

# Looking to Improve Your Proteomic Workflow?

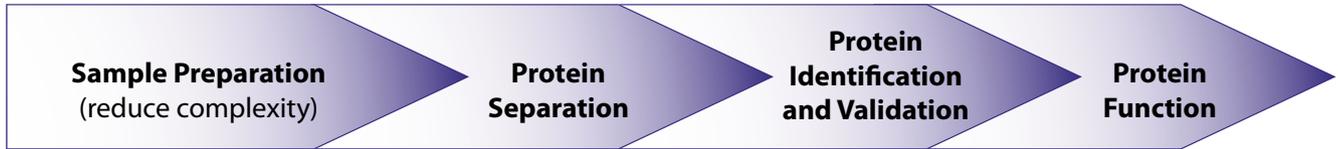


 invitrogen™

**DYNAL®**

invitrogen bead separations

# Proteomic Work



- Pre-fractionation
  - magnetic bead chromatography
- Enrichment
- Sub-proteomes
  - organelles
  - glycoproteome
  - phosphoproteome
  - peptidome

- Immunoprecipitation
- Specific protein capture

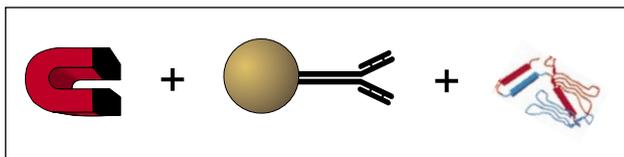
- Protein assays
- Bead ELISA
- Ligand fishing
- Sample prep pre-MS
  - desalting
  - concentration

- Protein interaction
- Protein pull-down
- Protein complexes
- Phage display panning
- Screening

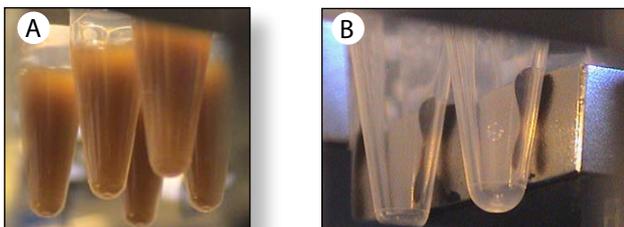
## Simply Magnetic

With Dynabeads® you can simplify protein handling and applications throughout your proteomic workflows.

Specific bio-reactive ligands on the surface of the beads will act as “bait” for the capture of specific molecules. Other beads have a surface ideal for fractionation of your protein/peptide sample. Simply add the beads to your sample, apply a magnet, and remove the supernatant containing unwanted components. The beads are left with bound target for optional elution, or used as a solid support for downstream studies.



Magnetic separation utilizes the affinity interactions between bead-bound ligands and their specific targets (e.g. proteins, peptides, enzymes, protein complexes or even cells and organelles). A wide range of Dynabeads® are available. The flexible and patented Dynabeads® technology also offers the possibility for custom-based product development to GMP quality standards.



The Dynabeads® handle like a liquid, can be pipetted and used in automated liquid handling systems. When incubated with the sample, your target molecules will bind to the beads (A). By applying a magnet, the beads with bound target are pulled to the side of the vial, and unbound material is removed (B).

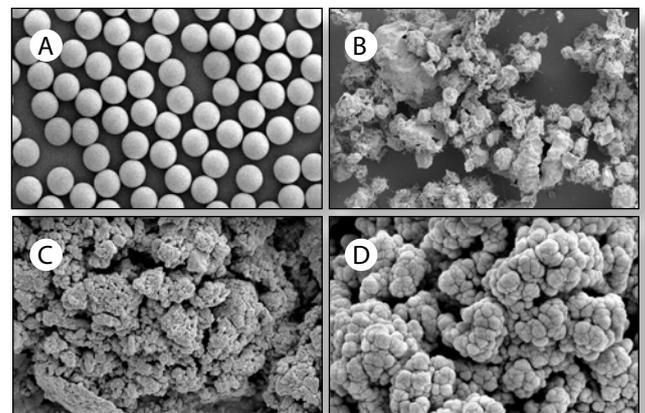
## In Proteomics Workflows

As shown above, the flexible Dynabeads® technology can be applied at many stages of your proteomic workflows. You can simplify your sample preparation and reduce sample complexity prior to mass spectrometry, e.g. in serum profiling and biomarker discovery.

The procedure is fast and robust, yet gentle enough to maintain structural integrity and function allowing high quality studies closer to the in vivo situation.

The technology is:

- **Easy and efficient**
- **Gentle and consistent**
- **Robust, flexible and scalable**
- **Well-suited for automated systems**



The truly uniform, monodisperse and superparamagnetic Dynabeads® are thoroughly characterized. They are manufactured with highly controllable product qualities, with a unique level of reproducibility within and between batches (A). Magnetic particles from alternative suppliers (B, C and D).

# flows Simplified

## Gentle and Efficient

Proteins are separated directly from your crude sample without preparative steps or dilution. The resulting pure and concentrated sample allows the detection of low abundance proteins or small changes in expression patterns.

- Fast reaction kinetics
- All in one tube
- Minimal sample loss
- Gentle on your target

## Unparalleled Reliability

The unique uniformity of size and surface area is not purely a cosmetic benefit. It allows for optimal accessibility and fast reaction kinetics, thus enabling rapid and effective capture – every time!

- Monosized and spherical
- Low non-specific binding
- Can be used in quantitative studies
- Superior level of reproducibility

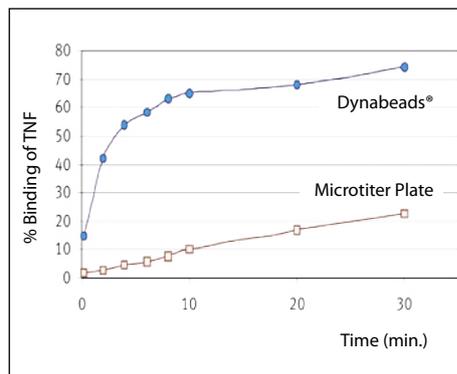
## Automation-Friendly

Dynabeads® flow like a liquid, and can be applied in very small volumes without any loss in sensitivity or reproducibility. Automated liquid handling allows you to cut down on sample handling, reagent costs and hands-on time.

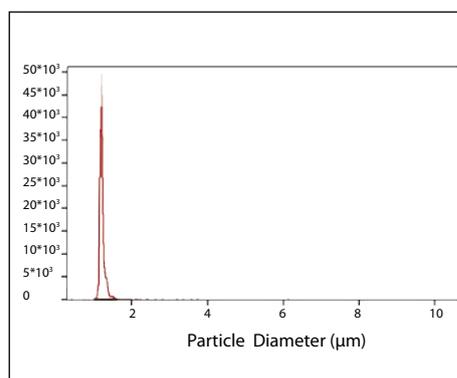
- Disperse evenly in solution
- Slow sedimentation-rate
- Uniform magnetic response
- Do not aggregate to trap impurities

## Working with Us

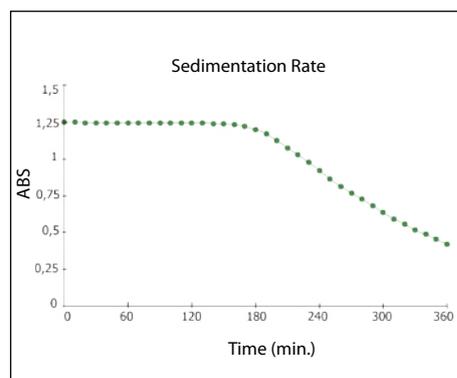
Collaboration and OEM-supply arrangements are established with a number of leading proteomics, biotech, pharmaceutical as well as diagnostics companies. Tell us your particular need, and we will work with you to help achieve your goals.



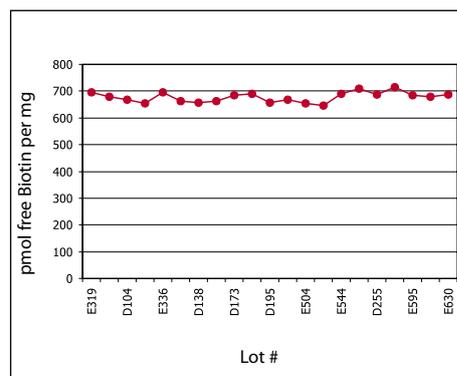
Dynabeads® technology is fast, gentle and less likely to damage your molecule of interest. As shown, the binding kinetics of Dynabeads® is superior to that of microtiterplates (% binding of TNF to immobilized antibody). Courtesy of N-B Liabakk, NUST, Norway.



All Dynabeads® have defined, controllable and consistent properties. The size distribution of 1 µm Dynabeads® confirms their monosized characteristics, as shown. All beads within one batch are equal, and the reproducibility across batches is unparalleled.



The uniform Dynabeads® disperse well in solution and sediment slowly, yet respond quickly to a magnetic field with an even pull towards the magnet. Their uniform homogenous fluid behavior makes them perfect for use in automated systems.



The unparalleled reproducibility across batches secures the reproducibility of your results. Shown here is the lot-to-lot variation of 21 successive batches of Dynabeads® M-280 Streptavidin. Stability programs document the high product stability for all products.

## Learn more about.....

### Dynabeads® for Magnetic Bead Chromatography

For reduction of sample complexity. Bead-based reversed phase chromatography and ion exchange allows efficient fractionation and desalting of mixed protein and peptide samples. Secures high recoveries in very small volumes, critical in biomarker discovery by mass spectrometry. Pick up the brochure: "Magnetic Bead Chromatography Product Line"



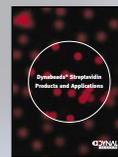
### Surface Activated Dynabeads®

For coupling of your specific ligand. These beads allow maximum flexibility for use in a wide range of affinity isolations and bioassays. For information on beads with dedicated surface functionality (e.g. tosyl, amino, epoxy or carboxylic acid), pick up the brochure: "Surface Activated Dynabeads®"



### Dynabeads® Pre-Coupled with Streptavidin

For capture of any biotinylated molecule. Flexible protocols for use in a wide range of applications. Pick up the brochure: "Dynabeads® Streptavidin, Products and Applications"



### Dynabeads® with Protein A / G or Secondary Antibodies

For purification of antibodies and small-scale immunoprecipitation of proteins. Pick up the brochure: "Dynabeads® for Immunoprecipitation"

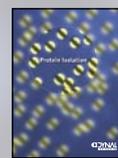


### Dynabeads® in Automated Protocols

The flexible Dynabeads® magnetic separation technology can be implemented on practically any type of liquid handling platform for low, medium or high-throughput sample preparation and downstream handling. Pick up the brochure: "... a new way of looking at automated handling"



Read more about the use of Dynabeads® in protein applications in the brochure: "Protein Isolation". Please also refer to [www.invitrogen.com/dynal](http://www.invitrogen.com/dynal)



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