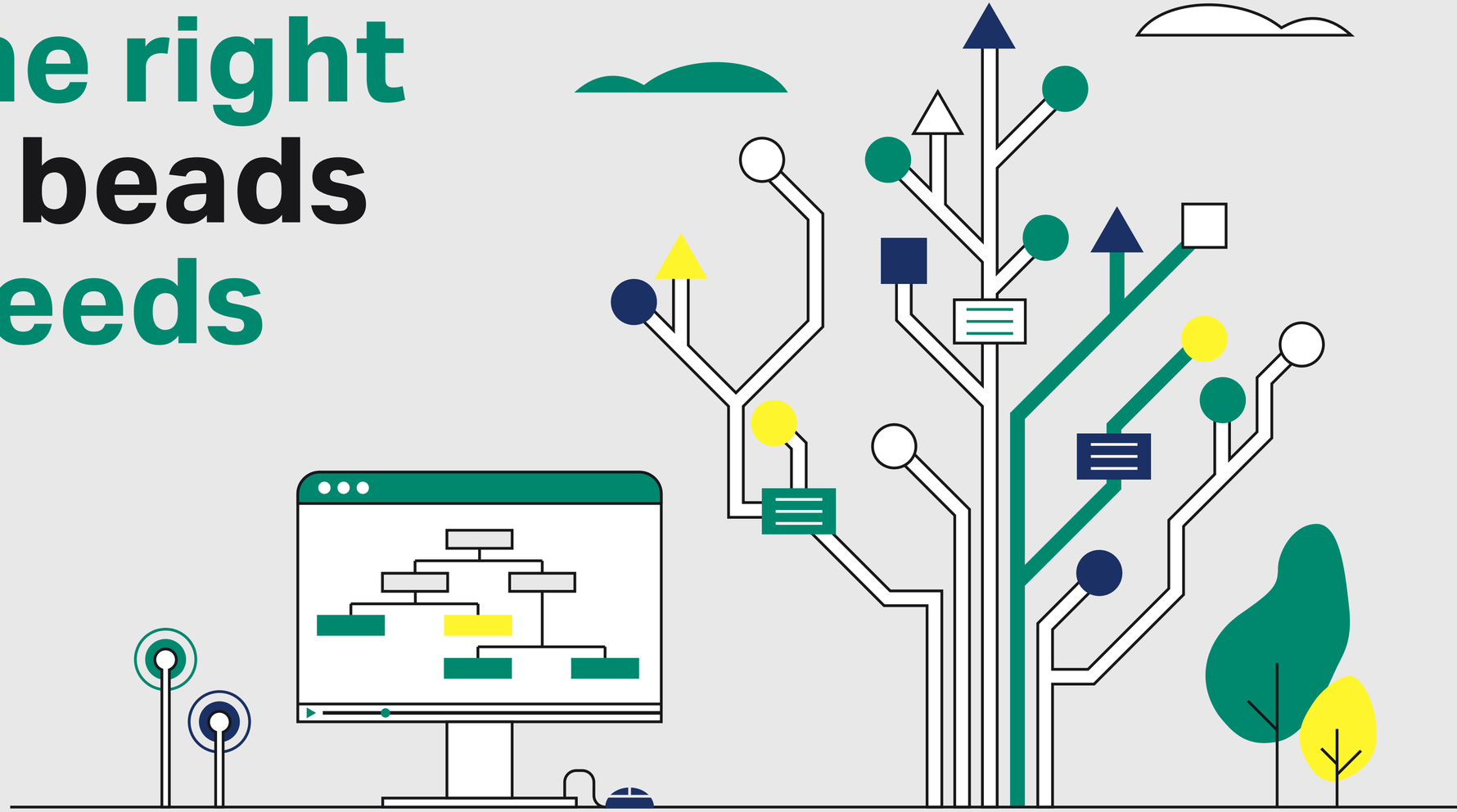
Decision tree

Choose the right magnetic beads for your needs



cytiva

1. Choosing the right magnetic beads for your research applications

Magnetic bead-based kit

Magnetic bead

What type of molecule do you work with?

Nucleic acids

Which downstream application are you using?

PCR

Cleanup

Sera-Mag™ Select size selection and PCR clean-up reagent

Sera-Mag carboxylate-modified magnetic beads

If you are looking for faster speed to magnet

Sera-Mag carboxylate-modified speedbeads*

Sequencing

Which type of sequencing do you use?

Sanger

Dye terminator cleanup

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NGS

DNA sequencing

Target enrichment

Sera-Mag streptavidin magnetic beads

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Sera-Mag streptavidin-blocked speedbeads*

Library cleanup

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mRNA Capture

Sera-Mag oligo (dT) magnetic beads

Library cleanup

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Which analyte are you extracting?

Genomic DNA

Sera-Xtracta™ HMW DNA kit

Sera-Xtracta virus/pathogen kit

SeraSil-Mag™ silica-coated magnetic beads

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Cell-free DNA

Sera-Xtracta cell-free DNA kit

SeraSil-Mag silica-coated magnetic beads

Total RNA

Sera-Xtracta virus/pathogen kit

SeraSil-Mag silica-coated magnetic beads

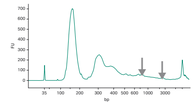
mRNA

Sera-Mag oligo (dT) magnetic beads

Check out

Application note: Isolation of cfDNA in serum using Sera-Xtracta cell-free DNA kit

Performance evaluation for Sera-Xtracta cell-free DNA kit in a targeted NGS biomarker discovery workflow, using serum from stage IV, non-small cell lung cancer (NSCLC) and colorectal cancer (CLC) patient samples. ▶



Check out

Application note: Sensitive detection of total nucleic acid (RNA and DNA) from swabs, blood, and transport media using Sera-Xtracta virus/pathogen kit

This application note demonstrates the proof of concept for using our Sera-Xtracta virus/pathogen kit for purification of DNA/RNA viruses and bacteria from oropharyngeal swabs and blood. ▶

Key facts on SeraSil-Mag silica-coated magnetic beads

- Available in (submicroscale diameters 700 and 400 nm), offering high binding capacity due to the small-sized particles.
- Beads are monodispersed with narrow size distribution for consistent, reproducible results.
- Silanol hydroxyl groups on the bead surface give efficient, high-purity isolation of nucleic acids.

Key facts on Sera-Mag oligo (dT) magnetic beads

- Encapsulation means no exposed iron and minimized interference with downstream enzymatic applications
- Covalently bound oligo(dT)14 prevents leaching from the particle surface
- Very high, specific poly A+ binding capacity ensures maximum extraction of mRNA

Proteins

Which type of purification or screening are you undertaking?

Small scale antibody purification

Are you looking for a ready made affinity or custom ligand?

Ready made affinity

Protein A affinity

Protein A Mag Sepharose™ Xtra magnetic beads

Protein G affinity

Protein G Mag Sepharose Xtra magnetic beads

Custom ligand

Specific ligand conjugation

NHS Mag Sepharose magnetic beads

Did you know?

Protein A Mag Sepharose Xtra magnetic beads are designed for rapid antibody purification, as well as monoclonal and polyclonal antibody screening from serum and cell supernatants.

Antibody screening

Are you looking for a ready made affinity or custom ligand?

Ready made affinity

Protein A affinity

Protein A Mag Sepharose Xtra magnetic beads

Protein G affinity

Protein G Mag Sepharose Xtra magnetic beads

Custom ligand

Would you like to conjugate directly?

Specific ligand conjugation

NHS Mag Sepharose magnetic beads

Would you like to use biotinylated ligands?

Biotinylated ligand

Streptavidin Mag Sepharose magnetic beads

Streptavidin Mag Sepharose magnetic beads are designed for:

- High-capacity, small-scale purification of proteins from cell lysates and biological fluids
- Easy parallel screening of proteins with high repeatability
- Simple enrichment of proteins from small or large sample volumes (low microliter to high milliliter scale)

Protein purification

Which type of protein purification do you want to do?

Total protein capture e.g. for Mass Spec analysis

Sera-Mag carboxylate-modified speedbeads*

His tagged protein purification

Purifying from within cells

His-Mag Sepharose Ni magnetic beads

Secreting proteins

His Mag Sepharose excel magnetic beads

Immunoprecipitation/ pull down

Would you like to conjugate directly?

Specific ligand conjugation

NHS Mag Sepharose magnetic beads

Would you like to use biotinylated ligands?

Biotinyated ligand

Streptavidin Mag Sepharose magnetic beads

* Sera-Mag carboxylate-modified speedbeads and Sera-Mag streptavidin-blocked speedbeads are available in 1 µm and 3 µm nominal diameters.

Using magnetic separation racks

Magnetic separation racks provide a quick and easy method to purify specific proteins, nucleic acids, and other biomolecules. The target biomolecules are separated from biological samples using magnetic beads. A magnetic force is applied to the sample mixture, and the molecule of interest, which is coated on the magnetic beads, is separated from the mixture. The magnetic separation technique has applications in DNA and mRNA purification, cell isolation, and protein purification. ▶

How-to-Guide

Find out more about magnetic bead binding capacity and specificity in our How-to-Guide: Optimizing magnetic bead specificity and binding capacity. ▶

Sera-Mag carboxylate-modified speedbeads

Protein and peptide single-pot solid-phase-enhanced sample preparation (SP3) with Sera-Mag carboxylate-modified speedbeads is a novel technique that takes advantage of convenient carbodiimide chemistry, low non-specific binding, and fast reaction kinetics to enable the fast and efficient removal of a wide range of detergents, salts, and other contaminants from protein and peptide samples prior to mass spectrometry analysis.

Read more ▶

5% off

Test your knowledge on magnetic beads

Take our quick quiz and receive 5% off your online Sera-Mag beads purchase. ▶

2. Choosing the right magnetic beads for your diagnostic applications

Magnetic bead-based kit

Magnetic bead

Which type of assays are you developing?

Molecular

Which downstream application do you work with?

PCR/Amplification

Which step of the workflow are you using magnetic beads?

Extraction

- Sera-Xtracta HMW DNA kit
- Sera-Xtracta cell-free DNA kit
- Sera-Xtracta virus/pathogen kit
- SeraSil-Mag silica-coated magnetic beads
- Sera-Mag oligo (dT) magnetic beads
- Sera-Mag carboxylate-modified magnetic beads

If you are looking for faster speed to magnet

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Target capture by conjugation of capture oligo

Standard oligo capture

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Biotinlyated oligo capture

- Sera-Mag streptavidin-blocked speedbeads*

Cleanup

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Sequencing

DNA sequencing

Extraction

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Target enrichment

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Library cleanup

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RNA sequencing

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Read more ▶

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Immuno

Which detection method do you work with?

Colorimetric — **Chemiluminescence** — **Fluorescence**

Are you looking for a biotinylated or specific capture system?

Biotinylated capture system

- Sera-Mag NeutrAvidin-coated speedbeads
- Sera-Mag streptavidin magnetic beads

If you are looking for faster speed to magnet

- Sera-Mag streptavidin speedbeads

If you are looking for faster speed to magnet and low non-specific binding

- Sera-Mag streptavidin-blocked speedbeads*

Did you know?

Sera-Mag NeutrAvidin-coated magnetic beads:

- Provide near-neutral isoelectric point — pI = 6.3, more neutral than native avidin
- Are nearly devoid of glycosylation — decreased possibility of lectin binding compared to native avidin
- Provide no known off-target binding domains like streptavidin

Specific capture system

- Sera-Mag amine-blocked speedbeads
- Sera-Mag carboxylate-modified magnetic beads

If you are looking for faster speed to magnet

- Sera-Mag carboxylate-modified speedbeads*

Sera-Mag amine-blocked speedbeads

Sera-Mag amine-blocked speedbeads have a carboxylate-modified core made by free radical emulsion polymerization of styrene and acid monomer. Magnetite (Fe_3O_4) is coated onto this core particle and then encapsulated with propriety polymers. The final surface is blocked using a proprietary method to help prevent nonspecific binding of proteins.

5% off

Test your knowledge on magnetic beads

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Check out our eBook

Want to read more about working with and optimizing magnetic bead experiments?

Spotlight on magnetic beads ▶

Our design process

Customization

Customization is possible for any of our protein and nucleic acid sample preparation, labeling, and detection products including magnetic beads. Our dedicated customization team experts will work with you every step of the way, from defining the product specifications to delivery completion and from completing complex conjugations and formulations to performing your quality control test before the beads leave our factory. Options available:

- Adapting concentrations
- Modifying buffer composition and formulation, containers, dispense volumes
- Conjugating enzymes, antibodies, and custom ligands
- Developing non-standard size particles or functionalities
- Stabilizing magnetic beads for room temperature shipping and storage

Find out more and contact us about your custom project ▶

cytiva.com

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