

X-Ray Film Processors for Blot Analysis

Although it is fast becoming a digital world, there is still a place for x-ray film processors in the world of blot analysis, specifically Western, Northern and Southern Blot techniques. The term "blotting" refers to the transfer of biological samples from a gel to a membrane, and their subsequent detection on the surface of the membrane. RNA, DNA, and Proteins are the three major macromolecules that are essential for all known forms of life, and blot techniques are used to identify their presence. Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) and Western blotting to detect proteins and glycoproteins is one of the most widely used and broadly useful techniques in cancer research.

The Northern Blot is an analytical technique used in molecular biology research to study gene expression through detection of RNA in a tissue sample. Northern blotting allows one to observe a particular gene's expression pattern between tissues, organs, developmental stages, environmental stress levels, pathogen infection, and over the course of a treatment protocol. The hybrid signals are detected by x-ray film and can be quantified by densitometry.

The Southern Blot is a technique routinely used in molecular biology for detection of a specific DNA sequence in DNA samples. After hybridization, excess probe is washed from the membrane and the pattern of hybridization is visualized on x-ray film by autoradiography in the case of a radioactive or fluorescent probe.

The Western Blot (also called the Protein Immunoblot) is a more widely used analytical technique used to detect specific proteins in the given sample of tissue homogenate or extract. The specific proteins are separated through electrophoresis by the use of labeled antibodies. This enables the identification of a target protein in a complex protein mixture. Western blotting can also produce qualitative and semi-quantitative data about the protein.

The most sensitive detection methods in Western Blot use a chemiluminescent substrate that will produce light when combined with the enzyme. The light is a transient product of the enzyme-substrate reaction and is measurable only as long as the reaction occurs. In well-optimized assays using proper antibody dilutions and sufficient substrate, the reaction may produce stable light output for 1 to 24 hours, allowing consistent and sensitive detection with x-ray film or digital imaging equipment.

X-Ray Film Processors for Blot Analysis (con.)

The light output can be captured using x-ray film or a CCD digital imaging system. X-ray film is the most sensitive method and can provide the most detail because x-ray film is more densely coated with photo-reactive molecules than a CCD digital imaging detector has photo sensors. In addition, the x-ray film is placed nearly in direct contact with the blot, separated only by a thin transparent plastic sheet, allowing more light photons to collide and interact with the film emulsion than with a CCD digital detector that may be located behind one or more focusing lenses. For these reasons, x-ray film exposure times are shorter than those required when using digital imaging equipment.

So despite a world that is becoming more digitized, x-ray film still has a place thanks to blot analysis which means x-ray film processors still have a place. FI Sales offers 2 models perfect for developing of blots.

The ECOMAX is a high quality, fully automatic x-ray film processor made by Protec in Germany. For low to medium volume x-ray film developing, the ECOMAX is a good fit. It is FDA approved and suitable for human use. The ECOMAX typically sells for about \$4000. It is available with an optional No Plumbing Kit and a Stand.

The OPTIMAX is also made by Protec in Germany, and has a few more features than the ECOMAX. For higher volume x-ray film processing, the OPTIMAX is recommended. It is FDA approved and suitable for human use. The ECOMAX typically sells for about \$5300. It is available with an optional No Plumbing Kit and a Stand.

Compare that price with the cost of a CCD digital imaging system that can run upwards of \$20,000. For about 20% of the cost of digital, you can have a reliable x-ray film processor.

Visit our [processor webpage](#) for more details on the ECOMAX and OPTIMAX x-ray film processors.

FI Sales, LLC
St Charles, IL USA
1-888-972-9777
Fax: 1-630-444-1381
info@fisalesllc.com
www.fisalesllc.com