



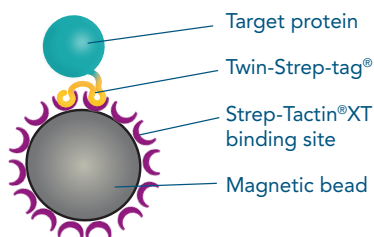
MAGSTREP® STREP-TACTIN®XT BEADS

Protein purification from small to large sample volumes



Watch video
tutorial

MAGSTREP® STREP-TACTIN®XT BEADS



MagStrep® Strep-Tactin®XT beads are a fast and easily scalable solution for protein affinity purification. Superior target protein purity is achieved by the high affinity and specific interaction of Strep-tag®II and Twin-Strep-tag® proteins with the Strep-Tactin®XT coating on the beads.

They are perfectly suited for:

- > Protein-protein interaction analysis via pull-down
- > Batch purifications with small or large sample volumes
- > High-throughput protein purification with liquid handlers

Content	Cat. No.
2 ml	2-5090-002
10 ml	2-5090-010

Specifications:

- > High affinity to Strep-tag®II and Twin-Strep-tag® (nM-pM range)
- > Highly specific interaction
- > Low non-specific protein binding
- > High binding capacity (42.5 µg/µl beads)
- > Mild elution with biotin

EFFICIENCY AND PURITY

The magnetic properties of the beads speed up protein purification through rapid separation of the beads from the supernatant using a magnet. This reduces processing time and allows for quick purification of proteins. Target proteins are purified with outstanding purity due to the unique surface properties of the magnetic beads resulting from a combination of the high specificity of Strep-Tactin®XT and targeted elution with biotin.

In order to show the efficiency and purity, various proteins were purified from spiked *E. coli* lysate. All proteins tested achieved a purity greater than or equal to 82% (Fig. 1A). Specific capture and purity is shown for αCD45 nanobody fused with the Twin-Strep-tag® as an example (Fig. 1B).

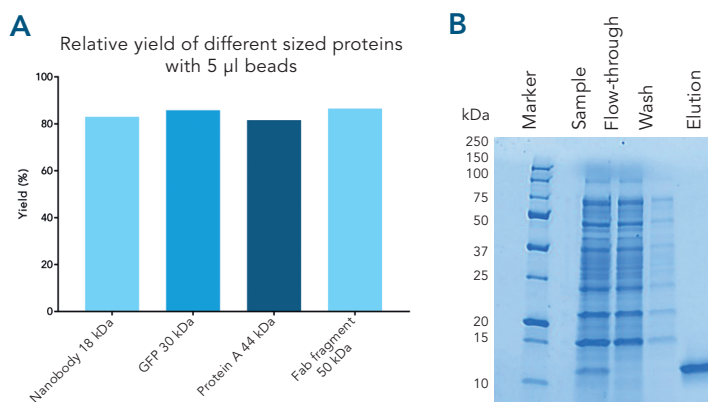


Fig. 1. Specific capture, high yield and target protein purity.

MagStrep® Strep-Tactin®XT beads enable efficient protein purification within a few minutes. To demonstrate this, GFP-Twin-Strep-tag samples were incubated with magnetic beads for different periods of time. An incubation time of only 10 minutes is sufficient to purify almost the entire amount of protein (Fig. 2).

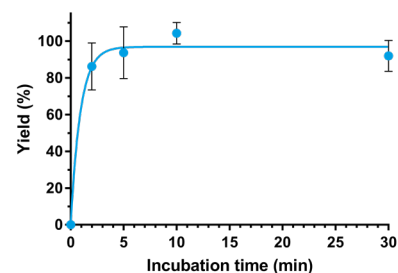


Fig. 2. Time-saving protein purification.

EASY SCALABILITY OF THE PURIFICATION PROCESS WITH OPTION FOR RE-USE

Magnetic bead-based purification is easily scalable, making it suitable for processing small to large volumes of sample. The purification process can be easily adapted to different sample sizes, ranging from small scale high-throughput screenings to large scale protein production.

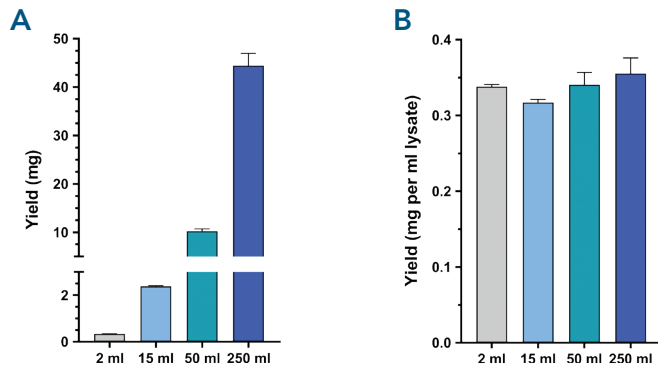


Fig. 3. Linear scalability of the purification process while maintaining the yield per ml of lysate.

Scalability of the protein purification with MagStrep® Strep-Tactin®XT beads was tested by purifying αCD45 nanobody fused to a Twin-Strep-tag® from different sample sizes (2-250 ml). Separation occurred with a SepMag® A200ml biomagnetic separator. Scaling up the purification results in an increasing amount of isolated protein (Fig. 3A) while maintaining the yield per ml of lysate (Fig. 3B).

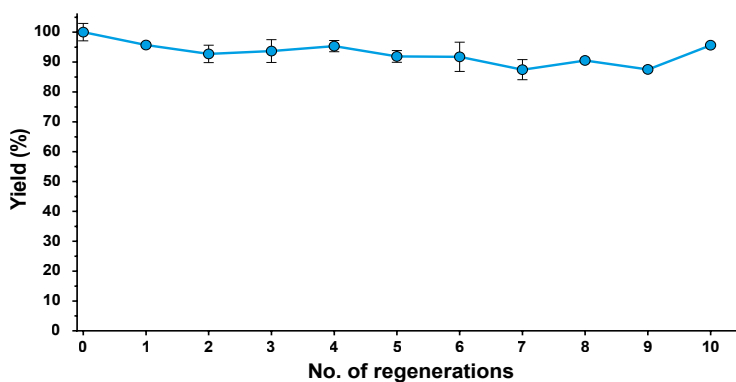


Fig. 4. Fast and easy regeneration of MagStrep® Strep-Tactin®XT beads with 100 mM NaOH.

After each purification, MagStrep® Strep-Tactin®XT beads were regenerated with 100 mM NaOH for 2 min. Protein binding capacity remained stable for at least 10 regeneration cycles, saving costs especially in large-scale applications (Fig. 4).



Read more about flexible scaling of protein purification with magnetic beads in this application note:

From early screening to large scale production



HIGH-THROUGHPUT SCREENING AND AUTOMATION

Magnetic bead-based purification can be easily automated using robotic systems. Automated protein purification systems are fast and deliver reproducible results, making them ideal for high-throughput applications such as drug discovery and screening.

Automation and parallel protein purification with MagStrep® Strep-Tactin®XT beads were tested using a Tecan Fluent®. αCD45 nanobody fused to a Twin-Strep-tag® was purified in parallel from 88 samples. Purity was analyzed using Bioanalyzer on a Protein 230 Chip (Fig. 5A). Consistently high recovery and purity was achieved across all samples (Fig. 5B).

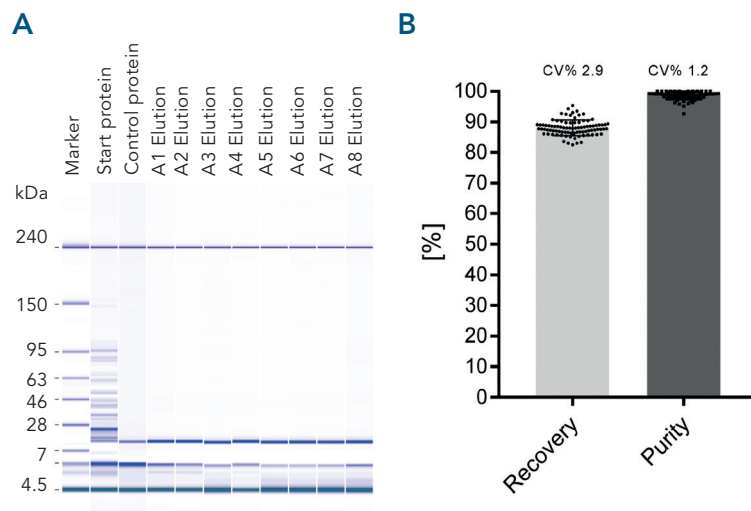
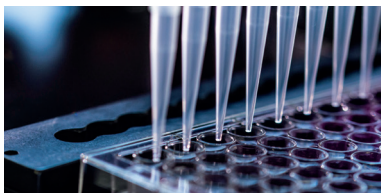


Fig. 5. Automated protein purification with high recovery and purity.

OPTIMIZATION OF MAGNETIC BEAD PURIFICATION



Discover more data to help you optimize magnetic bead purification:



Depending on your experimental conditions, it's possible to optimize the purification protocol and increase protein yield by adjusting specific parameters:

Bead volume

The more beads are used, the more target protein can be bound in a short time.

Incubation time

An increase of the incubation time for several minutes can increase the amount of bound protein and consequently the protein yield.

Protein concentration

In high concentrated samples, protein and bead can quickly find each other. This facilitates the purification of as much protein as possible.

MagStrep® Strep-Tactin®XT beads can be used with any laboratory equipment – only a suitable magnet is needed. They can be used for purification from small to large sample volumes as well as for high-throughput sample preparation with consistent purity, yield and processing time.