

Bead-Based Assays Using COPAS™ Flow Sorting

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Assay miniaturization and multi-well plate logistics are a major focus in drug discovery for increasing assay capacity and throughput. By redesigning the assay format and matching the chemistry it is possible to dramatically increase the screening capacity.

Using solid phase combi-chem on beads, complex compound libraries can be created by simple split and mix synthesis. COPAS™ can be used for screening bead-based compound libraries.

With the COPAS™ flow sorter we are able to specifically detect and sort out beads from a large population. It can read blue, green, yellow and red labels used in today's fluorescent ligand or substrate binding assays. This non-invasive assay technology allows also for reuse of the bead library.

In a screening for glucosaminoglycan binding tripeptide structures NBD-Gly-D-Ala-D-Ala (6-(*N*-(7-nitrobenz-2-oxa-1,3-diazol-4-yl)amino)hexanoic acid) was used as bait. We identified and sorted positive beads from a tripod tripeptide library. The peptide sequences of the positive beads were analyzed with Edman degradation.

In conclusion, the COPAS™ system, combined with bead based compound libraries, offers a novel, ultra fast, non-invasive assay platform that extends the limits of high throughput screening.