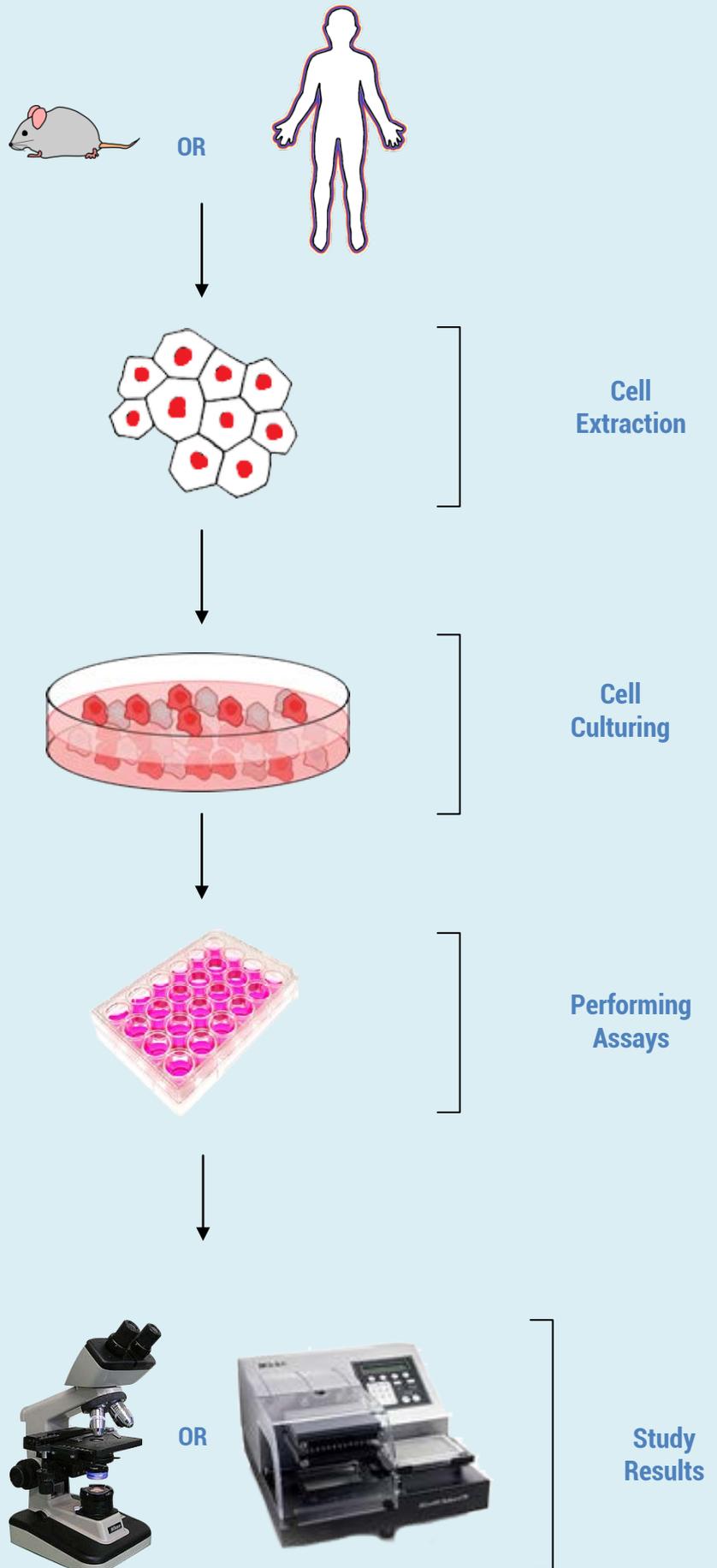


CELL BASED ASSAYS MARKET AND APPLICATION OVERVIEW

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CHAPTER OVERVIEW

- Cost of developing and achieving market approval for a prescription drug is around \$2.6bn
- Failure rates of pre-clinical candidates are higher
- Rising drug development costs companies are performing toxicology studies at an earlier stage
- 2 main classes of drug screening assays: *in vivo* assays (animal models) and *in vitro* assays (biochemical or cell-based assays)
- Live cells provide a better representation of human *in vivo* conditions
- Majority of cell-based assays currently rely on label-based assays using fluorescent or radioactive dyes to tag one or more target molecules
- Cell-based assays can be used for target validation, primary screening, secondary screening, ADME screening, high throughput screening



4. GLOBAL MARKET SEGMENTATION - BY SECTOR

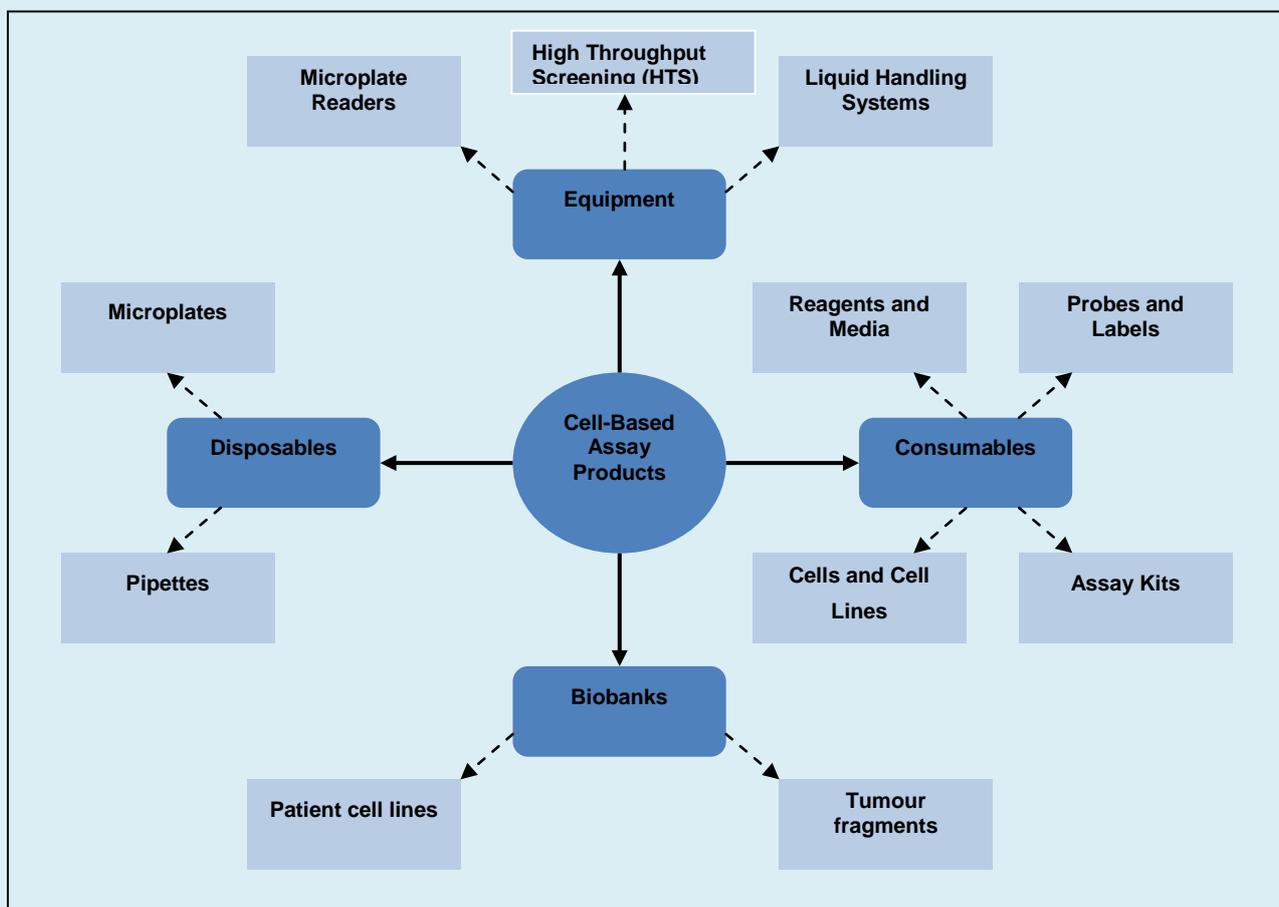
4.1 Cell-Based Assays Market Segments- Products and Services

The cell-based assays market can be broken down into two main categories – products and services.

1) Cell-Based Assays Market Segments: Products

DART has identified four main categories of cell-based assay products: equipment, disposables, consumables and biobanks (see Figure 12). These products are essential for the operation of cell-based assays and they are marketed to drug developers and academic researchers. The below sections provide more detail on each of these product categories.

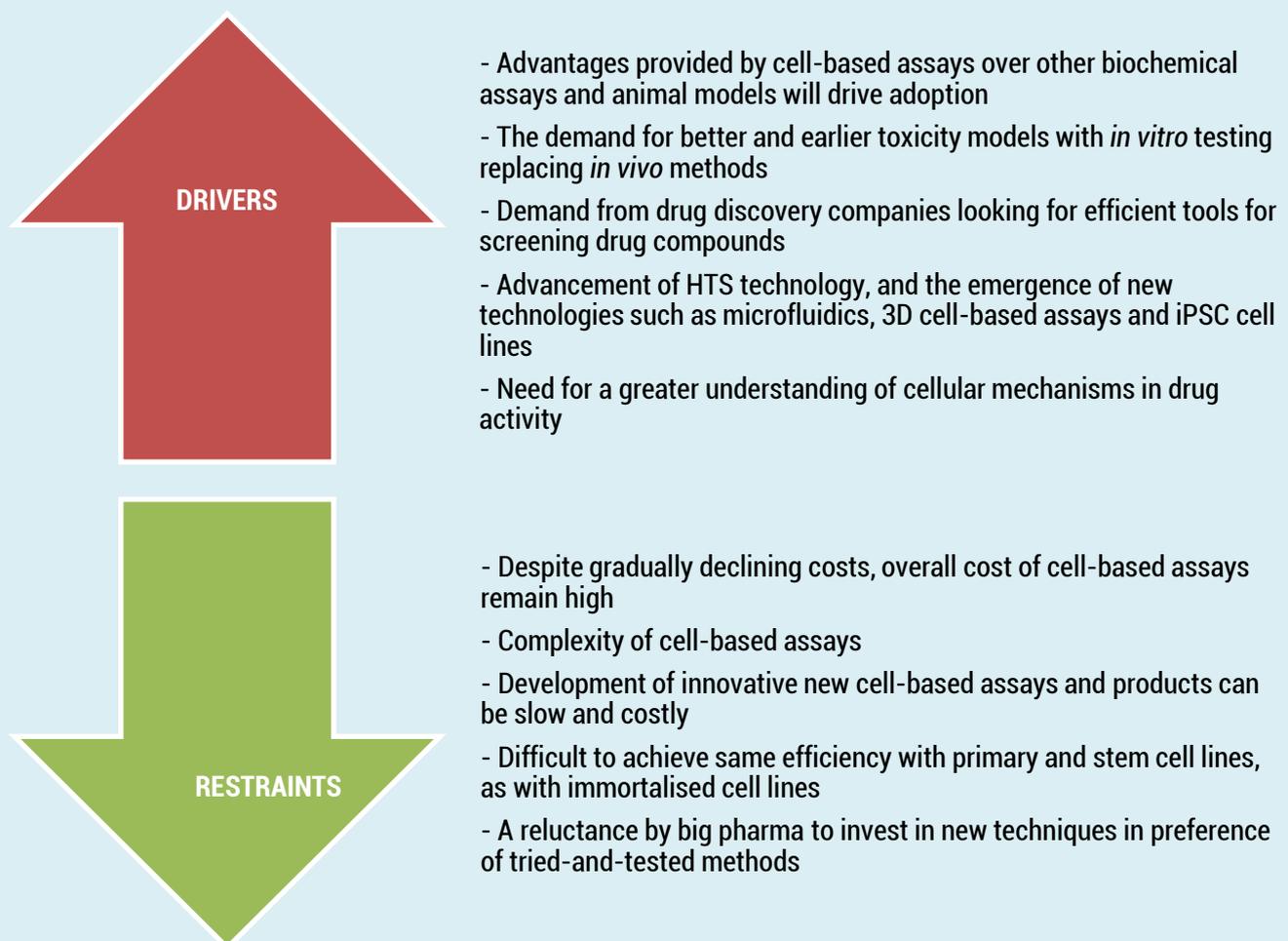
Figure 12: Cell-Based Assays Market Segmented by Application



Source: DART 2016

Researchers are shifting away from immortalised cell lines towards the use of primary cells and stem cells; however it is inherently difficult to achieve the same efficiency with these cell lines as with immortalised lines, and to optimise them for automation systems. Figure 36 summarises the drivers and restraints for the cell-based assays market.

Figure 36: Drivers and Restraints for the Cell-Based Assays Market, 2016



Source: DART 2016