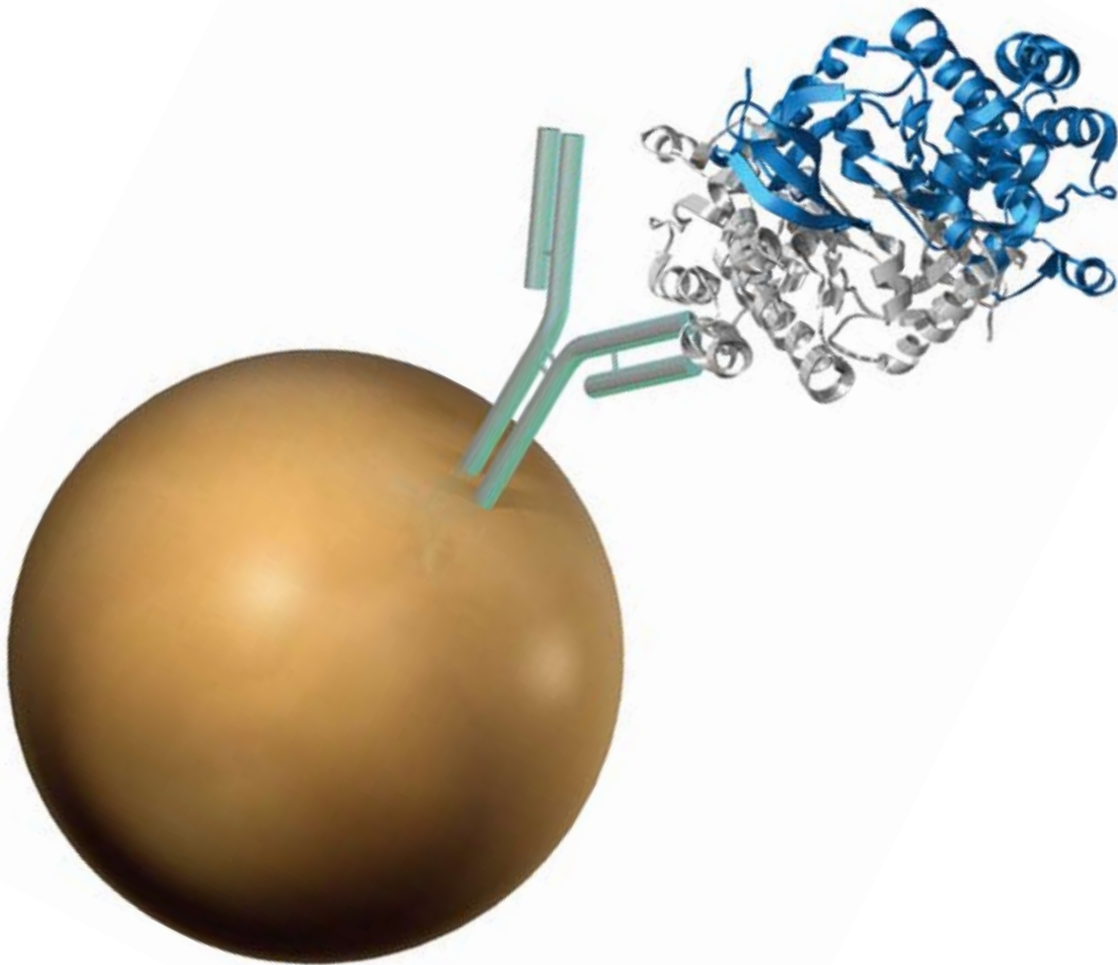


It's time to update your immunoprecipitation

Dynabeads® Protein A and Protein G





The new gold standard for immunoprecipitation

Dynabeads[®] Protein A and Protein G

- Reduce protocol time to 30 minutes
- Isolate intact proteins and protein complexes
- Eliminate background caused by nonspecific binding
- New kits with premade buffers for convenience and increased consistency

You need only a Dynabeads[®] Protein A or Protein G Immunoprecipitation Kit, your specific antibody of choice, and a DynaMag[™] magnet (Figure 1). The protocol takes place in a single tube with just a few handling steps (Figure 2). The attraction is simply *magnetisk*.*

Fast and gentle

Immunoprecipitation with Dynabeads[®] is fast and gentle, causing minimal physical stress to target proteins. Rapid kinetics and short incubation times reduce the protocol time to only 30 minutes.

Your target proteins no longer need to enter the interior of porous resins. Gentle magnetic handling permits the isolation of labile complexes that might otherwise dissociate or be damaged by proteases during long incubations. Native protein conformation and intact, large protein complexes are preserved.

Easy, flexible, and automatable

The protocol can be scaled to match your specific purpose and sample volume requirements. By scaling down, you can easily reduce the consumption of expensive antibodies.

An important advantage of short incubation times and the low nonspecific binding characteristics of Dynabeads[®] is that there is no need for time-consuming preclearing or dilution. Say good-bye to liquid chromatography, columns, filters, centrifuges, or other complicated equipment. The consistent size and shape of the Dynabeads[®] (Figure 3) ensure consistent and predictable behavior, and the protocol is easily automated on a liquid handling platform.

Efficient and reliable

Gentle magnetic handling allows you to work with concentrated protein solutions throughout the procedure. You do not need to worry about losing material from spun-down resins or excess surface during pipetting. Washing and elution are very efficient and ensure maximal sensitivity, minimal loss of target protein, and no background caused by nonspecific binding.

Dynabeads[®] are monodisperse (Figure 3) and feature optimal accessibility and binding kinetics (Figure 4). Convenience and consistency are further strengthened by the ready-made buffers in the kits. Immunoprecipitation with Dynabeads[®] allows you to reduce variability and provides absolute reproducibility for your research.

* *Magnetisk* is the Norwegian word for magnetic. Did you know that magnetic separation technology was pioneered in the 1980s by the Norwegian company Dynal, now part of Life Technologies? To learn more, check out www.invitrogen.com/dynal.

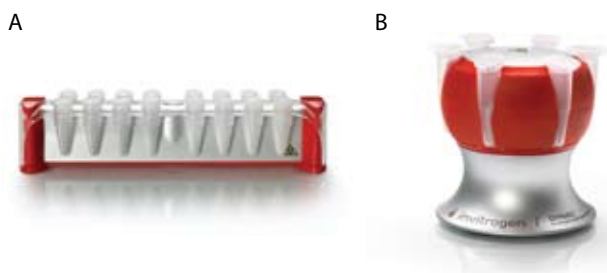


Figure 1—New magnets enable efficient immunoprecipitation. The new DynaMag™-2 (A) and DynaMag™-Spin (B) magnets combine strong magnetic attraction with flexible and efficient ergonomic design. Sample racks from both magnets can be removed from the magnet base for vortexing or manual handling of your sample vials.

Table 1—Binding characteristics of different immunoglobulins (Ig). Native protein G and protein A differ in their binding to Ig classes from different species and subclasses. For example, human IgG3 will bind strongly to protein G, but only weakly to Protein A. S: strong binding; M: medium binding; W: weak binding; N: no binding.

Species	Ig class	Protein A	Protein G
Human	Total Ig	S	S
	IgG1, IgG2, IgG4	S	S
	IgG3	W	S
	IgD	N	N
	IgA, IgM	W	N
	Fab	W	W
Mouse	ScFv	W	N
	Total Ig	S	S
	IgG1	W	M
	IgG2a, IgG2b, IgG3	S	S
Rat	IgM	N	N
	Total Ig	W	M
	IgG1	W	M
	IgG2a	N	S
Goat	IgG2b	N	W
	IgG2c	S	S
	Total Ig	W	S
Sheep	IgG1	W	S
	IgG2	S	S
	Total Ig	W	S
Cow	IgG1	W	S
	IgG2	S	S
	Total Ig	W	S
Horse	IgG(ab)	W	N
	IgG(c)	W	N
	IgG(T)	N	S
	Total Ig	S	S
Rabbit	Total Ig	S	W
Dog	Total Ig	S	W
Cat	Total Ig	S	W
Pig	Total Ig	S	W
Guinea pig	Total Ig	S	W
Chicken	Total Ig	N	N

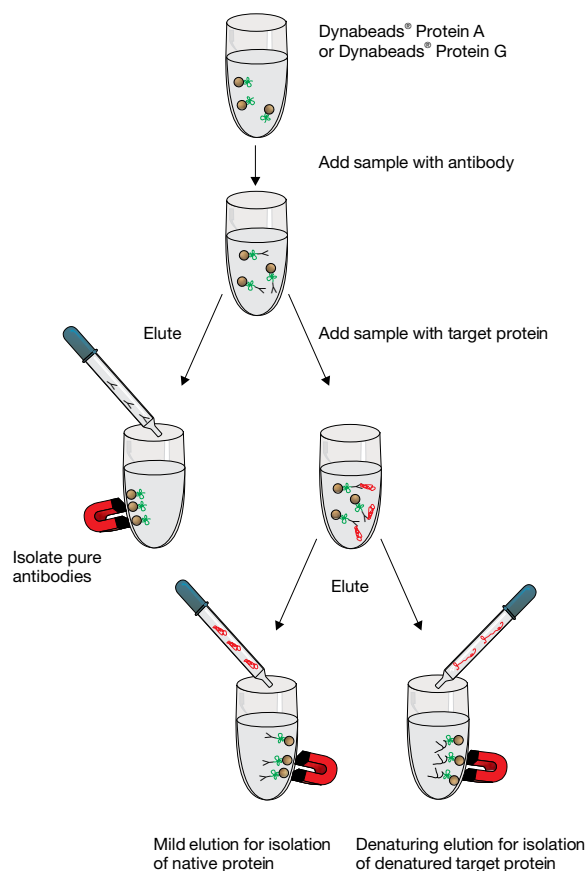


Figure 2—Immunoprecipitation in only 30 minutes. Dynabeads® precoupled with protein A or protein G act as a suspendable solid support that can be fixed by the use of a magnet. This allows for simple and efficient antibody capture, followed by immunoprecipitation of your pure target peptides, proteins, protein complexes, or other antigens.

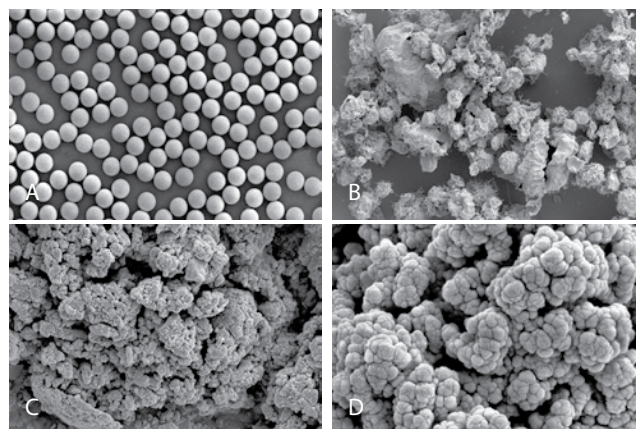


Figure 3—Dynabeads® reduce variability in your research. (A) Uniform, monodisperse superparamagnetic Dynabeads® are manufactured with highly controllable product qualities and to a unique level of reproducibility within and between batches. (B–D) Magnetic particles from alternative suppliers.

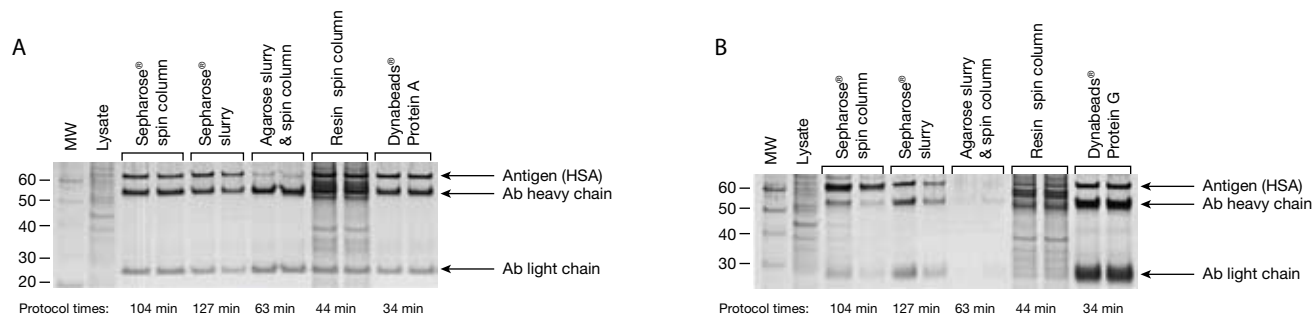


Figure 4—Shorter protocol time and better yields with Dynabeads®. The same input of antibodies (Ab) and cell lysate was used for all IP protocols. With Dynabeads® Protein A (A) and Dynabeads® Protein G (B), all the antibodies on the bead surface are accessible for optimal, highly reproducible antigen binding.

Which product suits your research best?

Protein A and protein G have high specificity for immunoglobulins (Igs). The specific binding strength will depend on the species and Ig subclass (Table 1). Dynabeads® Protein A and Dynabeads®

Protein G have a binding capacity of 250 µg human IgG per milliliter of beads. Predominant Fc binding allows optimal Ig orientation and enhances performance in immunoprecipitation.

Ordering information

Product	Quantity	Cat. no.
Immunoprecipitation Kit—Dynabeads® Protein A Complete kit with Dynabeads® Protein A (2 ml) and required buffers	1 kit (40 IP reactions)	100-06D
Dynabeads® Protein A Magnetic beads coupled with recombinant protein A	1 ml (~40 mg/ml) 5 ml (~40 mg/ml)	100-01D 100-02D
Immunoprecipitation Kit—Dynabeads® Protein G Complete kit with Dynabeads® Protein G (2 ml) and required buffers	1 kit (40 IP reactions)	100-07D
Dynabeads® Protein G Magnetic beads coupled with recombinant protein G	1 ml (~30 mg/ml) 5 ml (~30 mg/ml)	100-03D 100-04D
DynaMag™-2 Magnet holding up to 16 standard 1.5–2 ml microcentrifuge tubes. Working volume: 10–2,000 µl	1 unit	123-21D
DynaMag™-Spin Magnet holding up to 6 standard 1.5 ml microcentrifuge tubes. Working volume: 10–1,500 µl	1 unit	123-20D

A selection of surface-activated Dynabeads®, and Dynabeads® with streptavidin or secondary antibodies coupled to their surface, are also available. To see our full range of Dynabeads® for immunoprecipitation, and to explore further details, protocols,

and references, please visit www.invitrogen.com/immunoprecipitation. See www.invitrogen.com/antibodies to find antibodies validated for immunoprecipitation.



DYNAL® has pioneered magnetic separation technologies for biological discovery that are both simple and highly reproducible. Based on their patented superparamagnetic, monodisperse beads, Dynabeads® technologies represent a superior paradigm for cell and biomolecule separation in a wide range of basic and clinical research applications, diagnostic assays, and therapeutic protocols.



www.invitrogen.com