Secondary Recovery Significantly Improves Screening Quality of Fragment Libraries

Primary Screening Quality Increased Up To 384% - Dose Response Values Also Improved

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At the opening bell of the Society for Biomecular Sciences (SBS) 16th Annual Conference & Exhibition in Phoenix, Microsonic Systems Inc. ("Microsonics") announced that its HENDRIX SM100 Ultrasonic Fluid Processor ("HENDRIX SM100") significantly improves fragment-based drug screening quality by re-solubilizing precipitated samples back into solution.

Recent data shows that by adding the HENDRIX SM100 to the fragment-based drug discovery process, researchers are able to re-solubilize precipitated fragment libraries and consequently "recover" the originally "lost" samples. This process both increases the sample concentrations and improves the accuracy of screening results.

"Using Lateral Ultrasonic Thrust™ technology to solubilize, thaw, mix and suspend is proving to be a highly effective tool to increase screening yields," stated Bruce Jamieson, Senior Vice President of Sales & Marketing. "In fact, our customers have told us that by virtually eliminating precipitates from their compound libraries, the HENDRIX SM100 is allowing them to screen a significantly higher proportion of their compounds than they would have been able to otherwise, a process we are calling 'secondary recovery.'"

Microsonics will be presenting a poster at the SBS conference titled "Improve the Integrity of Your Fragment Library for Fragment-Based Drug Discovery". The poster reports experimental data that shows that, compared to the control group, the secondary recovery process increases primary screening activity by up to 384%, and by as much as two logs of concentration reduction in fragment IC_{50} values.

Fragment-based drug discovery (FBDD) is gaining recognition for its many advantages over high-throughput screening, including better hit-to-lead rates and broad chemical space for possible compound scaffolds. Due to the low affinity of fragments for biological targets, fragment libraries may contain weak hits, requiring screening concentrations as high as 200mM. Although many fragments are soluble in DMSO, environmental shocks introduced by DMSO hydration or repeat freeze/thaw cycles can cause precipitation, and consequently affect the accuracy of FBDD screening results. Using the HENDRIX SM100, precipitates can now be recovered across an entire microplate or tube rack simultaneously in just a few minutes.

About the HENDRIX SM100 Ultrasonic Fluid Processor

Originally launched as a microplate mixer, the HENDRIX SM100 has been enhanced to cover a wider range of applications and to satisfy market demands for higher throughput in sample preparation and fluid processing. Combining the Company's proprietary lateral ultrasonic thrust™ (LUT) technology and the unique design of the FASA array, the HENDRIX SM100 enables rapid compound solubilization and reduces the hours-long process to minutes. The HENDRIX SM100 can also thaw frozen samples in a matter of minutes; this new use of ultrasonic technology will facilitate the possibility of on-demand sample retrieval. The HENDRIX SM100 can also suspend magnetic particles as well as live cells, which further expands its applications in Life Science to activities such as DNA extraction or isolation.

Since the 2009 Lab Automation conference, Microsonic Systems has made several product improvements to support a wide range of common labware – 96, 384 and 1536-well plates; flat bottom, U-bottom, V-bottom labware; 2D-barcoded tubes and scintillation vials. Software improvements now allow users to control the system in three distinct ways: through the system's front touch panel; with a graphical user interface; or by using an API that supports integrated environments.

About Microsonic Systems

Microsonic Systems Inc. develops acoustics-based micro-fluidics instruments based on a novel, patented technology that will significantly improve the accuracy and efficiency of research. The lateral ultrasonic thrust™ (LUT) technology, using a micro-electro-mechanical systems (MEMS) based transducer, creates bulk acoustic waves which prepare samples and processes fluids rapidly and homogenously. Founded in 2004, Microsonics shipped its first production unit in 2009 from its facility in San Jose, CA. For more information, visit www.microsonics.com or email Jean Shieh at jean.shieh@microsonics.com.