

Putting the pieces together

Biomolecular interaction analysis plays an important role in the pharmaceutical industry. SensiQ Technologies has optimized surface plasmon resonance technology for drug discovery applications, developing an automated system that can provide rapid affinity data for prompt identification of candidate fragment activities.



Tom Jobe, Chief Operating Officer,
SensiQ Technologies, Inc.

Early stage drug discovery is a numbers game, often requiring hundreds or thousands of compounds to be screened to identify potential drug candidates that interact with the therapeutic target of interest. Biomolecular interaction analysis (BIA) using label-free surface plasmon resonance (SPR) is regarded as the gold standard approach for the binding affinity and kinetic studies performed as part of this process. SensiQ Technologies, Inc. in Oklahoma City, USA, has developed a portfolio of label-free SPR devices for the life sciences market, enabling the generation of real-time data on the interactions between molecules. Tom Jobe, the company's Chief Operating Officer, explained: "SensiQ was founded 12 years ago, with a focus on developing new SPR-based tools for life scientists.

explore, as well as identifying technology partners we can collaborate with to move this field forward."

Over the past decade, SensiQ has established a broad range of SPR-based instruments to streamline BIA, including the SensiQ Pioneer family of fully automated benchtop systems. Tom continued: "We first introduced the Pioneer platform around six years ago and, over time, this system has been updated and enhanced, and new versions introduced for specific applications. We currently offer a choice of three systems, including the latest addition to the range, the Pioneer FE for fragment screening. This is a cutting-edge area of pharma research, where large libraries of protein fragments are used to create molecules so small that the body's immune system does not attack them.

“ It is this combination of pinpoint positioning accuracy and very high resolution liquid handling that has enabled us to create the extremely sensitive Pioneer FE system. ”

Our main market is pharma research, principally early stage drug discovery applications, where scientists are looking for molecules that fit together very well and could eventually be developed into novel therapeutics. We keep a very close eye on ongoing developments in this sector, using feedback from both our customers and key opinion leaders to enhance our products and develop new solutions that will streamline BIA studies. This helps us to decide which areas to

The Pioneer FE has been developed in collaboration with a leading biotech company to optimize this process; it's very much a case of fine-tuning our automated platform to offer superior throughput and sensitivity for binding affinity studies. The system uses our patented OneStep® gradient injection technology, which helps to accelerate library screening by uniquely offering the ability to determine full kinetics and affinity from a single SPR injection."

“When you design a new system, you have a choice between developing all the components in house, or using established OEM solutions. We considered the in-house option but, as OEM components that suited our needs were already available, it made more sense to go down this route. We looked at the various options available on the market, and the resolution and accuracy offered by the Tecan Cavro® range was very compelling. We looked to the Tecan team to recommend the most appropriate automation solutions for our purposes, and they suggested the Cavro Robotic Sample Processor (RSP) and Cavro Centris pumps. It is this set-up’s combination of pinpoint positioning

accuracy and very high resolution liquid handling that has enabled us to create the extremely sensitive Pioneer FE system.”

“With any OEM product, it is also vital that system support will be available for a long period, and Tecan’s history and reputation were definitely an advantage. The local Tecan team has been very supportive, and we have been able to work with Tecan on a number of innovations for SPR automation. This partnership has also given us greater insight into the direction markets and technology are taking, which helps to guide our next generation of instruments. Working with Tecan to plan where we are going next is very helpful,” Tom concluded.

To find out more about Tecan Cavro components, visit partnering.tecan.com

To learn more about SensiQ Technologies, go to www.sensiqtech.com



The Pioneer FE has been developed to simplify fragment analysis experiments