

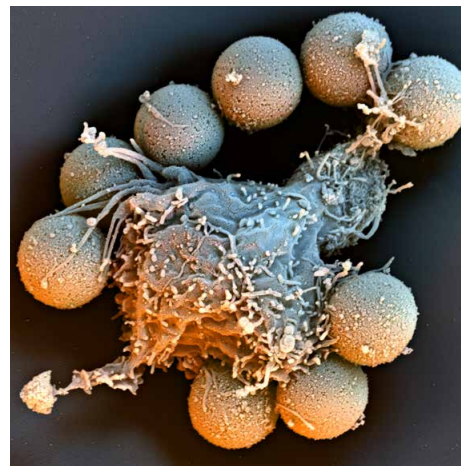
Sample prep

Dynabeads magnetic beads

Gentle, efficient separation of biological materials for when it matters most

invitrogen

Since the 1980s, Invitrogen™ Dynabeads™ technology has pioneered magnetic separation of biological materials. Today, Dynabeads products support a staggering range of applications within the life sciences, biotechnology, and healthcare. They continue to provide gentle and efficient separation, helping to ensure reliable and reproducible results.



That's why, when it matters most, scientists trust Dynabeads products for their research.

Flexible, proven technology

Widely used



Referenced in over 70,000 publications from research labs around the world

Unique manufacturing capabilities



The only bead manufacturer with truly monosized magnetic beads; ISO 13845-certified

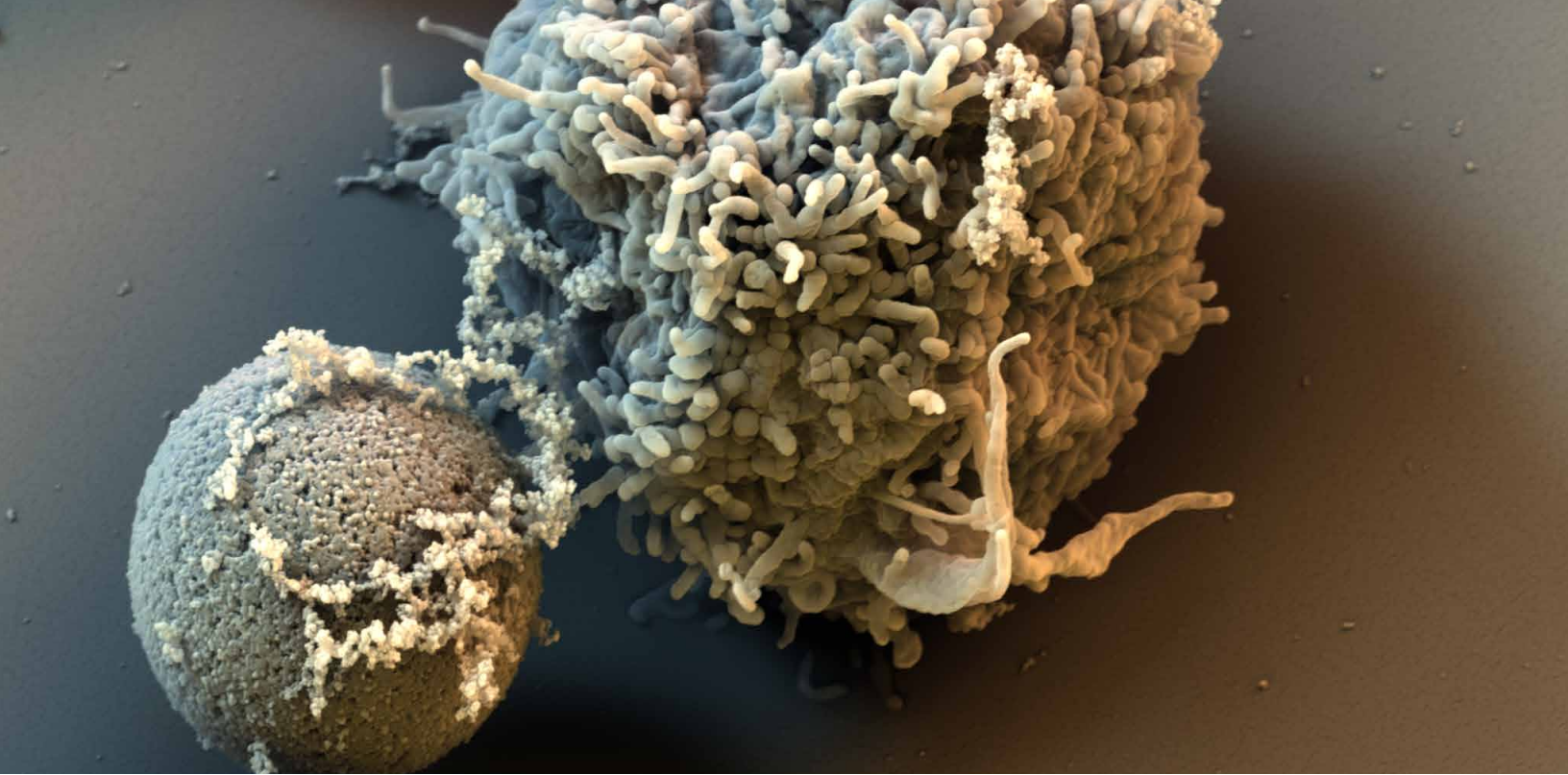
Recognized innovation



Winner of the 2017 Innovation Award from the Research Council of Norway and the 2017 Norwegian Tech Award

Why scientists trust Dynabeads products

Feature	Benefit
Magnetic bead separation	Gentle on cells, proteins, and nucleic acids, maintaining viability and sample integrity. No columns or centrifugation required.
Uniform bead size	Promotes consistent binding properties and highly reproducible results.
Spherical shape and defined surface chemistry	Minimizes aggregation and nonspecific binding.
Broad surface functionalities	Enables specific separation of multiple types of biological entities, ranging from molecules to cells.
Polymer shell	Protects the target from toxic exposure to iron, which is especially important for cell isolation and expansion.
Nonporous bead surface	Reduces nonspecific binding and quantity of reagents required for separation.
Superparamagnetic particles	Allows beads to be magnetic only in a magnetic field, with no residual magnetism once removed.



The bead you choose matters

Manufacturing

Our tightly controlled manufacturing processes produce magnetic beads of uniform shape and size, with highly defined and consistent product characteristics. By reducing particle variability, more reliable and reproducible results can be achieved.

Reproducibility

The level of reproducibility within and between batches of Invitrogen™ Dynabeads™ magnetic beads is unique. The same surface area is offered for each experiment, helping to ensure the best efficacy and reproducibility for your analysis. Inconsistent bead surfaces and sizes can trap unwanted molecules and compromise the quality and reproducibility of your results. Compare the uniform shape and size of Dynabeads products with magnetic particles from other suppliers (Figure 1).

Quality assurance

We audit our suppliers and are routinely audited by our customers, as well as by the FDA and the Norwegian Notified Body (Det Norske Veritas Certification AS). Our quality system complies with ISO 9001:2015 (quality management systems) and ISO 13485:2016 (quality management systems for medical devices and regulatory purposes). The quality system is based on customer requirements and describes quality assurance in design, development, production, and servicing. We are registered with the FDA, and class I products are listed with the FDA.

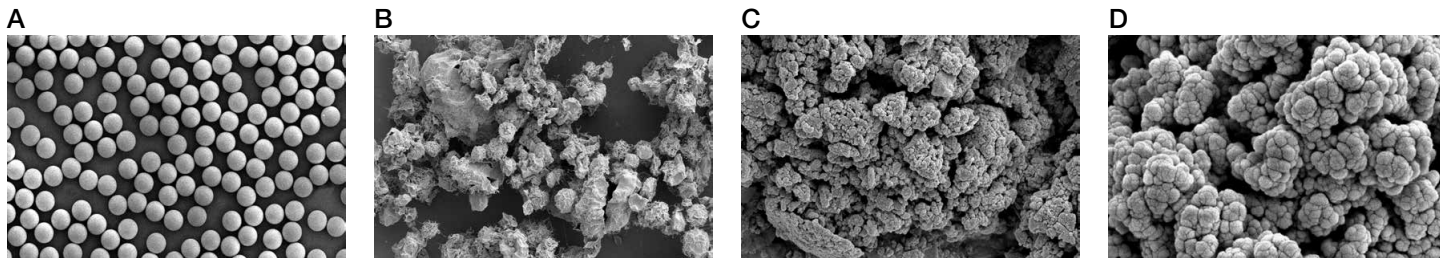
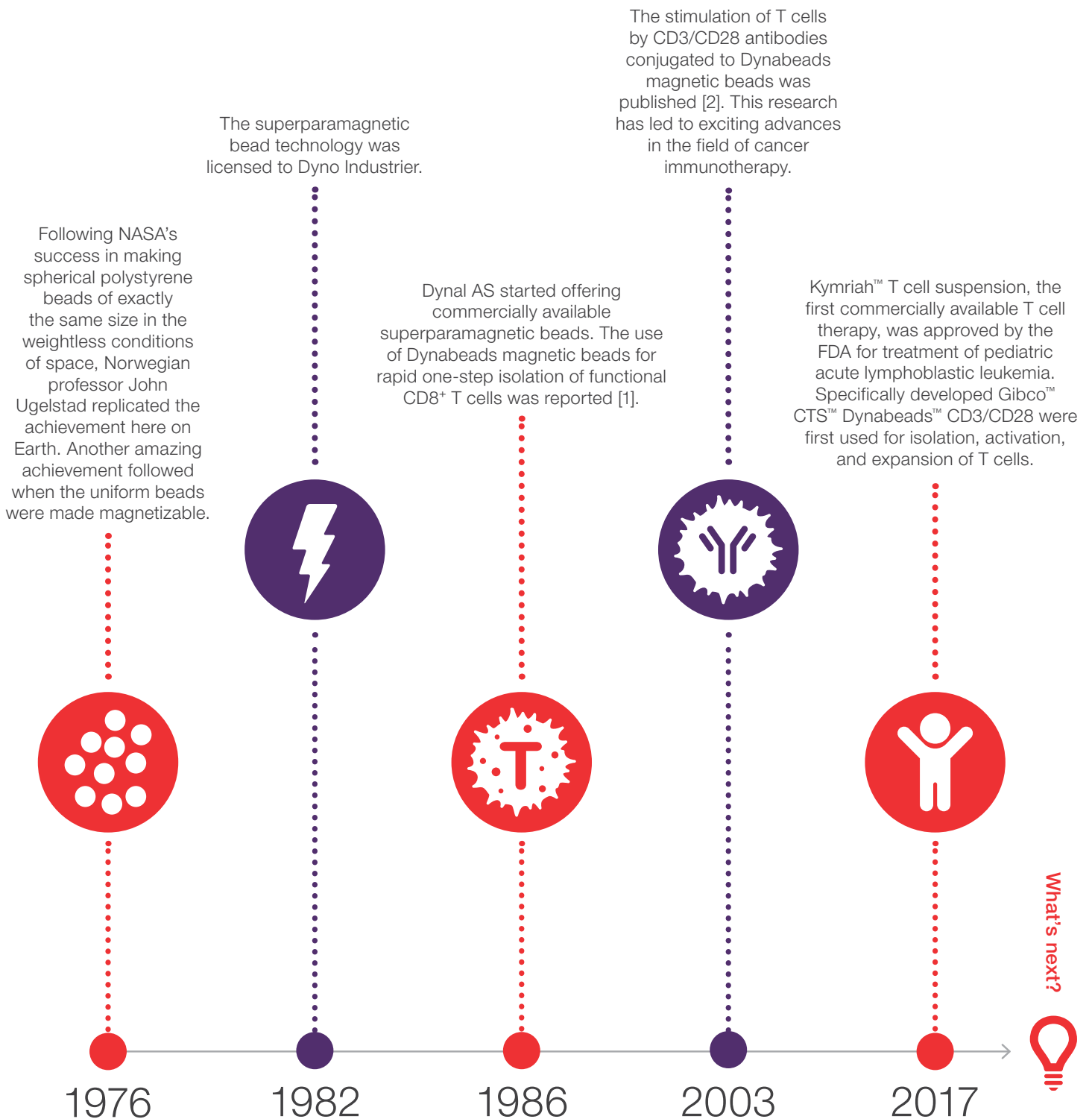


Figure 1. The magnetic bead you choose will affect your results. Dynabeads magnetic beads have a defined surface to carry out the necessary binding, with no inner surface to trap unwanted proteins. **(A)** Dynabeads products are the most uniform, monodispersed superparamagnetic beads, manufactured with highly controlled product quality to help ensure the highest degree of reproducibility. **(B–D)** Magnetic particles from alternative suppliers have variable shapes and sizes that trap impurities, resulting in lower reproducibility and increased nonspecific binding.

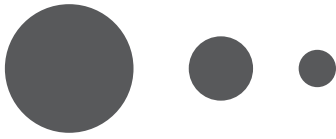
It began in space

Notable events in the history of Dynabeads magnetic beads

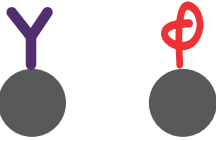


Versatility of the Dynabeads magnetic beads

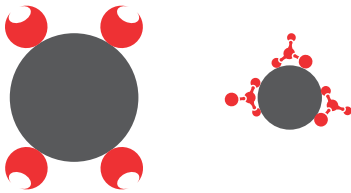
There are two main considerations for Dynabeads products—bead size and coating. Many optimized Dynabeads magnetic beads are ready for immediate use in a variety of applications; alternatively, you can easily prepare magnetic beads with your own antibody, oligonucleotide, or other ligand of choice.



Size: Dynabeads magnetic beads come in 4.5, 2.8, or 1.0 μm sizes for different applications. Typically, larger beads are used with intact cells for isolation and expansion. Smaller beads are used with molecules including proteins and nucleic acids.



Specificity: To capture specific cells or molecules, Dynabeads products that are already conjugated to molecules like antibodies or protein G can be purchased. The beads can also be included as part of a kit.



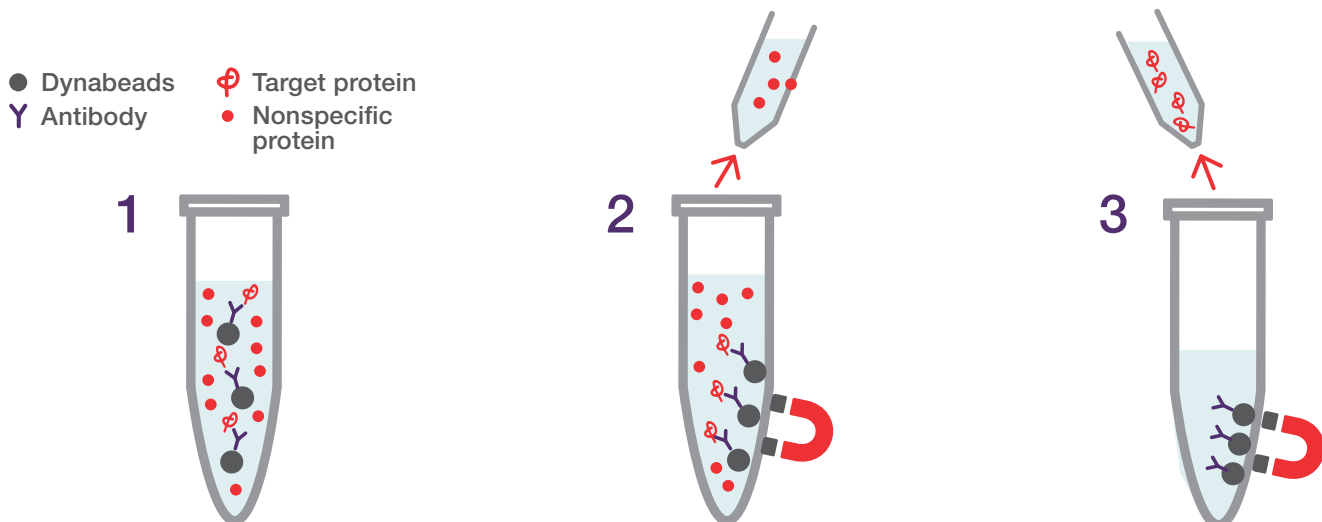
Flexibility: Streptavidin-coated or surface-activated beads can be used to customize the beads with your molecule of interest.

How Dynabeads magnetic beads work

The Dynabeads magnetic separation protocol generally consists of three simple steps. No centrifugation steps or columns are required for sample processing, and the protocol can be automated on Thermo Scientific™ KingFisher™ instruments.

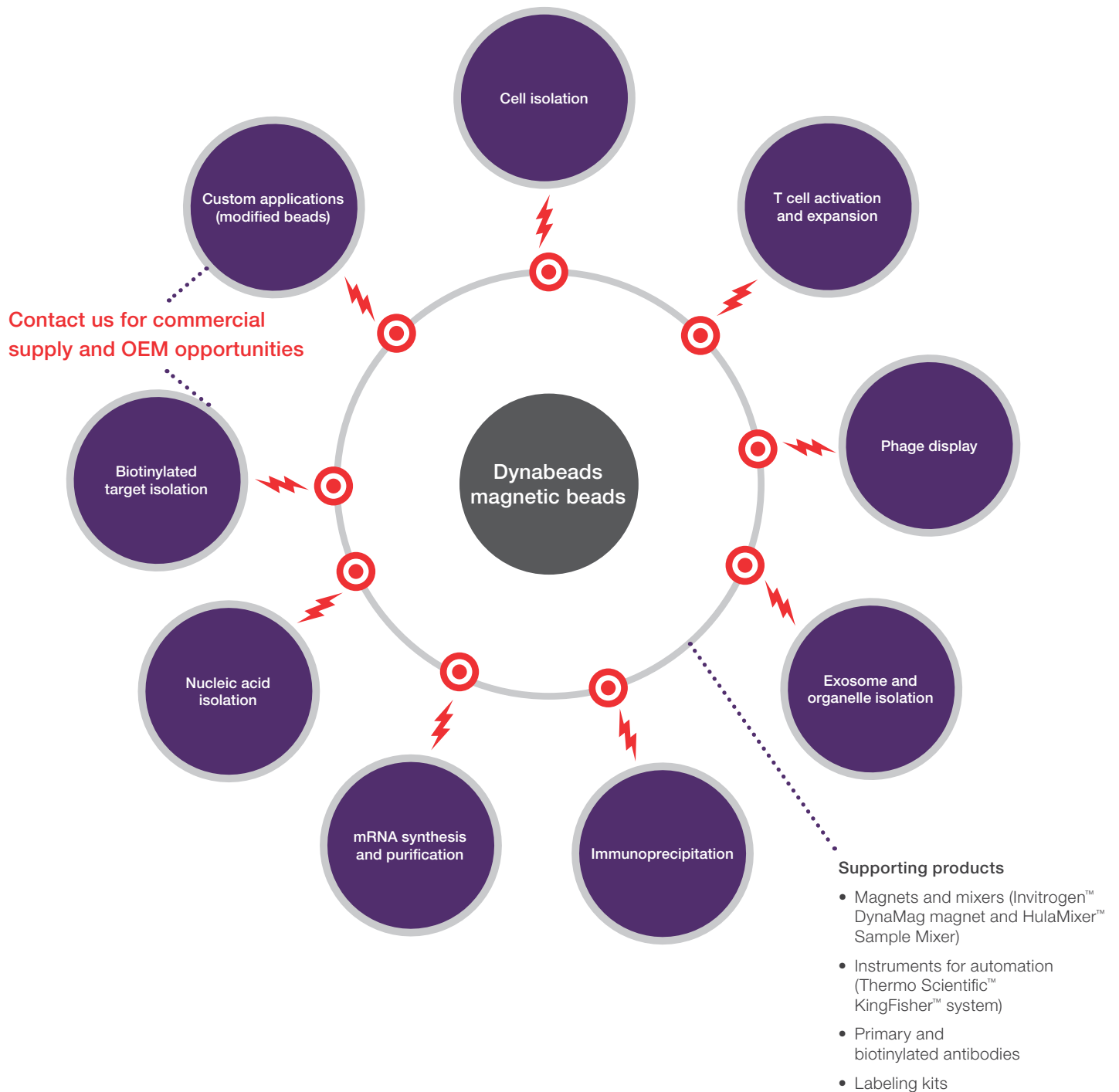


Watch this video to see how Dynabeads magnetic beads work.



Applications

Dynabeads magnetic beads enable a wide range of applications



Need help selecting the right bead for your application?
See our selection guide at [thermofisher.com/findyourdynabead](https://www.thermofisher.com/findyourdynabead)
or contact our technical support team.

Cell isolation

Isolate cells from mouse, human, or other species using a variety of positive- or negative isolation or depletion kits. Gentle, tube-based magnetic separation isolates high yields of pure, viable, and functional cells. This technique also preserves the native characteristics of isolated cells, by avoiding passage of cells through a dense column.

With Dynabeads products, cell isolation is fast and flexible with no special instrumentation required, other than a magnet. Magnetic bead products have a long shelf life (minimum of 18 months) and can be used with tubes or to process multiple samples in 6-, 24-, 48-, or 96-well plates.

Sample workflow

Prepare starting sample



Mixture of cells, such as whole blood or peripheral blood mononuclear cells (PBMCs)



Isolate cells



Isolation or depletion of cells with **Dynabeads magnetic beads**






Analyze or process cells further



Cell sorting, cellular or molecular analysis, cell culture, or expansion

Cell isolation methods

	Positive isolation	Negative isolation	Depletion
			
Description	Isolate one cell type from the sample using beads that target specific cell type of interest.	Isolate one cell type from the sample using beads that target and remove unwanted cells.	Target and remove one unwanted cell type from the sample.
Benefits	Enables cell enrichment from whole blood, bone marrow, or buffy coat prior to flow cytometry or cell-based assays. Magnetic beads can easily be released and removed using Invitrogen™ Dynabeads™ FlowComp™ technology.*	Yields untouched, bead- and antibody-free cells for a variety of applications.	Enables removal of unwanted cell types with high efficiency. Target cells can easily be removed from viscous samples like whole blood and bone marrow.

* FlowComp (flow compatible) technology means that the isolated cells are free of beads and can be used in any downstream assay, such as flow cytometry.



Watch this video on cell separation.

Featured products

Ordering information

Product	Cat. No.
Positive isolation	
Isolation of human cells	
Dynabeads CD4 Positive Isolation Kit	11331D
Dynabeads CD8 Positive Isolation Kit	11333D
Dynabeads FlowComp Human CD3 Kit	11365D
Dynabeads FlowComp Human CD4 Kit	11361D
Dynabeads FlowComp Human CD8 Kit	11362D
Dynabeads FlowComp Human CD14 Kit	11367D
Dynabeads Regulatory CD4 ⁺ /CD25 ⁺ T Cell Kit	11363D
DETACHaBEAD CD19*	12506D
CELLlection Epithelial Enrich Dynabeads	16203
Isolation of mouse cells	
Dynabeads FlowComp Mouse CD4 Kit	11461D
Dynabeads FlowComp Mouse CD8 Kit	11462D
Dynabeads FlowComp Mouse Pan T Kit	11465D
Dynabeads FlowComp Mouse CD4 ⁺ /CD25 ⁺ Treg Cells Kit	11463D
Depletion	
Depletion of human cells	
Dynabeads CD19 Pan B*	11143D
Dynabeads CD31 Endothelial Cell	11155D
Dynabeads CD45	11153D
Dynabeads CD14	11149D
Dynabeads CD2	11159D
Dynabeads CD3	11151D
Dynabeads CD4	11145D
Dynabeads CD8	11147D
Dynabeads CD25	11157D
Dynabeads Epithelial Enrich	16102
Depletion of mouse cells	
Dynabeads Mouse Pan B	11441D
Dynabeads Mouse Pan T	11443D
Dynabeads Mouse CD4	11445D
Dynabeads Mouse CD8 (Lyt 2)	11447D

Product	Cat. No.
Beads conjugated to secondary antibodies— add your own antibody	
CELLlection Biotin Binder Kit	11533D
Dynabeads Biotin Binder	11047
Dynabeads FlowComp Flexi Kit	11061D
Dynabeads Pan Mouse IgG	11041
Dynabeads Sheep Anti-Mouse IgG	11031
Dynabeads Sheep Anti-Rat IgG	11035
Negative isolation	
Isolation of human cells	
Dynabeads Regulatory CD4 ⁺ /CD25 ⁺ T Cell Kit	11363D
Dynabeads Human DC Enrichment Kit	11308D
Dynabeads Untouched Human T Cells Kit	11344D
Dynabeads Untouched Human CD4 T Cells Kit	11346D
Dynabeads Untouched Human CD8 T Cells Kit	11348D
Dynabeads Untouched Human NK Cells Kit	11349D
Dynabeads Untouched Human Monocytes Kit	11350D
Dynabeads Untouched Human B Cells Kit	11351D
Isolation of mouse cells	
Dynabeads Mouse CD43	11422D
Dynabeads Mouse DC Enrichment	11429D
Dynabeads Untouched Mouse T Cells Kit	11413D
Dynabeads Untouched Mouse CD4 Cells Kit	11415D
Dynabeads Untouched Mouse CD8 Cells Kit	11417D

* For positive isolation and release of B cells, the DETACHaBEAD CD19 reagent needs to be used in combination with Dynabeads CD19 magnetic beads.

 Find out more at thermofisher.com/cellisolation

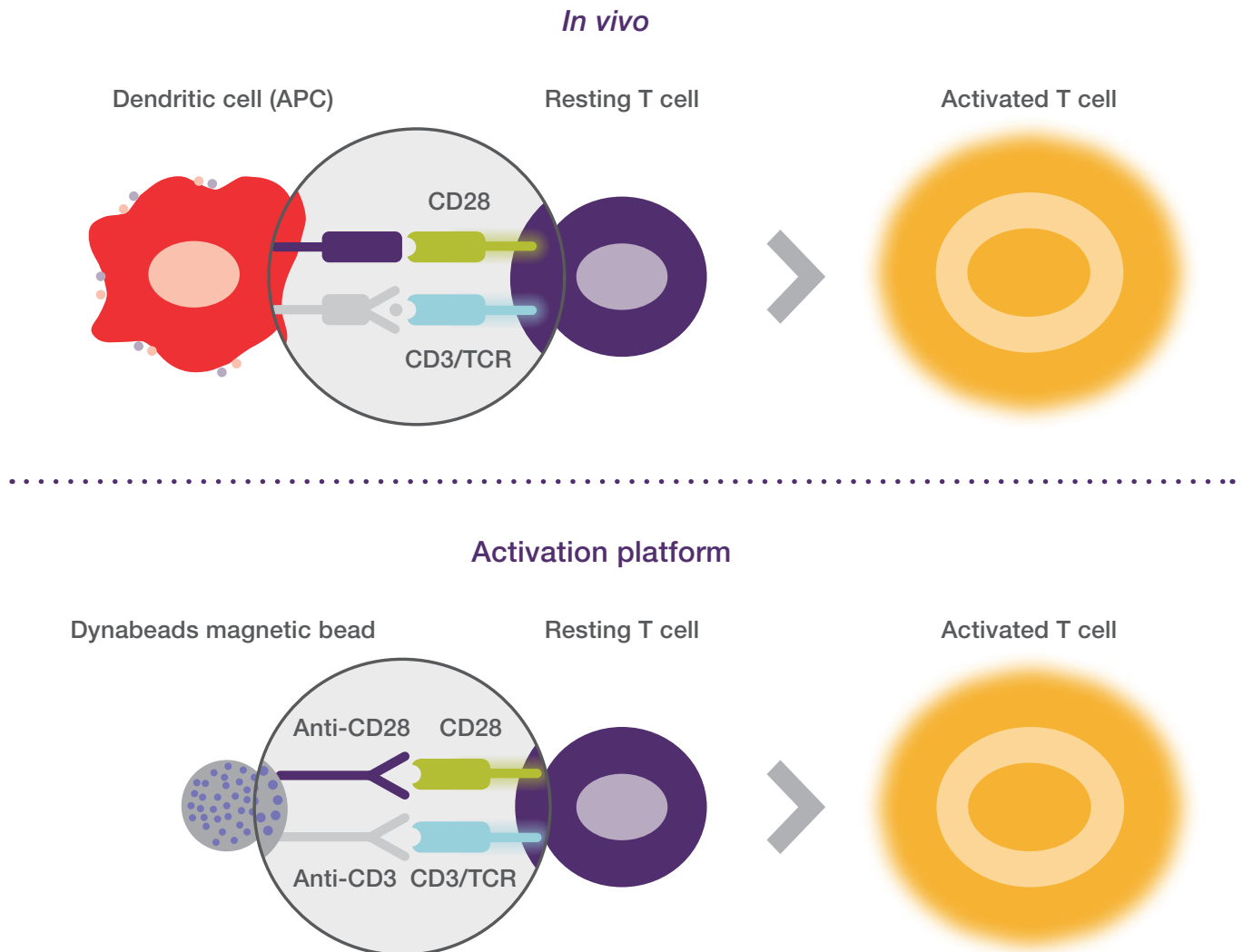
T cell activation and expansion

Dynabeads technology enables reproducible, fast, and efficient activation and expansion of human or mouse T cells. Activate and expand naïve and memory T cells, T cell clones, regulatory T cells, natural killer T (NKT) cells, and cytotoxic T lymphocytes (CTLs) from mouse and human samples. Dynabeads products support basic research as well as translational and clinical applications, allowing you to move from mouse studies to clinical research using the same technology platform.

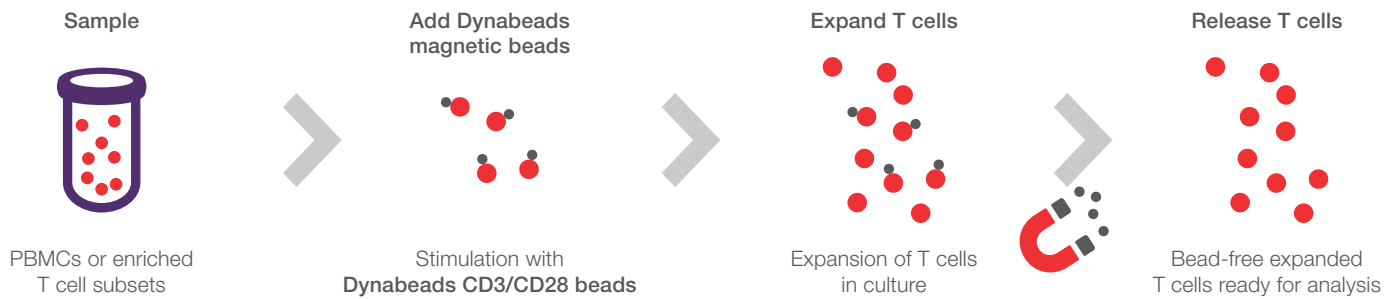
Key benefits

- *In vitro* activation of T cells
- High reproducibility and easy protocol; just add beads
- No need for autologous antigen presenting cells (APCs), mitogens, antigens, or feeder cells
- Cytokine profile and full T cell receptor (TCR) repertoire are retained
- Method translates from mouse studies to human immunotherapy applications on the same platform

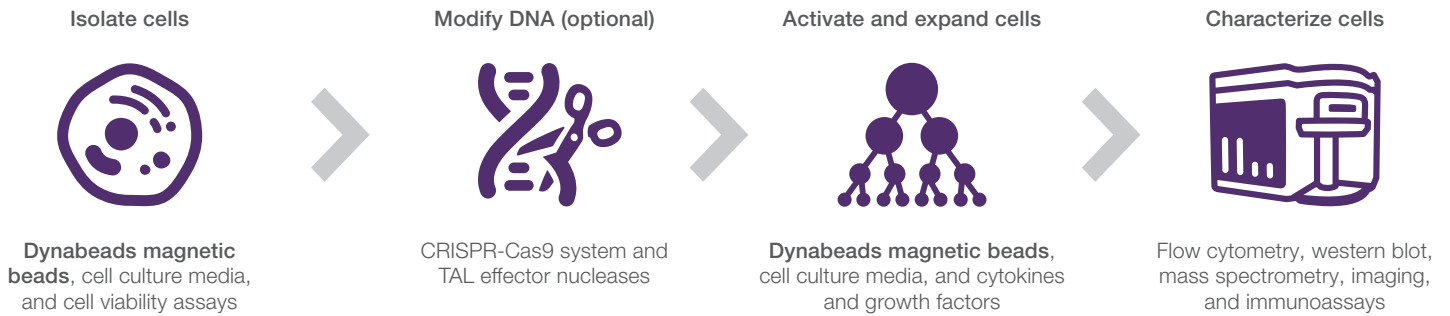
Dynabeads T cell activation and expansion products mimic *in vivo* APCs



How it works



Sample workflow



Scan here to watch videos of *in vitro* T cell activation with Dynabeads magnetic beads

Featured products

Ordering information

Product	Cat. No.	Intended use
Dynabeads Human Treg Expander	11129D	For research use only
Dynabeads Human T-Activator CD3/CD28 for T Cell Expansion and Activation	11131D	For research use only
Dynabeads Human T-Activator CD3/CD28/CD137*	11163D	For research use only
Dynabeads Mouse T-Activator CD3/CD28 for T Cell Expansion and Activation	11452D	For research use only
Dynabeads Human T-Expander CD3/CD28	11141D	For research use only (research version of Cat. No. 40203D)
CTS (Cell Therapy Systems) Dynabeads CD3/CD28	40203D	For research use or non-commercial manufacturing of cell-based products for clinical research
CTS Dynabeads Treg Xpander	46000D	For research use or non-commercial manufacturing of cell-based products for clinical research

* For expansion of antigen-specific T cell clones or cell lines.

Find out more at thermofisher.com/tcellactivation and thermofisher.com/ctsimmunotherapy

Exosome and organelle isolation

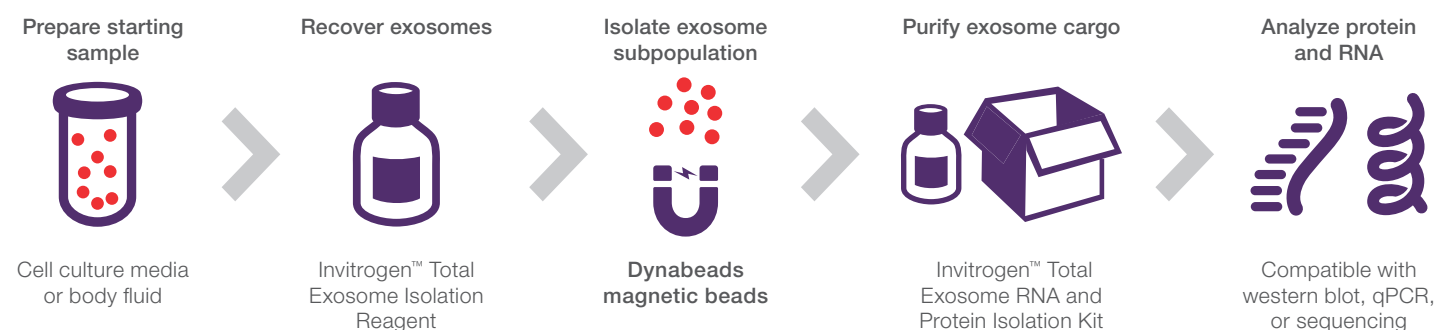
Isolate, characterize, and analyze exosomes and their RNA and protein content, as well as perform *in vitro* and *in vivo* tracing with a range of reagents, tools, and protocols from Thermo Fisher Scientific.

Dynabeads products enable isolation and flow cytometry analysis of exosomes positive for CD9, CD63, CD81, and EpCAM. Alternatively, we offer streptavidin beads with an exosome purification protocol so you can use your own biotinylated antibody against the exosome target.

Key benefits

- Highly pure exosomes
- Easily scalable protocol
- Detect exosomes via flow cytometry in less than 1 hour
- Isolate exosomes for analysis by western blot

Sample workflow



Featured products

Ordering information

Product*	Quantity	Cat. No.
Total Exosome Isolation Reagent (precipitation technology)		
From cell culture media	50 mL	4478359
From blood serum	6 mL	4478360
From blood plasma	6 mL	4484450
From urine	50 mL	4484452
From other body fluids	6 mL	4484453
Subpopulation isolation and detection (magnetic bead technology)		
Exosome-Human CD9 Isolation Reagent	2 mL	10614D
Exosome-Human CD9 Flow Detection Reagent	2 mL	10620D
Exosome-Human CD63 Isolation/ Detection Reagent	3 mL	10606D

Product*	Quantity	Cat. No.
Exosome-Human CD81 Isolation Reagent	2 mL	10616D
Exosome-Human CD81 Flow Detection Reagent	2 mL	10622D
Exosome-Human EpCAM Isolation Reagent	2 mL	10618D
Exosome-Human EpCAM Flow Detection Reagent	2 mL	10624D
Exosome-Streptavidin Isolation/Detection Reagent	3 mL	10608D
RNA and protein extraction		
Total Exosome RNA & Protein Isolation Kit	40 preps	4478545

* This table shows our range of products for exosome purification.

Find out more at thermofisher.com/exosomes

Immunoprecipitation

Dynabeads magnetic beads offer a fast, easy, and efficient method of pulling down proteins and other molecules of interest. The beads are ideal for the small-scale isolation of proteins or nucleic acids in applications such as immunoprecipitation (IP), co-immunoprecipitation (co-IP), chromatin IP (ChIP), and RNA IP (RIP).

Dynabeads magnetic beads help ensure the best balance of high yield and reproducibility with low nonspecific binding. Magnetic beads also enable higher-throughput applications, for which samples can be processed in 24- or 96-well plates manually, or on KingFisher instruments.

Key benefits

- **Low background**—little-to-no nonspecific binding and no preclearing required for high yields of pure proteins
- **Highly sensitive**—most-cited method for sensitive applications such as ChIP and IP
- **Fast and easy**—<40 min protocol with no centrifugation or preclearing steps
- **Antibody savings**—all binding occurs on the smooth outer surface of the beads, which conserves precious antibodies and supports a cost-efficient solution per sample
- **Flexible**—products for IP, co-IP, pull-down, and ChIP assays; ideal for manual and automated protocols

How it works

Prepare starting sample



Cell lysate, blood, serum, or plasma

Add Dynabeads magnetic beads



Sample is combined with antibody bound to protein A or G that is coupled to Dynabeads magnetic beads

Isolate protein target



Target is separated from the rest of sample, using a magnet or KingFisher instrument

Wash



Unwanted proteins are removed

Elute



Target is separated from beads for analysis



Watch the IP video.

Find out more at [thermofisher.com/immunoprecipitation](https://www.thermofisher.com/immunoprecipitation)

Immunoprecipitation with DynaGreen magnetic beads

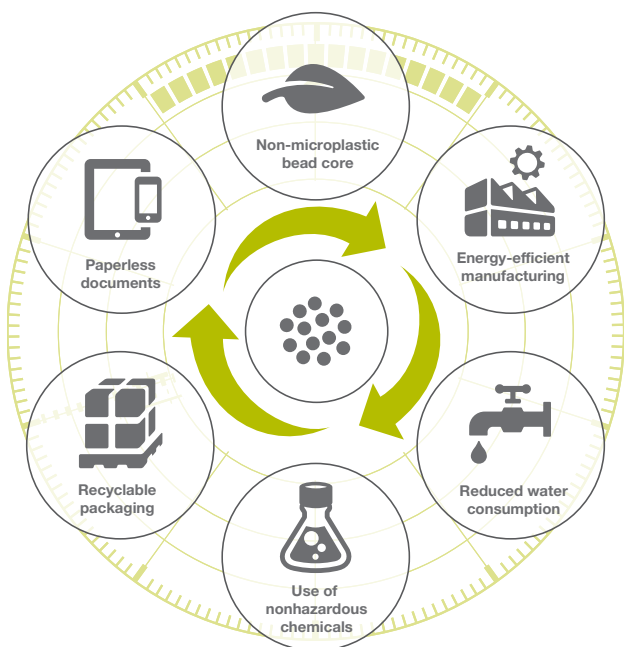
Sustainable Invitrogen™ DynaGreen™ magnetic beads are a highly magnetic, submicron bead platform with a pioneering green design. These 250-nanometer superparamagnetic beads enable high-performance direct and indirect IP of proteins, protein complexes, protein–nucleic acid complexes, and other antigens (Ag). The submicron bead size provides a low sedimentation rate and large available target capture surface area, resulting in efficient, high-yield isolation of target protein. What’s more, the beads are compatible with both mass spectrometry and western blotting workflows.

Developed with sustainability in mind and following the 12 principles of greener chemistry, these non-microplastic magnetic beads use nonhazardous chemicals in an energy efficient production process and have readily recyclable packaging. Choosing DynaGreen magnetic beads can help reduce the environmental impact of research without compromising on results.

Key benefits

- **Sustainable**—reduced environmental impact with energy-efficient manufacturing, recyclable packaging, and a non-microplastic magnetic bead core
- **High performance**—high yield and purity for direct and indirect immunoprecipitation
- **Trusted**—backed by 30 years of Dynabeads magnetic beads quality and innovation
- **Flexible**—effortlessly scale your experiments with simple manual and automated workflows on Thermo Scientific™ KingFisher™ purification systems

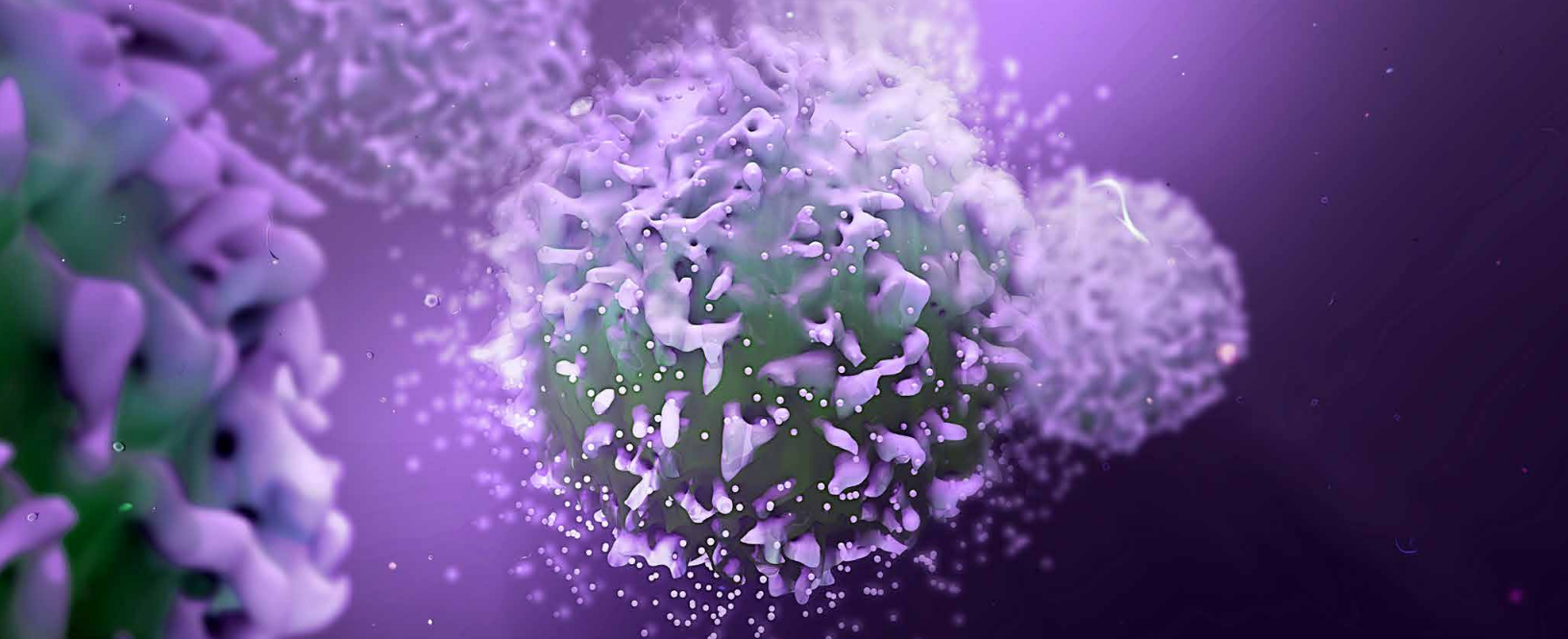
Sample workflow



Ordering information

Product	Quantity	Cat. No.
DynaGreen Protein A magnetic beads	0.5 mL, 20 reactions	80101G
DynaGreen Protein A magnetic beads	3 mL, 120 reactions	80102G
DynaGreen Protein A magnetic beads	25 mL, 1,000 reactions	80103G
DynaGreen Protein A/G magnetic beads	0.5 mL, 20 reactions	80104G
DynaGreen Protein A/G magnetic beads	3 mL, 120 reactions	80105G
DynaGreen Protein A/G magnetic beads	25 mL, 1,000 reactions	80106G

Find out more at thermofisher.com/dynagreen



Co-immunoprecipitation

Co-immunoprecipitation (co-IP) is a popular method for the isolation of a target protein and its binding partners for analysis. Dynabeads kits offer quick and easy co-IP of intact, functional protein complexes so you only isolate the proteins of interest. Dynabeads magnetic separation is more effective than techniques using Sepharose™ beads and spin columns, which can dissociate fragile and large protein complexes.

The co-IP kit was developed to mimic intracellular conditions while providing customized stringency for different protein complexes in a cell solution. It offers the opportunity to optimize and fine-tune weak and transient interactions between short amino acid sequences in different proteins.

Featured products

Ordering information

Product	Quantity	Cat. No.
Dynabeads Protein A for Immunoprecipitation	1 mL	10001D
Dynabeads Protein G for Immunoprecipitation	1 mL	10003D
Dynabeads Protein A/Protein G and Magnet Starter Pack	40 reactions	10015D
Dynabeads Protein A IP Kit and Magnet Starter Pack	40 reactions	10018D
Dynabeads Protein G IP Kit and Magnet Starter Pack	40 reactions	10019D
Dynabeads His-Tag Isolation and Pulldown	2 mL	10103D
Dynabeads M-280 Sheep Anti-Mouse IgG	10 mL	11202D
Dynabeads M-280 Sheep Anti-Rabbit IgG	10 mL	11204D
Dynabeads M-280 Streptavidin	10 mL	11206D
Dynabeads Antibody Coupling Kit	1 kit	14311D
Dynabeads Co-Immunoprecipitation Kit	40 reactions	14321D

Find out more at [thermofisher.com/coip](https://www.thermofisher.com/coip)

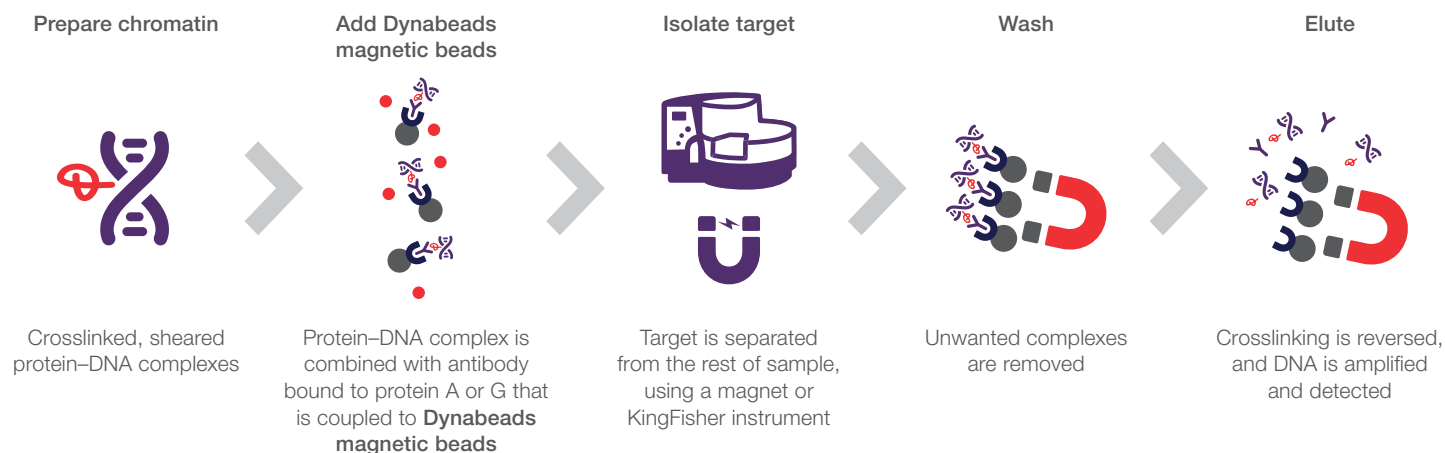
Chromatin immunoprecipitation and RNA immunoprecipitation

The chromatin immunoprecipitation (ChIP) assay is a powerful method for analyzing epigenetic modifications and genomic DNA sequences bound to specific regulatory proteins. ChIP experiments require a variety of steps, including crosslinking with formaldehyde, cell lysis (protein–DNA extraction), chromatin shearing, antibody-based immunoprecipitation, DNA sample cleanup, and PCR.

RNA immunoprecipitation (RIP) uses an approach similar to ChIP, except that RNA-binding proteins are immunoprecipitated instead of DNA-binding proteins. Immunoprecipitated RNAs can then be identified by RT-PCR and cDNA sequencing.

Because Dynabeads magnetic beads–based separation is gentle and sensitive, it is ideal for capturing DNA and protein complexes. In fact, a single DNA-binding protein can bind to multiple DNA sequences. Dynabeads technology allows you to capture both rare and abundantly bound DNA.

Sample workflow



Ordering information

Product	Quantity	Cat. No.
Dynabeads Protein A Immunoprecipitation Kit	40 reactions	10006D
Dynabeads Protein A for Immunoprecipitation*	5 mL	10002D
Dynabeads Protein G Immunoprecipitation Kit	40 reactions	10007D
Dynabeads Protein G for Immunoprecipitation*	5 mL	10004D
Dynabeads Antibody Coupling Kit	1 kit	14311D
Dynabeads Co-Immunoprecipitation Kit	40 reactions	14321D
Dynabeads M-280 Sheep Anti-Mouse IgG*	10 mL	11202D
Dynabeads M-280 Sheep Anti-Rabbit IgG*	10 mL	11204D
Dynabeads M-280 Streptavidin*	10 mL	11206D

* Additional volumes are available at thermofisher.com.

Find out more at thermofisher.com/dynabeadschip

Dynabeads streptavidin beads

Use Invitrogen™ Dynabeads™ streptavidin beads to bind biotinylated ligands such as antibodies or oligonucleotides. These “armed” beads can then be used to capture or purify any biological entity of interest. The avidin–biotin complex is the strongest known noncovalent interaction ($K_d = 10^{-15}$ M) between a protein and ligand. Binding is very rapid, and once formed, is unaffected by extremes of pH, temperature, organic solvents, and other denaturing agents.

Dynabeads streptavidin beads are cited in over 30,000 peer-reviewed publications for many applications, such as:

- Protein and peptide isolation
- Nucleic acid purification
- Cell isolation
- Exosome isolation
- Target enrichment in the NGS workflow
- mRNA synthesis

Dynabeads streptavidin beads are ideal for capture of low-abundance DNA and RNA from samples (e.g., blood, feces, cerebrospinal fluid) using sequence-specific probes.

The method offers several advantages, including removal of extraneous DNA, RNA, and inhibitory substances, as well as concentration of diluted and precious target into a small volume for further analysis.

Key benefits

- No centrifugation, precipitation, or columns
- In-solution binding with rapid kinetics
- Excellent mechanical and chemical stability
- Reduced variability and increased consistency
- Process can be automated for isolation of biotinylated DNA, RNA, proteins, or cells

Target enrichment in the NGS workflow

Boost your library preparation with stand-alone Dynabeads magnetic beads for target enrichment that deliver reproducible NGS results and high sensitivity and purity of enriched target sequences. Invitrogen™ Dynabeads™ Streptavidin for Target Enrichment is intended for enrichment of target sequences hybridized on a biotinylated probe that is immobilized to streptavidin-coated magnetic beads.

Target enrichment



NGS workflow



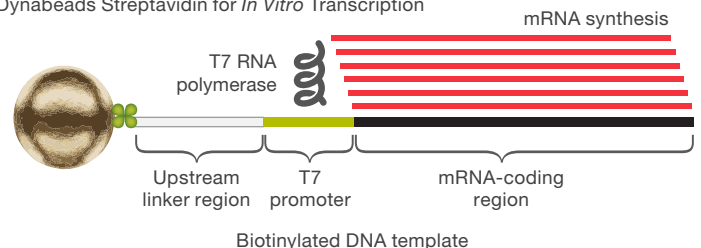
Direct technique—The biotinylated nucleic acid probe first binds to the Dynabeads magnetic beads and then hybridizes with the target.

Indirect technique—The biotinylated nucleic acid probe hybridizes with the target, and it is then enriched using Dynabeads magnetic beads.

mRNA synthesis

Designed to minimize the effort and cost of plasmid preparation, Invitrogen™ Dynabeads™ Streptavidin for *In Vitro* Transcription offers simple, flexible, and automation-ready mRNA synthesis. The DNA template can be reused at least 6 times with consistent mRNA yield.

Dynabeads Streptavidin for *In Vitro* Transcription

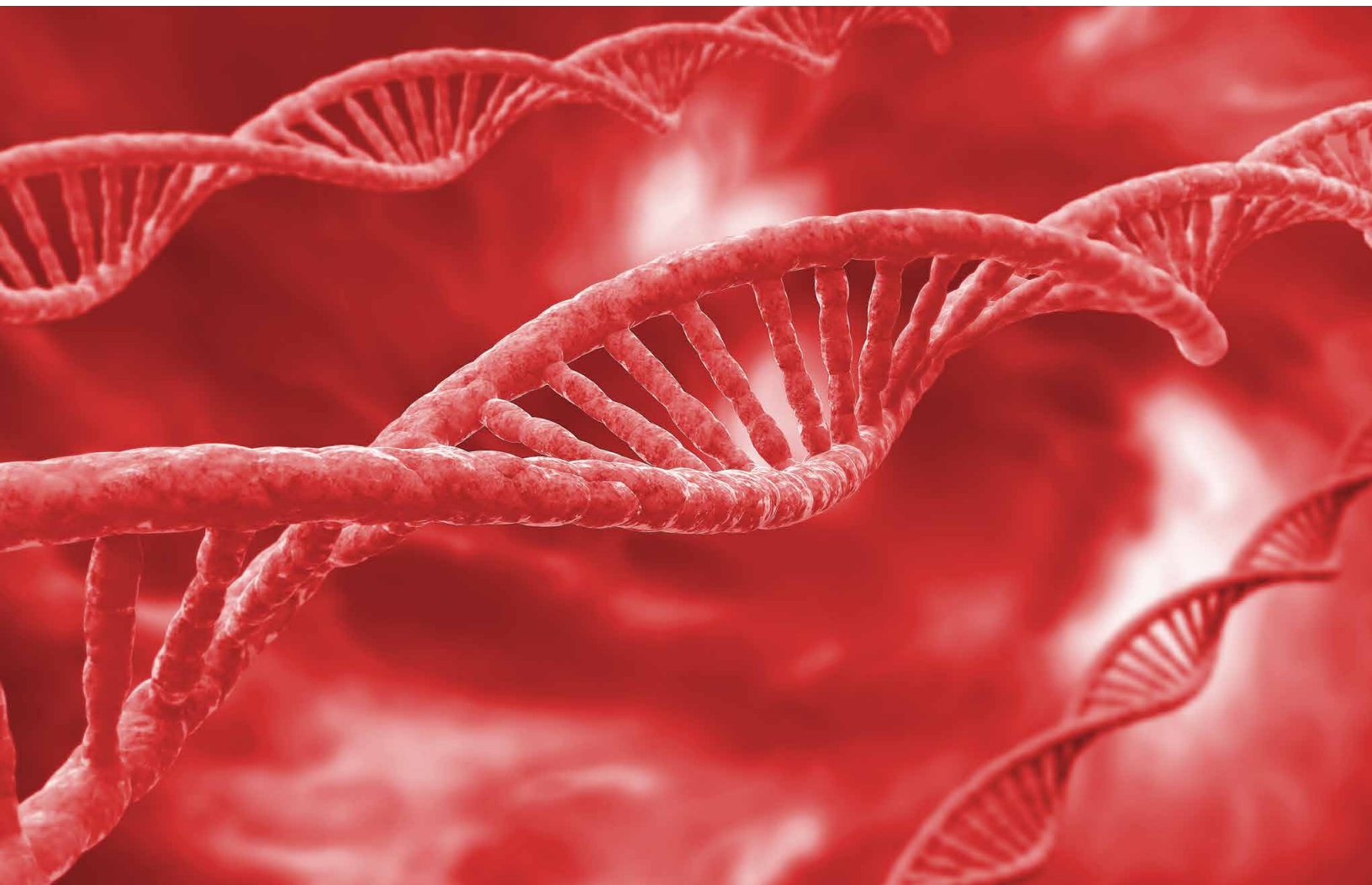


Featured products

Ordering information

Product	Recommended applications	Quantity	Cat. No.
Dynabeads Streptavidin for Target Enrichment*	Enrichment of target DNA sequences in NGS	10 mL	65606D
Dynabeads Streptavidin for <i>In Vitro</i> Transcription*	Immobilization of biotinylated DNA template for use in <i>in vitro</i> transcription and mRNA synthesis	10 mL	65006D
Dynabeads M-280 Streptavidin*		10 mL	11206D
Dynabeads MyOne Streptavidin T1*	Cell isolation, exosome studies, protein purification, immunoassays	10 mL	65602
Exosome-Streptavidin Isolation/Detection Reagent		3 mL	10608D
Dynabeads M-270 Streptavidin*		10 mL	65306
Dynabeads MyOne Streptavidin C1*	Nucleic acid protocols, immunoassays	10 mL	65002
Dynabeads Streptavidin Trial Kit	Application testing: includes all types of Dynabeads Streptavidin beads except Dynabeads Streptavidin for Target Enrichment	4 x 1 mL	65801D

* Additional volumes are available at [thermofisher.com/streptavidinbeads](https://www.thermofisher.com/streptavidinbeads).



Find out more at [thermofisher.com/streptavidinbeads](https://www.thermofisher.com/streptavidinbeads)

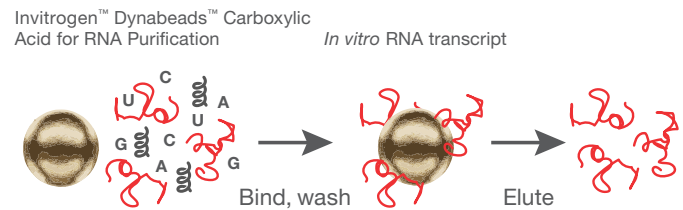
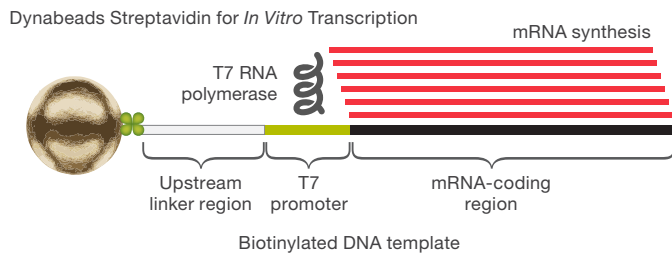
Vaccine research and development

The success of mRNA vaccines in fighting SARS-CoV-2 and growing occurrences of chronic and infectious diseases has brought the world into a new era of vaccine development.

Dynabeads magnetic beads for mRNA synthesis and purification are innovative solutions for mRNA vaccine research from discovery to production.

Key benefits

- Reusable DNA template for improved cost efficiency
- Reproducible results
- High yield and excellent mRNA integrity



Ordering information

Product	Quantity	Cat. No.
Dynabeads Streptavidin for <i>In Vitro</i> Transcription	10 mL	65006D
Dynabeads Carboxylic Acid for RNA Purification	10 mL	65021D
Dynabeads RNA Binding Buffer	20 mL	65040D
Dynabeads RNA Purification Kit (Dynabeads Carboxylic Acid for RNA Purification and Dynabeads RNA Binding Buffer)	10 mL	65032D
Dynabeads <i>In Vitro</i> Transcription and RNA Purification Kit (Dynabeads Streptavidin for <i>In Vitro</i> Transcription, Dynabeads Carboxylic Acid for RNA Purification, and Dynabeads RNA Binding Buffer)	10 mL	65036D

Find out more at [thermofisher.com/dynabeadsmrna](https://www.thermofisher.com/dynabeadsmrna)

Intact virus and exosome enrichment

For functional studies of viruses, such as growth rate and infectivity, live intact virus is required. Viruses can be present in very low concentrations in samples such as cell culture media and wastewater. To perform downstream analyses, it is often necessary to purify and concentrate the virus from the sample matrix.

Viruses and exosomes can be easily purified and concentrated into a smaller volume by either precipitation with [Invitrogen™ Virus Precipitation Reagent](#) followed by centrifugation, or by using [Invitrogen™ Dynabeads™ Intact Virus Enrichment](#) magnetic beads. Both methods of enrichment are suitable for a live or inactivated virus, exosomes, virus-like particles (VLPs), other enveloped viruses and vesicles present in cell culture media, virus transport media, and wastewater samples, and may be released from the beads in 10 minutes. This short and simple enrichment approach reduces the risk of low yield and does not affect the integrity of viruses or exosomes.

Key benefits

- **Fast**—intact virus enrichment in ~20 minutes
- **Simple**—just push the button and walk away
- **High throughput**—enrich up to 96 samples per run
- **Functional**—the intact virus can be used in any functional assay
- **Quick release**—release virus from the beads in 10 min

Sample workflow

Prepare starting sample



Viral samples, cell culture media, viral transport media (VTM), wastewater



Add Dynabeads magnetic beads, virus sample, and buffers to Thermo Scientific™ KingFisher™ plates



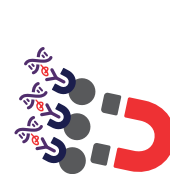
Isolate viruses or exosomes



Target is separated from the rest of sample, using a DynaMag magnet or KingFisher instrument



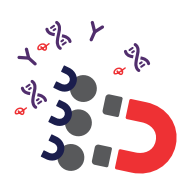
Wash and elute



Unwanted bound material is removed and the target is separated from beads for downstream analysis



Downstream applications



- Intact virus for further virus growth (BSL-3 labs)
- Functional studies, (e.g., with target host cells)
- Proteomics
- Nucleic acid studies
- Vaccine research
- Animal health research

Ordering information

Product	Quantity	Cat. No.
Dynabeads Intact Virus Enrichment	100 reactions	10700D
Intact Virus Precipitation Reagent	100 reactions	10720D

Find out more at thermofisher.com/virusenrichment

Nucleic acid isolation

Obtain highly purified nucleic acids using Dynabeads kits or Applied Biosystems™ MagMAX™ kits. The MagMAX kits incorporate Dynabeads magnetic beads for manual or automated DNA and RNA isolation from a variety of sample types. The purified nucleic acids are compatible with most downstream applications.

Dynabeads magnetic beads for nucleic acid isolation have a unique surface that enables direct binding of DNA or RNA in specific salt concentrations. Sequence-specific purification can be performed by conjugating oligonucleotides to Dynabeads magnetic beads.

MagMAX kits and reagents

MagMAX kits incorporate Dynabeads magnetic beads for the isolation of high-purity nucleic acids, either manually on a magnetic stand or automated on a KingFisher instrument. MagMAX reagents are available in a kit format or as bulk reagents. They can be used for a wide range of sample types, including:

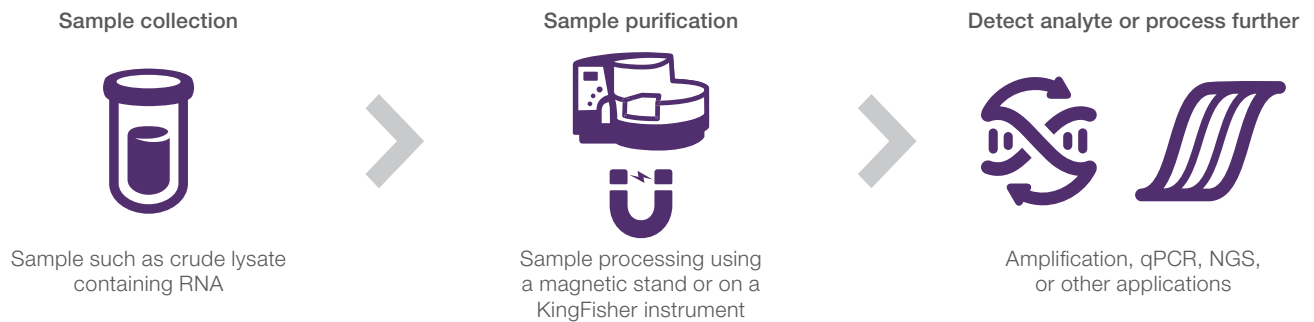
- Cells
- Tissue
- Viruses and pathogens
- Formalin-fixed, paraffin-embedded (FFPE) tissue
- Stool
- Blood and biological fluids
- Plant cells

Dynabeads mRNA Direct Kit

In just 10 minutes, Dynabeads magnetic beads specifically capture mRNA molecules through their poly(A) tails, using oligo(dT)₂₅ coupled to Dynabeads magnetic beads.

This kit features exceptional transcriptome recovery and a low elution volume.

Sample workflow



Find out more at [thermofisher.com/magmax](https://www.thermofisher.com/magmax)

Nucleic acid isolation (continued)

Recommended products

Product	Quantity	Cat. No.
MagMAX kits that include Dynabeads magnetic beads		
MagMAX Cell-Free DNA Isolation Kit	1 kit	A29319
MagMAX Cell-Free Total Nucleic Acid Isolation Kit	1 kit	A36716
MagMAX DNA Multi-Sample Ultra 2.0 Kit	1 kit	A36570
MagMAX FFPE DNA/RNA Ultra Kit	1 kit	A31881
MagMAX Microbiome Ultra Nucleic Acid Isolation Kit, with bead plate	100 preps	A42357
MagMAX Microbiome Ultra Nucleic Acid Isolation Kit, with bead tubes	100 preps	A42358
MagMAX Plant DNA Isolation Kit*	96 preps	A32549
MagMAX Plant RNA Isolation Kit*	96 preps	A33784
MagMAX for Stabilized Blood Tubes RNA Isolation Kit (Tempus RNA tubes)	96 preps	4451893
MagMAX for Stabilized Blood Tubes RNA Isolation Kit (PAXgene RNA tubes)	96 preps	4451894
MagMAX Viral/Pathogen Nucleic Acid Isolation Kit	100 preps	A42352
MagMAX Viral/Pathogen Ultra Nucleic Acid Isolation Kit	100 preps	A42356

Product	Quantity	Cat. No.
Dynabeads mRNA purification kits		
Dynabeads Oligo(dT) ₂₅ *	5 mL	61005
Dynabeads mRNA Purification Kit	2 mL	61006
Dynabeads mRNA DIRECT Purification Kit*	5 mL	61011
Dynabeads mRNA DIRECT Micro Purification Kit	2 mL	61021
Dynabeads DNA kits		
Dynabeads DNA DIRECT Universal Kit	300 preps	63006
Dynabeads DNA DIRECT Blood Kit	100 preps	63102
Dynabeads SILANE Viral NA Kit	96 preps	37011D
Dynabeads SILANE Genomic DNA Kit	96 preps	37012D

* Additional volumes are available at thermofisher.com.

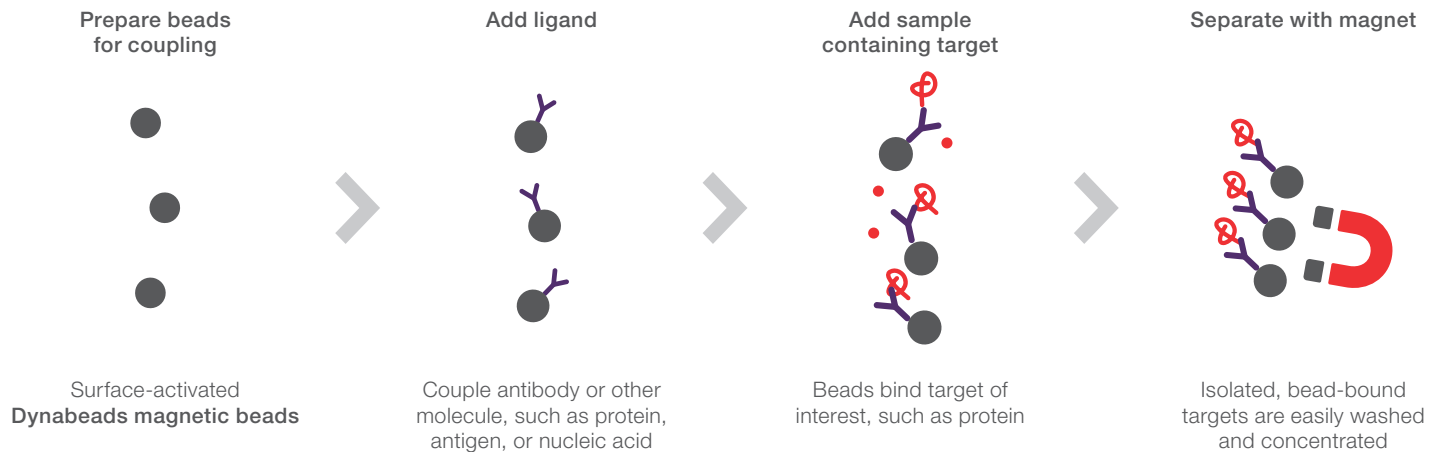
Surface-activated beads

There is a wide range of surface-activated Dynabeads magnetic beads for covalent coupling of ligands to the bead surface. Depending on the bead type, the ligand can be directly linked to the bead surface or indirectly linked through a reactive intermediate. You can select beads of different sizes, with a hydrophobic or hydrophilic surface, and with a variety of surface chemistries.

For optimal results, select the right bead based on antibody or ligand type. For most applications, several Dynabeads products can be used.

Multiple steps in a protocol can take place in a single tube, with just a few handling steps. Magnetic separation allows easy washing and concentration of target material.

How it works



Featured products and applications

Recommended application	Chemistry	Product	Benefit	Size	Cat. No.
Cell isolation and expansion; protein purification and isolation		Dynabeads M-450 Epoxy	Custom cell isolation protocols upstream of molecular applications	5 mL	14011
		Dynabeads M-450 Tosylactivated	Excellent choice for cell separation applications when downstream release from the beads is not required	5 mL	14013
Antibody, functional protein, and peptide coupling	Covalent binding by primary amine (NH ₂) or sulfhydryl (SH) groups	Dynabeads M-280 Tosylactivated*	Purify functional, structurally intact proteins in their native confirmation	10 mL	14204
		Dynabeads MyOne Tosylactivated*		10 mL	65502
		Dynabeads M-270 Epoxy*	Purify functional, structurally intact proteins in their native confirmation Low nonspecific binding; ideal for use in mass spectrometry (MS) analysis	300 mg	14302D
Isolation or immobilization of proteins and peptides	Covalent binding by primary amine (NH ₂) or sulfhydryl (SH) groups; activation through carbodiimide is required	Dynabeads M-270 Carboxylic Acid*	Low nonspecific binding of nucleic acids	10 mL	14306D
Capture of specific DNA or RNA sequences, proteins, or any other analyte		Dynabeads M-270 Amine*	Rapid binding (less than 1 hour) at neutral to high pH and room temperature	2 mL	14307D
		Dynabeads MyOne Carboxylic Acid*	Ideal for use as a solid support in <i>in vitro</i> diagnostic assays	10 mL	65012
Isolation of nucleic acids	Silica-like surface chemistry	Dynabeads MyOne SILANE	Isolation of DNA and RNA with high capacity and reproducibility	5 mL	37002D

* Additional volumes are available at [thermofisher.com](https://www.thermofisher.com).

Find out more at [thermofisher.com/surfaceactivatedbeads](https://www.thermofisher.com/surfaceactivatedbeads)

Magnets and mixers

Magnets

Reduce waiting time by using powerful DynaMag magnets to quickly pull your bead-bound target to the tube wall. These magnets help ensure optimal working positions for the beads and are functionally adapted to suit your workflow.

Key benefits

- Certified for use with Dynabeads products
- Designed with ergonomics in mind
- Magnets are available for most working volumes



Featured products

Ordering information

Product	Quantity	Cat. No.
Molecular applications		
DynaMag-Spin Magnet	1 each	12320D
DynaMag-2 Magnet	1 each	12321D
DynaMag-96 Side Magnet	1 each	12331D
DynaMag-96 Bottom Magnet	1 each	12332D
Cellular applications		
DynaMag-5 Magnet	1 each	12303D
DynaMag-15 Magnet	1 each	12301D
DynaMag-50 Magnet	1 each	12302D

Find out more at [thermofisher.com/magnets](https://www.thermofisher.com/magnets)

Sample mixing

The HulaMixer Sample Mixer is a 3-in-1 sample mixer—combining vibrating, tilting, and rotation for thorough mixing of microcentrifuge tubes and reproducible sample preparation.



Automated sample prep with Dynabeads magnetic beads and KingFisher instruments



- Save time by removing manual steps and reducing overall processing time
- Maintain consistent results with every run
- Easy to install (ready to run in 10 min or less)
- Optimized and easy-to-follow protocols; download existing protocols from our library at [thermofisher.com/kingfisherprotocols](https://www.thermofisher.com/kingfisherprotocols)

Find out more at [thermofisher.com/kingfisher](https://www.thermofisher.com/kingfisher)



Commercial supply and OEM partnerships

We partner with leading biotech, healthcare, and therapeutic companies to develop optimized Dynabeads magnetic beads that meet specific application and regulatory requirements. We support partners from early assay development and validation through scale-up and commercialization.



Premium products: All Dynabeads products are validated with a unique level of reproducibility within and between batches. Patented manufacturing processes ensure careful control of bead parameters and product properties, securing their performance.



Unrivaled bead manufacturing: World-class manufacturing facilities can manufacture batches ranging in size from 1 g to 2 kg with close to zero off-grade batches and flexible production scales. Meets relevant regulatory and quality systems compliance.



Comprehensive technical support: Extensive proprietary knowledge enables customized product development, decreases quality control costs, and increases manufacturing efficiency. Hands-on support from R&D scientists.

Find out more at [thermofisher.com/dynabeadstechnologyoem](https://www.thermofisher.com/dynabeadstechnologyoem)

Select the best beads for your application using our Dynabeads magnetic separation products selection guide. This online tool is available at thermofisher.com/findyourdynabead



Go to the online Dynabeads product selection guide



thermofisher.com/findyourdynabead



Select from the list of applications



- Cell isolation
- T cell activation and expansion
- Exosome isolation and detection
- Protein isolation using His-tag IP and secondary antibody-coated beads
- Nucleic acid isolation using surface-activated or streptavidin-coated beads



Refine your search further



Filters include species, ligand type, cell type, application, and bead size



Select and purchase



Add to cart and complete your purchase

References

1. Gaudernack G, Leivestad T, Ugelstad J et al. (1986) Isolation of pure functionally active CD8⁺ T cells. Positive selection with monoclonal antibodies directly conjugated to monosized magnetic microspheres. *J Immunol Methods* 90:179-187.
2. Trickett A, Kwan YL (2003) T cell stimulation and expansion using anti-CD3/CD28 beads. *J Immunol Methods* 275:251-255.

 Find out more at thermofisher.com/dynabeads

invitrogen