

“The BD Precise WTA kits provide researchers with more accurate and easy-to-use genomics tools to enable more efficient identification of genetic markers for disease,” said Stephen Gunstream, vice president of Genomics for BD. “The combination of our reagents, cell sorters and data analytics

enables BD to support researchers from sample preparation to end data analysis.”

Here’s how it works:

- A sample obtained from biopsy or other method is stained with dyes that attach antibodies to specific proteins on the surface of the cells in the sample;
- The sample is put into a cell sorter, also known as a flow cytometer, that can separate individual cells based on the color emitted from the dyes, which indicates specific proteins are present on the surface of the cell. BD Precise WTA reagents are optimized for use with the BD FACS line of flow cytometers;
- The individual cells leave the cell sorter and are deposited in one of 96 wells of a plate in the cell sorter that is pre-loaded with the BD Precise WTA reagents;
- The individual cells in the plate are immediately lysed, barcoded and further prepared for sequencing with BD Precise WTA reagents;
- The sequencing data is processed and analyzed by a proprietary analysis pipeline specific for RNA quantification for each cell analyzed.