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Flow cytometry for high-throughput, high-content screening

Bruce S Edwards ... Larry A Sklar

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Abstract

Flow cytometry is a mature platform for quantitative multi-parameter measurement of cell fluorescence. Recent innovations allow up to 30-fold faster serial processing of bulk cell samples. Homogeneous discrimination of free and cell-bound fluorescent probe eliminates wash steps to streamline sample processing. Compound screening throughput may be further enhanced by multiplexing of assays on color-coded bead or cell suspension arrays and by integrating computational techniques to create smaller, focused compound libraries. Novel bead-based assay systems allow studies of real-time interactions between solubilized receptors, ligands and molecular signaling components that recapitulate and extend measurements in intact cells. These new developments, and its broad usage, position flow cytometry as an attractive analysis platform for high-throughput, high-content biological testing and drug discovery.



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Abbreviations

Î²2AR, Î²2 adrenergic receptor; **FPR**, formyl peptide receptor; **GFP**, green fluorescent protein; **GPCR**, G-protein-coupled receptor; **HT**, high throughput; **VS**, virtual screening

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