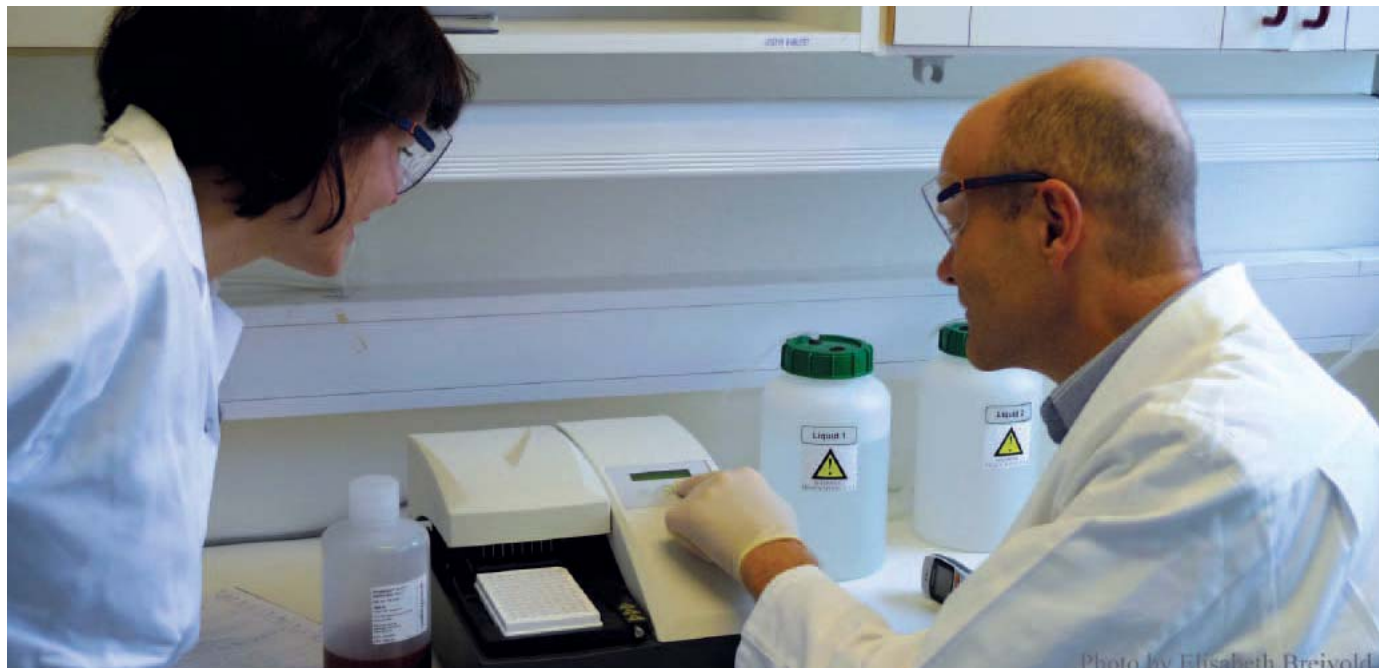


HydroFlex™ offers a helping hand for automated bead washing



Erling Finne and Ingrid Holm with the HydroFlex washer

(Photos courtesy of Elisabeth Breivold)

Scientists at Life Technologies' Dynal® facility in Oslo, Norway, are using Tecan's HydroFlex microplate washers in their R&D and QC departments for automated washing of Dynabeads® assays, reducing manual pipetting and improving consistency of results.

The use of magnetic beads as the solid phase for ELISAs offers several advantages over traditional direct coupling techniques, including shorter incubation times and improved sensitivity. These benefits have made magnetic bead-based technologies the gold standard for immunodiagnostic assays, as well as providing a versatile toolbox for researchers in academia and industry.

Life Technologies' Dynal division has been at the forefront of magnetic bead technology for over 20 years, and the Company's range of Dynabeads is used in hundreds of laboratories around the world. Development of the Dynabeads range is carried out at Life Technologies' dedicated Dynal facility in Oslo, Norway, allowing the Company to offer specialist support and services to customers, including customized development projects.

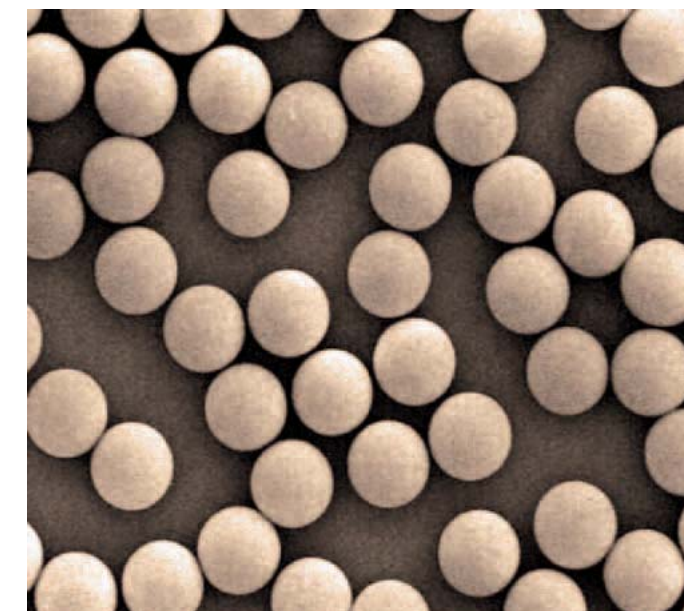
Ellen Kleveland, industrial product manager, described Dynal's work: "Although many established laboratories are already using Dynabeads, we work with various players in the *in vitro* diagnostics (IVD) sector, optimizing new bead-based assays to supersede existing immunoassays for improved consistency and sensitivity.

An important aspect of this work is assisting customers with adapting our assay protocols to their specific requirements and equipment, using our expertise to help them achieve greater throughput and reproducibility."

A major benefit of the Dynabeads technology is that it allows much higher throughput and better sensitivity than traditional approaches, where antibodies are coupled directly to the wells. Many IVD laboratories rely on automated platforms to help them achieve the high throughput capacities required, and Dynal is using HydroFlex microplate washers to automate washing for magnetic bead-based ELISAs. Erling Finne, principal scientist in the Research and Development laboratory, explained why they chose Tecan instruments: "Our involvement with Tecan actually began as a collaboration to develop a washing protocol for a customer. We worked with Gerald Habenbacher from Tecan Austria to co-develop a protocol using Dynabeads with the HydroFlex microplate washer, coming together to help the customer get the best results from automated ELISA washing. Once we had successfully optimized the customer's assay, we decided that we would



HydroFlex with smart-2 MBS magnetic carrier for bead washing



Magnetic Dynabeads technology allows much higher throughput and better sensitivity than traditional approaches, by coupling the beads to the antibodies.

benefit from having the same instrument in-house, for both method validation and to help with our own research projects."

"In the Research and Development department we typically run between two and four plates a day, with a lot of variation in the types of beads and samples in each plate, so our work is not suited to using large automated platforms. The HydroFlex washer fits well between these systems and manual techniques, allowing us to perform a wide variety of Dynabeads immunoassays in a 96-well microplate format, with minimal manual pipetting operations. This reduces the time taken to perform experiments, and helps to minimize inter-operator variability, which can introduce bias into our results."

The improved consistency and time savings offered by the HydroFlex washer in the Research and Development laboratory has led to the purchase of a second HydroFlex for the Quality Control (QC) department. Ingrid Holm is responsible for quality and method development, and explained the advantages of the HydroFlex for QC: "My role is to develop and validate new methods, particularly for our QC activities. Although

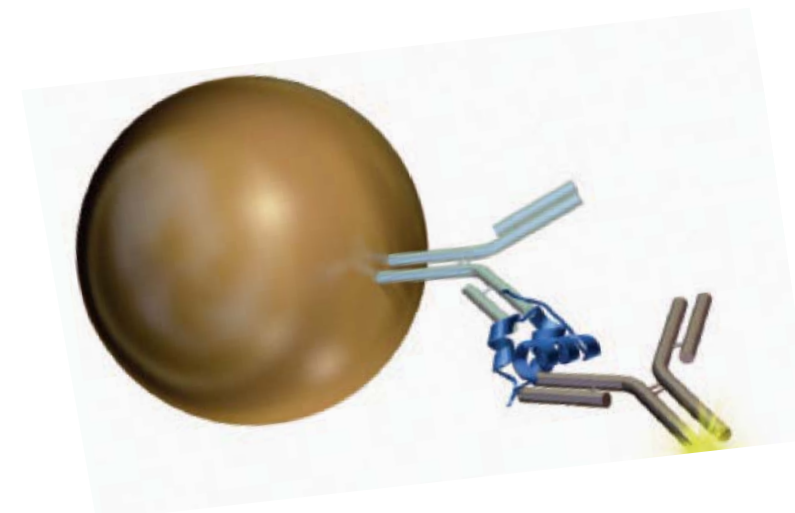
our laboratory already had good results using manual washing techniques, automated washing reduces the pressure on QC staff, and offers even greater consistency than manual methods. Although we have only transferred a few of our methods to the automated washing protocol so far, we are already seeing time saving benefits, allowing staff to concentrate on other tasks. We will certainly be adapting more of our methods to use the HydroFlex washer in the future, and

look forward to working with Tecan again, to develop new solutions for customers."

To find out more on Tecan's HydroFlex microplate washer, visit www.tecan.com/hydroflex

To find out more about Dynabeads, visit www.invitrogen.com/dynabeads

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Schematic illustration of a bead-based ELISA: the capture antibody is covalently attached to Dynabeads and the antigen detected on the solid phase using a labeled detection antibody.