

Azure Biosystems presents the only imaging system for all Western blot applications



Azure Biosystems is dedicated to designing instruments that can deliver industry-leading performance across a broad range of laboratory applications, without overcomplicating the user experience.

We have designed a suite of upgradeable cSeries instrumentation that gives researchers industry-leading performance in a flexible system that allows them to use the best application for their research. Our instrument product line culminates in the c600 system (Figure 1), and is the only imaging line on the market that combines the following features:

- Infrared laser excitation for quantitative Western blot imaging in the near IR
- Picogram detection of proteins with chemiluminescent Westerns
- Versatile dye selection with Cy[®]5/Cy3/Cy2 excitation, and more
- Fully upgradable from the base unit

Customers no longer have to choose one chemistry for their Western blots, they can buy one system and customize it to their needs.

Imaging in the Near IR

The popularity of near-infrared fluorescent (NIR) Western blot detection is due in part to the signal stability and low background offered by infrared fluorescent dyes, but more importantly to the additional questions you can ask with multiplex fluorescent detection. Azure Biosystem's cSeries laser technology offers two IR detection channels enabling a user to image more than one protein in an assay. Imaging with NIR dyes allows you to study multiple proteins in a blot, even if those proteins overlap in molecular weight. Because the secondary antibodies are imaged in two different channels, the resulting image can be spectrally separated for analysis (Figure 2). Additionally, you can use your second channel to easily probe for a loading control (Figure 3a).

Our laser technology enables sensitivity that meets the performance of other laser systems (Figure 3b).



Figure 1. Azure Biosystems c600 imager. The only system in the market able to image IR Western blots, RGB western blots and chemiluminescent blots. IR, RGB, and Chemiluminescent Western all in one, upgradeable, cutting edge system.

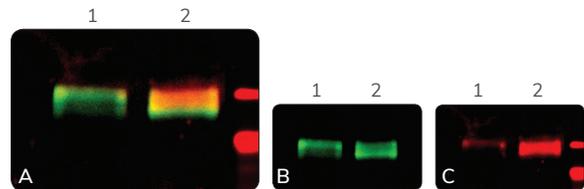


Figure 2. Simultaneous detection of EGFR and phospho-EGFR. Control cells (lane 1) and cells treated with EGF (lane 2) were imaged. EGFR was detected in the green channel (panel B), and phospho-EGFR was detected in the red channel (panel C). Panel A shows the green and red channels superimposed.

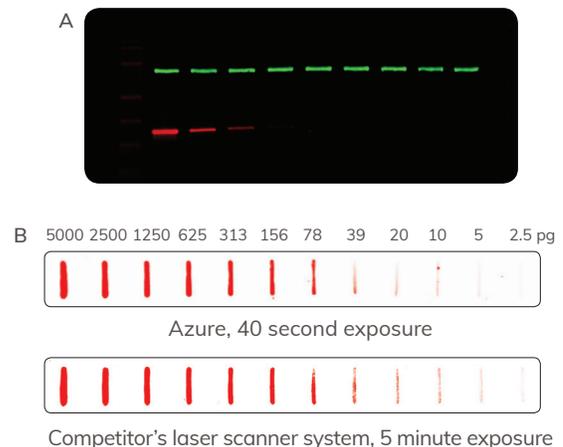


Figure 3. (a) Two color Western blot imaged with IR 700 and IR 800. (b) Azure performs equal to a competitor's laser scanner system, 7.5-times faster. A serial dilution of IR 700 antibody shows that the limit of detection is the same.

Sensitive Detection of Chemiluminescent Proteins

Chemiluminescence is still the most sensitive detection method for some assays. The Azure cSeries provides accurate and fast chemiluminescent detection, and as well as the sensitivity, dynamic range, and linearity needed for quantitative blot analysis. No matter what HRP substrate you are using, the Azure cSeries systems are compatible with your current protocol. Instead of using film and a developer, simply place your blot in the cSeries to get great results.

Using high resolution, F 0.95 fast lens technology, you can capture images with the same sensitivity as film (Figure 4a).

The biggest advantage to switching to digital imaging is the ability to get more quantitative data from your Western blots. Film saturates quickly, making it difficult to quantify high-abundance proteins. The Azure cSeries has a broad dynamic range allowing quantitation over several orders of magnitude of protein concentration (Figure 4b).

Versatile Dye Selection

The Azure cSeries is not limited to just NIR and chemiluminescent Westerns. The Azure cSeries instruments can also be equipped with powerful LEDs for Cy5/Cy3/Cy2 imaging or similar. The system also contains UV, white, and blue lights for imaging Ethidium bromide, Coomassie, and Safe dyes. The cSeries is also able to image a wide range of dyes that have excitation maxima from 302 nm to 785 nm. This enables WesternDots® and different types of in-gel fluorescence (Figure 5).

Azure cSeries

The Azure cSeries imagers are easy-to-use and reliable instruments for Western blot imaging, and enable labs to use one system for fluorescent and chemiluminescent Westerns. The simple user interface allows fast imaging of all sample types. Full upgradability means customers can have confidence that their system will grow and adapt with their needs.

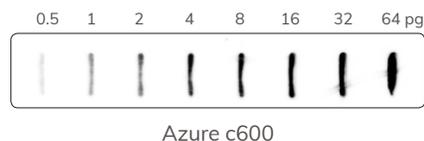
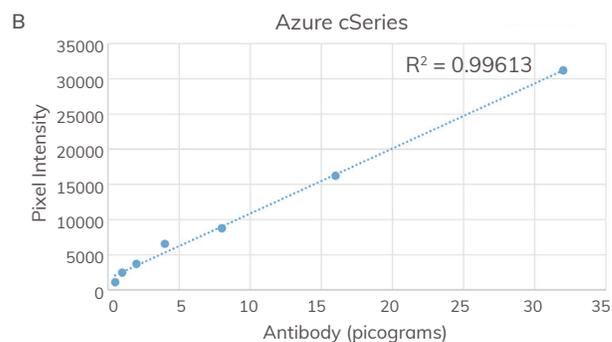
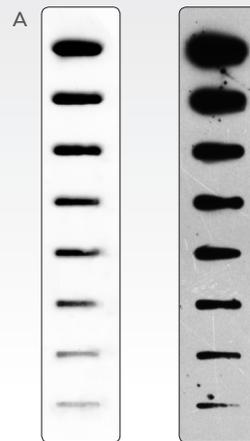


Figure 4. (a) Two slot blots of serially diluted HRP-coupled secondary antibodies were prepared on nitrocellulose. Both blots were treated with a substrate. Left: Imaged on the Azure cSeries for 2 minutes. Right: Imaged on film for 2 minutes. (b) Azure cSeries gives a linear response to a serial dilution of an HRP-coupled antibody.

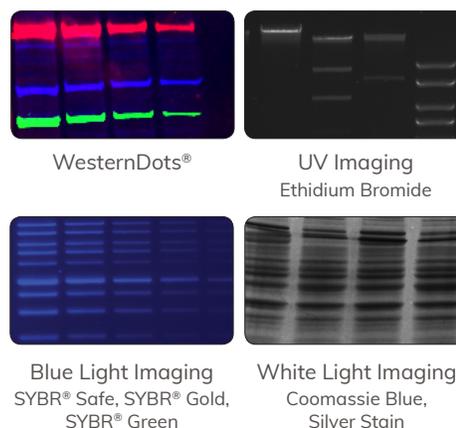


Figure 5. Application flexibility. The Azure c600 has 8 different light sources and a 7 position filter wheel, resulting in compatibility for the most critical dyes for protein work.