

Transcript

[00:00:03] Well, BLI actually stands for biolayer interferometry. It is an optical detection technology based on thin film interference. So thin film interference is a very common phenomenon we see every day actually.

[00:00:22] And so I want to give you a very brief history about BLI technology.

[00:00:28] I founded FortéBio back in 2001. We invented BLI technology over there and we developed our first, very primitive BLI prototype to prove the concept in 2002.

[00:00:46] And then we commercialize the technology, launched Octet Instruments in 2006.

[00:00:54] I call this a period actually it's a... period for first generation BLI. We decided to come back into this field and we want to make much better BLI. And so this is the... beginning of the Gator.

[00:01:10] And... we call it next generation BLI and we want to improve the performance. We want to reduce the cost. We want to make everything much better than the first generation BLI, and we believe there are many new applications in the biopharma industry and also in diagnostics that can use our new technology here.

[00:01:32] And we launched our first instrument Gator and so that's really the... history of the BLI.

[00:01:40] Now the BLI actually is... built on this small device. Actually I have it over here. I don't know if you can see it in my hand. A very small device and we call it the probe. OK, in the center it is a 1mm diameter glass rod and it is... 20mm long.

[00:02:04] OK, so we build everything on this and at the very end, very tip end, we build our chemistry.

[00:02:14] So start with the probe. It's a glass rod. It can be different size, but the current model we use 1mm in diameter and we coat an optical layer on one end of this probe.

[00:02:29] And then on the optical layer, we build our surface chemistry. So that is our biosensor basically it's a very simple, very straightforward actually we make them in the millions every month.

[00:02:39] Well, so how it works, we shine the light, white light into the other end of the probe, and the photons will travel down the... probe to the... detection end.

[00:02:55] And then at the interface of the probe and the reflection beam... probe and the... optical layer, one reflection beam would go back, would reflect back.

[00:03:09] And at the interface of the surface chemistry and the ambient, there's a second reflection goes back. So these two reflection beams will interfere and create an interference pattern as I show here, it is a intensity of light at a certain wavelength. OK, so it's a... wavelength function.

[00:03:33] And we measure the peak of this interference pattern, OK. And the peak actually is our nanometer shift. OK, we use that to measure the... binding event of molecules. So we dip this probe into a well and then we have molecules bound to the surface and we measure the... peak change the... Lambda change, and the Lambda change can be converted into the shift so that is a binding curve real time binding curve. You can see that green curve that is our real time binding.

[00:04:11] And if we dip the... probe into the second molecule, and if the second molecule binds to the first molecule, then we can see the... binding curve again. Right, now if we strip off the second molecule from the surface, meaning dissociate the second molecule from the first molecule, then we can measure the so-called dissociation curve. OK, so we'll use this technology. We can measure kinetics in real time. Very simple, very easy, very straightforward.

[00:04:48] And we designed new optics and also we designed a new chemistry that gives us a much better performance than the previous generation BLI, right. And this first Gator instrument uses 96 well plates, standard 96 well plates, and it has eight channels. We can read 8 assays simultaneously in parallel.

[00:05:17] And it can read data at 10 Hertz, fast enough to measure small molecule reaction or fast on fast off activities.

[00:05:30] In addition, because we have a... we can put a 296 well plate in the system. So we expanded the... capacity of the instrument. So now you can run 168 quantitation assays per load, meaning each time you load the two plates, and you can run 168 assays, continuously.

[00:05:55] And, the best thing about this technology is... fluidics free, which means you don't have to, you don't need to worry about the... pipes, tubings,

valves and everything is in microtitre wells. OK, 96 wells. And so it's very easy. The instrument is literally plug and play.

[00:06:20] And Gator Plus can use 384 well plate and also 96 too and 384. It has four times more assays in one run. Basically you can extend the other walk away time, so 4X longer four times longer. OK, so you can set up an assay, walk away and come back, get the results, and then write a report.

[00:06:49] Very easy, very simple.

[00:06:51] Another advantage of Gator Plus is now you can do... good size of epitope binning application in one plate, so typically it's a 16 by 16. We can do 16 by 16 epitope binning very easily in a single plate setup.

[00:07:10] And... in addition to that, we know you know the... labs actually they are air conditioned, so sometimes in the summertime you have the... cooling system turned on, the temperature will drop a few degrees. In the winter time, your heater you know will kick kicking and the temperature will rise a few degrees.

[00:07:28] And so we want to minimize the ambient environment impact on our measurement. So we increased the... thermal shield on this machine. So we have... three times better thermal stability than... the Gator, the first Gator, and our competitors.

[00:07:47] Also we developed very powerful and very intuitive software to work with the technology, and people can use that to set up the assay, to run the assay, and analyze the results, and report the results for both quantitation and kinetics assays. And we are currently improving our software.

[00:08:09] And so we're going to have many new features, new functions adding to the software.

[00:08:16] This is our contact information, and we have a website but if you want more information you can write an e-mail to us. It's info@gatorbio.com or you can LinkedIn us. You know it's Gator Bio. OK. So thank you very much. That's my presentation for today.