

A watchful eye on biosecurity

The Infinite® F500 is BioSentinel's reader of choice for its high sensitivity botulinum neurotoxin assays. Intended for government laboratory and pharmaceutical screening applications, BioSentinel now recommends the Infinite F500 to all its customers, thanks to the reader's combination of advanced features and competitive pricing.

BioSentinel Pharmaceuticals, based in Madison, Wisconsin, USA, was founded in 2007 to develop and commercialize rapid, high sensitivity assays for the detection of the botulinum neurotoxins (BoNT). These toxins block neurotransmitter release at the presynaptic terminal of nerves, and are commonly used in the medical and cosmetic

sectors, as well as having bioweapon potential. The Company offers a range of both biochemical and cell-based assays, which are used by the US Department of Defense for detection of bioterrorism agents, and by large pharmaceutical manufacturers for potency testing of BoNT-based drug products and substances.

Dr Ward Tucker, Director of Research and Development at BioSentinel, explained the Company's approach: "Our assay technology is designed to measure the proteolytic activity of BoNT down to the low picomolar or femtomolar range. Based on fluorescence detection, our assay uses a conjugated cyan fluorescent protein/yellow fluorescent protein (CFP/YFP) substrate which is cleaved by BoNT. In the absence of any toxin, excitation of the CFP results in fluorescence from the YFP due to FRET between the two domains. If BoNT is present in the sample, it cleaves the protein conjugate, leading to an increase in CFP fluorescence and a corresponding decrease in YFP fluorescence. By measuring the ratio between the CFP and YFP, we are able to accurately quantify BoNT activity. This mechanism of detection is highly sensitive, and the assay has been developed as both a biochemical assay, BoTest™, and a cell-based test, BoCell™."

"We initially developed the assay kits with a high end, monochromator-based reader, but we wanted a more cost-effective solution that we could recommend to customers using the assay for routine screening applications. Although the BoTest has fairly straightforward detection needs, the BoCell kit, like any adherent cell-based assay, has more complex testing requirements to ensure robust and consistent data. One of our primary requirements was a reader that could measure at multiple user-defined sites within each well, allowing us to compensate for natural variations in cell density across the well, as well as avoiding the areas where cells may have been displaced by pipetting."

"We tested microplate readers from several manufacturers, and the Infinite F500 from Tecan was clearly the best match for our

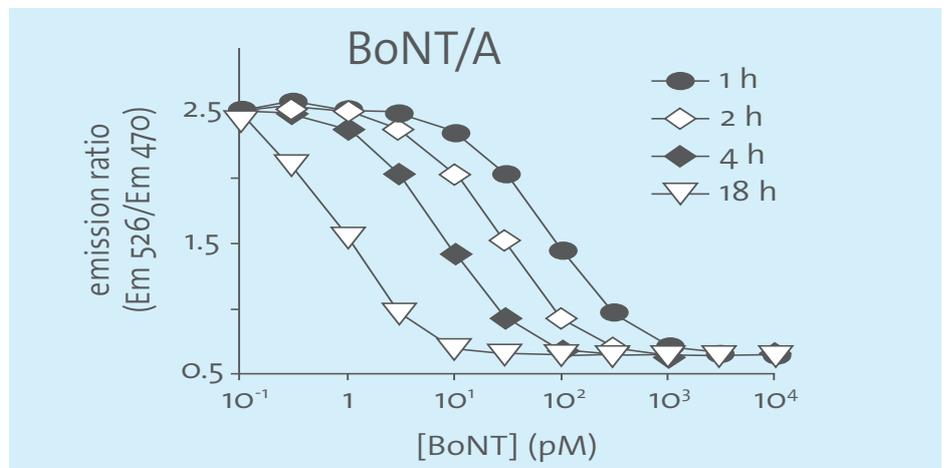


The Infinite F500 offers a high performance, cost-effective solution for BoTest and BoCell assays



needs. The standard filter sets are well-suited to our assay, and it offers us the flexibility to optimize the number and location of reads within the well. The Z-optimization feature is also a bonus, as this automated function ensures that the maximum signal intensity is achieved, further improving the sensitivity of our assay at low BoNT concentrations. We wanted a reader that we could recommend to customers who did not already have fluorescence detection capabilities, so it had to be cost-effective, but the quality of the data achieved using the Infinite F500 was also superior to the competitors' instruments for our assay kits. This, combined with Tecan's excellent reputation and the fact that several other molecular diagnostic companies recommend Tecan readers, made the Infinite F500 the logical choice."

"We are also very happy with the support we received from Tecan during the evaluation process. The Company's local representative took the time to understand our exact requirements, and provided us with a very good overview of the benefits of each



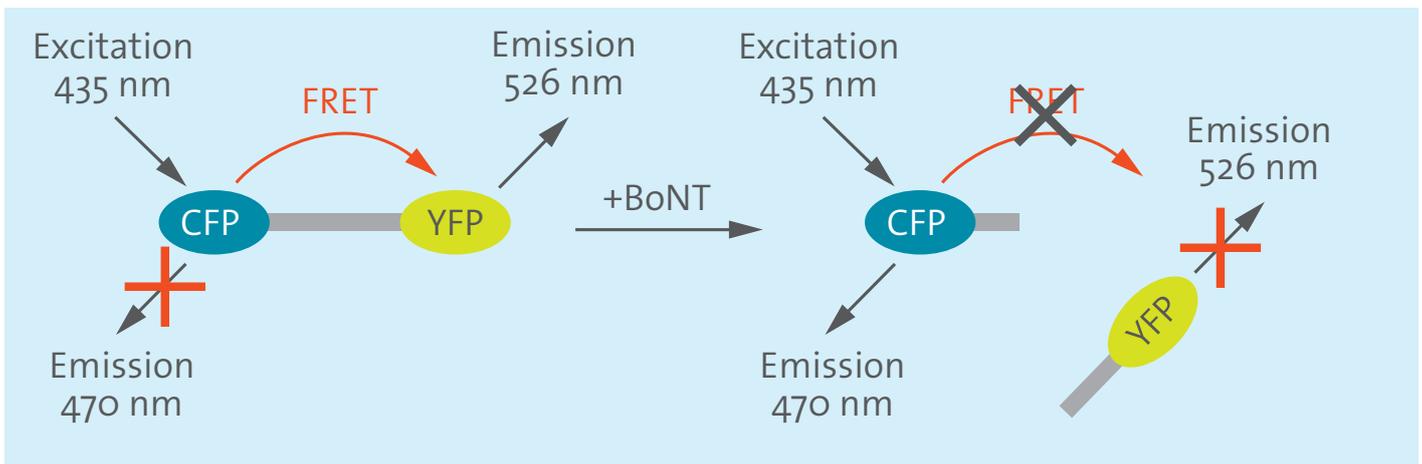
The BoTest assay allows detection of BoNT activity over time

Infinite series reader for our application. We were given the option to test multiple systems, which is very important, as we would not either purchase or recommend an instrument that we hadn't had the opportunity to test in routine operation. Since purchasing our instrument it has been in daily use by multiple users, and has proven both straightforward and reliable to operate. Although we use our own bespoke software to perform the data analysis, the

instrument's control software is certainly user-friendly; it is easy to set up and run protocols. The reader has also been reliable over the last couple of years, we've not had any issues in terms of functionality and it always performs exactly as we expect."

To find out more about Tecan's Infinite F500, visit www.tecan.com/infinitef500

To learn more about BioSentinel, visit www.biosentinelpharma.com



BioSentinel's FRET-based assay technology detects the proteolytic activity of BoNT using a cleavable CFP/YFP conjugate