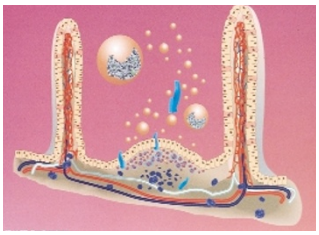
ON THE MARKET

NEEDLELESS VACCINE DELIVERY SYSTEM



Microsphere presentation to Peyer's patches in gut.

The Centre for Applied Microbiology and Research (CAMR) has developed a new **delivery system that allows DNA vaccines and immunotherapies to be administered without needles.** By using a microencapsulation process that produces small biodegradable spheres of poly (lactide-co-glycolide), the target molecule can be protected and transported directly to the immune system in the gut. The microspheres can be administered in a number of ways, including by nasal spray and orally. Moreover, the spheres have been designed so that they are of a size range that directly interacts with phagocytic cells, resulting in cellular delivery of the therapeutic. A range of different formulations are available, enabling the carrier to provide a variety of release profiles ranging from a few hours up to 45 days.

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IMPROVING YOUR IMAGE

Digital imaging and detection system.

Quantitative, **real-time chemiluminescence detection in a benchtop instrument** is now offered by the Kodak Digital Science Image Station 440CF. Available through NEN Life Science Products, the IS 440CF also performs fluorescence and chromogenic detection, densitometry and quantitative analysis, as well as general purpose imaging of a wide variety of sample types, such as membranes, gels and X-ray films. The system uses an electronically cooled, full-frame-capture CCD camera to visualize scientific samples such as gels, blots, bacterial plates and chromatograms using chemiluminescence, fluorescence, chemifluorescence and chromogenic detection methods. The company says that very low camera noise permits long integration times and linear data over a dynamic range approaching four orders of magnitude. The system is said to be as sensitive as X-ray film for most chemiluminescence reagents, and demonstrates fluorescence detection sensitivity on the order of picomoles to femtomoles per band on gels and blots. As images develop on-screen in real time, researchers can capture the image at its optimum stage. The image can then be quantitatively analyzed with Kodak's image analysis software.

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WHEN THE CHIPS ARE DOWN

LaVision's BioChipReader is designed to provide a sensitive and fast **read-out and evaluation system for biochips**. It incorporates an excitation source and optics, which allow the simultaneous excitation and efficient detection at different wavelengths. User-friendly software permits control of the device, chip read-out, data processing and analysis. The system can be customized both in terms of hardware and software. Stated applications include drug screening, sequencing by hybridization, cell screening and epitope mapping.

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AUTOMATED DNA PREPARATION

Molecular biologists looking for a **system to automate DNA purification** may be interested in Tecan's robotic sample processors, which can be customized with a magnetic bead separation option to take the strain out of DNA extraction. The RSP's liquid handling arm pipettes samples, magnetic beads and lysing solutions into tubes and plates. The DNA–bead complex is then washed at the magnetic separation station to remove proteins and other contaminants. The tubes are automatically moved away from the magnetic holders to allow resuspension and further washing. After purification, a releasing agent is added and clean DNA separates from the complex. An optional heating unit is available. As with all Tecan platforms, modules such as plate washers and incubators can be added, as well as microplate readers for checking the purity of extracted DNA.

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Biomek FX offers advanced automation for many DNA preparation functions.

At the recent Lab Automation 2000 show Beckman Coulter rolled out its new Biomek FX **nucleic acid preparation system**, a complete solution based on advanced liquid handling technology with validated methods and integrated chemistries and support. The capabilities of the liquid handling platform, including speed, deck size and dual pipetting modes, allow the automation of many DNA preparation functions. As part of the complete package, the company is automating a range of DNA chemistry kits through application development and partnerships, and can now offer customers pre-validated chemistries. The system offers three software 'wizards' that quickly create and program methods, eliminating complex programming tasks for the user. Methods are pre-set for plasmid purification, PCR and dye terminator cleanup and PCR reaction set-up. The system's flexibility also allows final method editing for customization. The software wizards create suggested labware configurations for each method. Software wizards automatically program the positioning of labware devices for each assay, including filtration stations, chillers, vacuum purification chambers and magnetic bead separators.

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