Stunningly easy western blot imaging

Introducing the iBright CL1000 and iBright FL1000 Imaging Systems.

Despite the rapid pace of technological advances in life science research, nucleic acid gels, protein gels, and western blots continue to be fundamental laboratory tools with the ability to move a project forward or push it in a whole new direction. The Invitrogen™ iBright™ Imaging Systems are high-performance instruments for capturing images and analyzing data from gels and blots. Designed with a streamlined intuitive interface and advanced automated features, the iBright systems are easy to use for researchers at all experience levels.

Figure 1. The iBright FL1000 Imaging System.

iBright CL1000 and iBright FL1000 Imaging Systems

Two iBright instruments are available: the iBright CL1000 system, for imaging and documenting chemiluminescent western blots and colorimetrically stained protein and nucleic acid gels, and the iBright FL1000 system (Figure 1), which features the same imaging modes as the iBright CL1000 system but also offers fluorescent gel and blot imaging capability using visible and near-IR excitation and emission channels (Table 1).

Advantages of the iBright Imaging Systems

- Powerful 9.1 megapixel cooled 16-bit CCD camera—for capturing crystal-clear images with robust imaging potential (Figure 2).
- Push-button optimized exposure with Invitrogen™ Smart Exposure™ technology—for rapid determination of optimal exposure times, minimizing the need to repeat exposures to get the desired signal.
- Advanced automated features—allowing hassle-free sample alignment, focus, and zoom, as well as automatic on-board data analysis for instantaneous lane and band identification and molecular weight marker overlay.
- Long-life green LED-based transilluminator—providing a light source that can effectively excite popular DNA dyes (e.g., ethidium bromide and Invitrogen™ SYBR™ Green dyes), without exposing users to harmful UV radiation.
- Cloud connectivity with Invitrogen™ iBright™ Analysis Software—enabling export and storage of data, as well as the ability to access, review, analyze, and share data through the web-based Thermo Fisher Cloud platform.
- Extensive service and support—from the on-site Invitrogen™ SmartStart™ orientation (included with every system) to our highly responsive technical and field support teams and comprehensive post-warranty service plans.

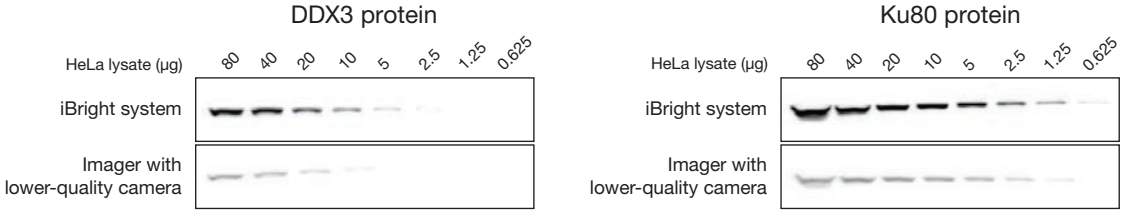

Figure 2. iBright Imaging Systems feature a powerful 9.1 megapixel camera for sensitive signal detection. Two-fold serial dilutions of HeLa cell lysate (starting at 80 µg/lane) were loaded and run on Invitrogen™ Novex™ Tris-glycine gels, transferred, and probed with antibodies against DDX3 or Ku80 protein. Blots were then probed with corresponding HRP-conjugated secondary antibodies, developed with Thermo Scientific™ SuperSignal™ West Pico PLUS Chemiluminescent Substrate (Cat. No. 34577), and visualized (using 10 sec exposures) on either the Invitrogen™ iBright™ FL1000 Imaging System or another imaging device with a lower-quality, 4.1 megapixel camera.

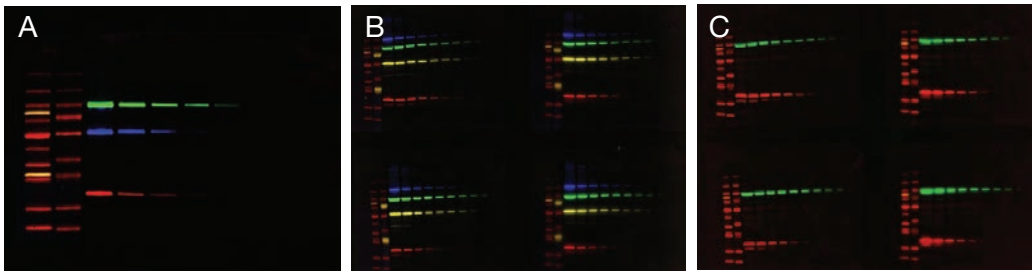

Figure 3. Multiplexed fluorescence western blots visualized using the iBright FL1000 Imaging System. **(A)** 3-color blot. **(B)** 4-color high-throughput image with 4 mini blots. **(C)** 2-color high-throughput image with 4 mini blots. Experimental details are available at **thermofisher.com/ibright**.

iBright FL1000 system for fluorescence applications

The iBright FL1000 Imaging System employs the same green LED-based transilluminator as the iBright CL1000 Imaging System, as well as two high-quality long-life epi-LEDs for fluorescence imaging applications. The broad-spectrum white epi-LED can be used to excite most green-, red-, and far-red–fluorescent dyes, including antibody conjugates labeled with Invitrogen™ Alexa Fluor™ and Alexa Fluor™ Plus dyes, Thermo Scientific™ DyLight™ dyes, and Invitrogen™ WesternDot™ dyes. The second epi-LED emits longer-wavelength light and is optimized for near-IR fluorophores such as Alexa Fluor 790 and Alexa Fluor Plus 800 dyes, DyLight 800 dye, and WesternDot 800 dye.

Light from these LED sources, in conjunction with both excitation and emission filters, enables many possible reagent options for nucleic acid gel, protein gel, and western blot imaging applications. The iBright FL1000 model features five fluorescence channels, three in the visible fluorescence range and two in the near-IR fluorescence range (Table 2). Up to four channels can be multiplexed simultaneously when imaging a single western blot or set of four mini blots (Figure 3). Multiplex western blotting allows the study of multiple proteins in a single blot, while also providing more accurate comparisons of experimental data and controls. Smart Exposure technology further improves acquisition of multiplex fluorescence western blot data because its advanced auto-exposure functionality can help to optimize signal-to-noise ratios for each fluorescence channel separately.

Product	Quantity	Cat. No.
iBright™ CL1000 Imaging System	1 system	A32749
iBright™ FL1000 Imaging System	1 system	A32752
iBright™ Prestained Protein Ladder	2 x 250 µL	LC5615

See the iBright Imaging Systems for yourself

To learn more about the iBright FL1000 and iBright CL1000 Imaging Systems and request an in-lab demonstration, visit **thermofisher.com/ibrightbp76**. There you can download the iBright Imaging Systems brochure, which shows a variety of data acquired and analyzed using the iBright systems, a list of dyes and stains compatible with the iBright imaging modes, and complete instrument specifications. Find out how these high-performance instruments can enhance gel and western blot analysis in your laboratory. ■

Table 1. Imaging modes of the iBright FL1000 and iBright CL1000 systems.

Imaging capability	What kind of signal can be captured?
Protein gel	Colorimetric staining of gels (e.g., Coomassie and silver stains) and membranes (e.g., Ponceau S and MemCode stains)
Nucleic acid gel	Ethidium bromide and SYBR dye staining
Chemiluminescent blot	Chemiluminescence detection using all popular horseradish peroxidase (HRP) and alkaline phosphatase (AP) substrates (e.g., SuperSignal and WesternBreeze substrates)
Fluorescent blot*	Fluorescence detection using RGB (visible range) and near-IR fluorophores (e.g., Alexa Fluor and Alexa Fluor Plus dyes and DyLight dyes)

*iBright FL1000 Imaging System only.

Table 2. Filter sets on the iBright FL100 Imaging System.

Excitation	Filter (nm)	Emission	Filter (nm)	Example of a compatible Alexa Fluor Plus dye
EX1	455–485	EM1	510–555	Alexa Fluor Plus 488
EX2	515–545	EM2	565–615	Alexa Fluor Plus 555
EX3	610–635	EM3	675–720	Alexa Fluor Plus 647
EX4	655–680	EM4	725–750	Alexa Fluor Plus 680
EX5	745–765	EM5	810–850	Alexa Fluor Plus 800