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**The New Gold Standard:
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of immunogold labeling**

Article featured in *The Scientist* – Feb. 2, 2004

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Immunogold labeling is the method of choice for staining cell and tissue sections for electron microscopy, but the manual procedure involves a series of short wash-and-wait steps that can add up to an entire day of tedious bench work. Leica's new EM IGL automated immunogold labeling system, designed to improve the accuracy and reproducibility of biomedical experiments, solves this problem by automating most of the process.

The Leica EM IGL, which lists for \$ 16,000 (US), reduces the amount of labor needed and the time it takes for staining by 70–80%, giving technicians the opportunity to pursue more interesting tasks in the lab. "When you do [immunogold staining] by hand, basically you can't do anything else ... But with the machine, you load it and walk away for a few hours at a time," says Hong Yi, supervisor, Emory University School of Medicine Microscopy Core Facility. Yi's laboratory tested the system for on-grid labeling of pancreatic tissue samples using Aurion Ultrasmall colloidal gold conjugates followed by silver enhancement with Aurion R-gent SE-EM, and Yi says that it has provided good results. "I wish I had thought of the idea myself," she adds.

The system automatically moves preloaded 24-well slides to a holder containing nickel grids attached to a magnet. The samples are processed in a humidity-controlled environment, using one of 99 possible pre-set programs. "The set-up process takes only 1/2 hour, and up to 24 grids can be processed simultaneously," says Ann Korsen, product manager for Leica Microsystems.

The EM IGL can be used for cryo-ultrathin sections as well as sections of embedded samples, and can be used for routine staining or counterstaining, says Korsen. Yi notes that the initial set-up is a bit more complicated than the manual method because users must take special care to prevent contamination of the grids. Korsen says that contamination would only be a problem if the user overloaded the reagent tray or failed to clean the grids properly prior to the start of the run.

Korsen adds, "The amount of labor and time saved by the automated procedure more than offsets the half-hour preparation time and the EM IGL should make things simpler for those people who are interested in localizing proteins in cells, but decided not to because they lacked the time."

For more information:

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