

## High-throughput screening on Microfluidic Lab-on-a-chip

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### ABSTRACT

Microfluidic lab-on-a-chip has enabled a new generation of assay technologies in biological and medical sciences. Miniaturized reaction and separation systems employed for chemical and biochemical analyses are now being applied to primary high-throughput screening for target validation and lead discovery in the pharmaceutical industry. Caliper's microfluidic lab-on-a-chip systems contain a network of microscopic channels through which fluids and chemicals are moved in order to perform experiments. The main advantages of these continuous-flow devices are integration of multiple steps in complex analytical procedures, diversity of application and sub-microliter consumption of reagents and sample. In addition, the automation involved is expected to improve the reproducibility of the results, and eliminated the manual labor, time and pipetting errors involved in analytical procedures. The present talk is devoted to give a brief introduction of microfluidic basics for lab-on-a-chip technology and to present progress in applying continuous-flow microchips to biological screening with model enzyme assays. Further, advantages and prospects for these systems are discussed.