

SCREENING MILLIONS OF DROPLET-COMPARTMENTALIZED SINGLE CELLS WITH XDROP®

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Here, we present novel technology that addresses the requirements for higher screening throughput, greater resolution, and easy cell recovery in molecular engineering. The Xdrop instrument and its Xdrop DE20 and DE50 Cartridges enable effortless compartmentalization of single bacterial, yeast, or mammalian cells into millions of double-emulsion droplets. The cells and media are loaded directly into the tubing-free microfluidic cartridges, which are loaded into the Xdrop. In just 15–45 minutes, millions of droplets are generated containing the living cells. Droplets are compatible with a range of buffers and growth media. Secreted compounds are retained within the droplets, allowing rapid build-up to detectable levels. If fluorescence-generating assays or biosensors are used, the droplets can be easily sorted on a standard fluorescence-based cell sorter or on the Xdrop Sort, which is a considerably faster, user-friendly instrument. Xdrop offers a uniquely high-throughput screening solution that transforms bulk into single-cell analyses. It also ensures that the most potent cells can be retrieved for expansion.