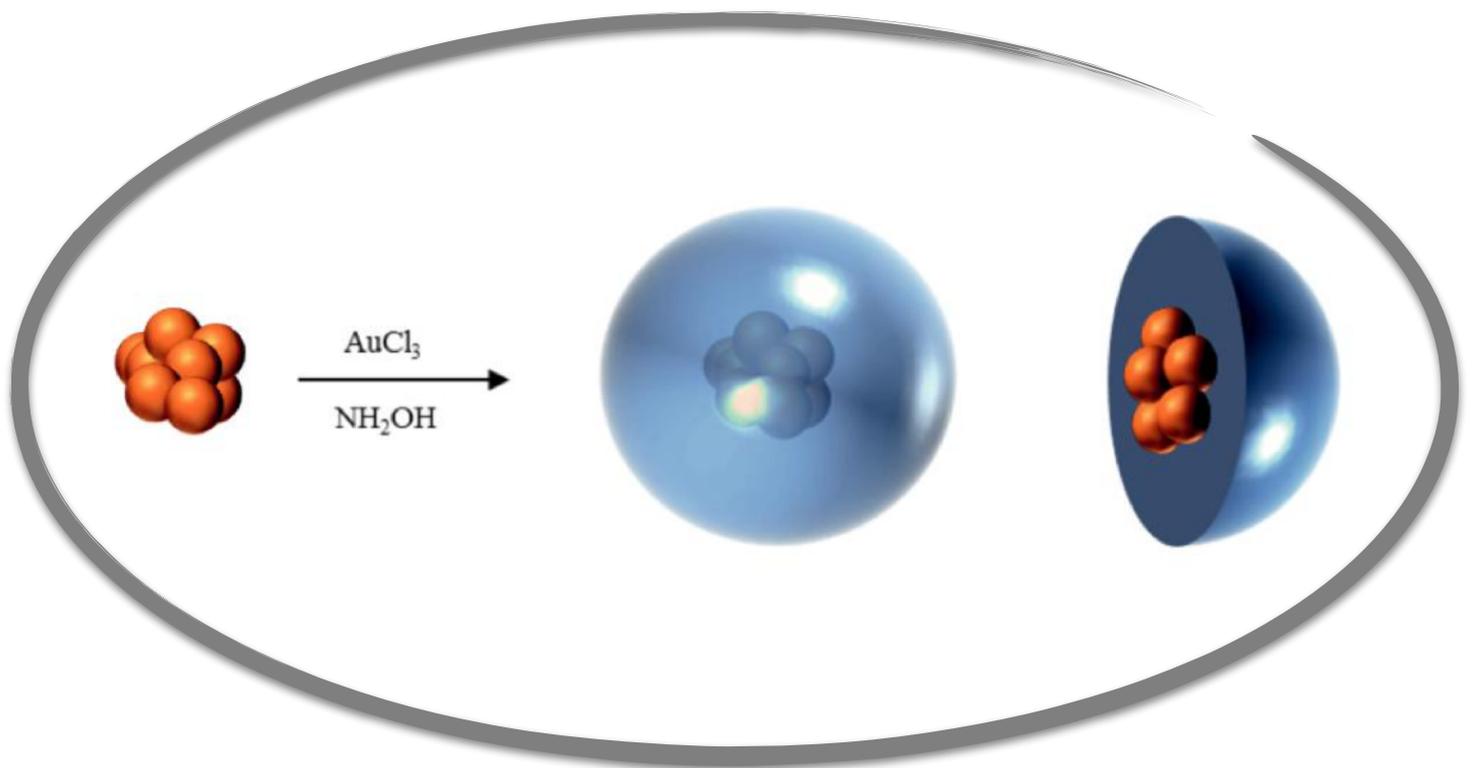




Official distributor of IMMAGINA

Magnetic beads

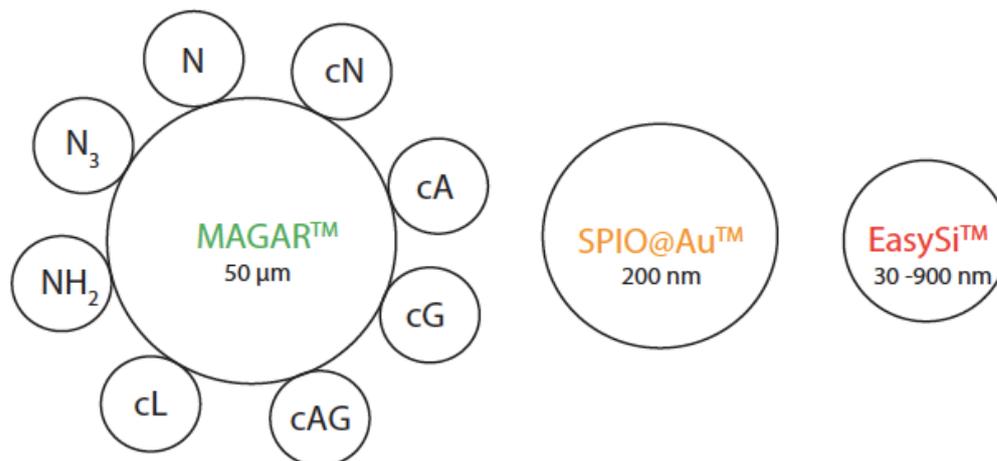


Products catalogue

Biomat, already known for its microplates for ELISA and research and its coated surfaces, is now offering reagents and other substrates for IVD and Research, through the cooperation with qualified suppliers, making available to its customers a complete platform of high quality products.

Magnetic beads separation is a widely used technique thanks to its flexibility

Our range of Magnetic Beads



Our **Magar™** magnetic beads have a magnetic core embedded in a functionalized agarose structure. Different types of functionalization are available. Selected beads are prepared with specific functional groups (e.g., -NH₂, -COOH, -N₃), while other bead products are chemically linked to proteins for dedicated biological purposes (e.g., to capture of biotinylated molecules or to bind of antibodies).

The range of **Magar™** magnetic beads

N, beads functionalized with Neutravidin™

cN, crosslinked beads functionalized with Neutravidin™

cA, crosslinked beads functionalized with protein A

cG, crosslinked beads functionalized with protein G

cAG, crosslinked beads functionalized with protein A and protein G

cL, crosslinked beads functionalized with lectin

NH₂, beads with terminal amino groups

N₃, beads with terminal azido groups.

All **MAGAR** beads are delivered in 10% medium slurry, 1 mL final.

Magar technology

Magnetic agarose microbeads for selective separation

Magar™ magnetic beads are prepared starting from raw materials. These beads have a magnetic core embedded in a functionalized agarose structure. Different types of functionalization are available. Specific beads are prepared with dedicated functional groups (e.g., -NH₂, -COOH, N₃), while other products are chemically linked to proteins (for capture of biotinylated molecules or antibodies binding).

Quality controls are performed to ensure the maximum quality of our product. We perform three main controls in our pipeline:

- (i) test of size distribution
- (ii) test of paramagnetic activity
- (iii) test of the density of functionalization.

The average particle size is 50 μm (Figure 1).

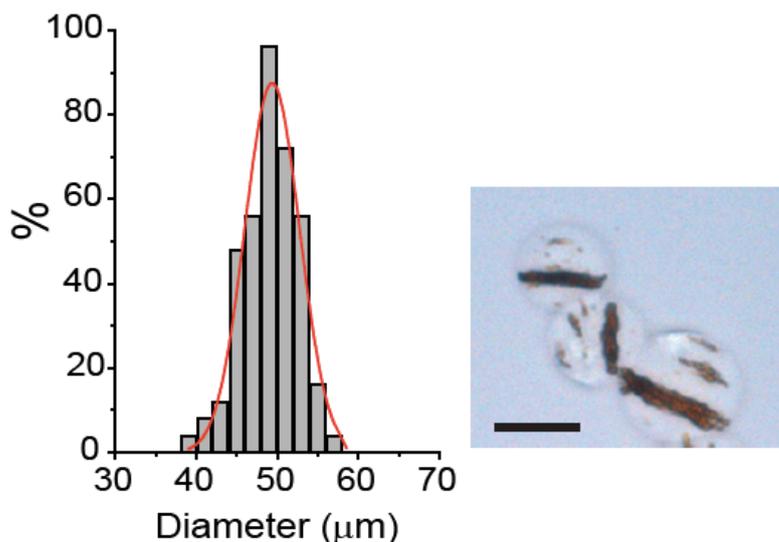


Figure 1. Size distribution of the Magar nano-particles and optical microscopy image. Black bar: 50 μm

The density of functionalization of Magar-N (functionalized with Neutraavidin™) is certified by the labeling of fluorescent biotinylated molecules. For Magar-NH₂, the functionalization is tested through a chemical reaction with a NHS-fluorophore (Figure 2).

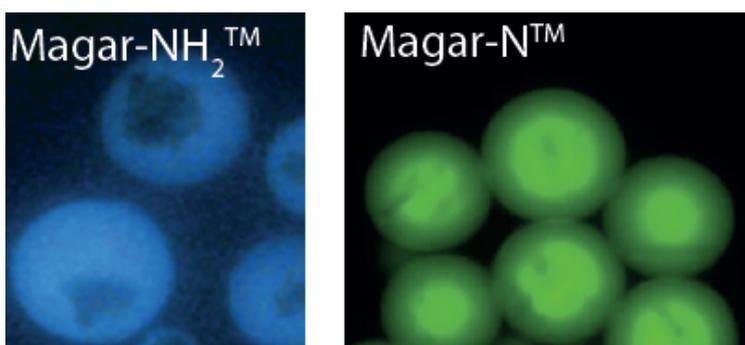


Figure 2. Density of functionalization. Fluorescence microscopy analysis of Magar beads functionalized with different dyes.

The main advantages of our MAGAR technology are (Figure 3 and Figure 4):

- low non-specific binding;
- the competition on price, thanks to a technology that can reduce the cost of production;
- the high stability in suspension, maximizing the binding properties.

The binding capacity is comparable to other commercial products (Figure 3 and Figure 4).

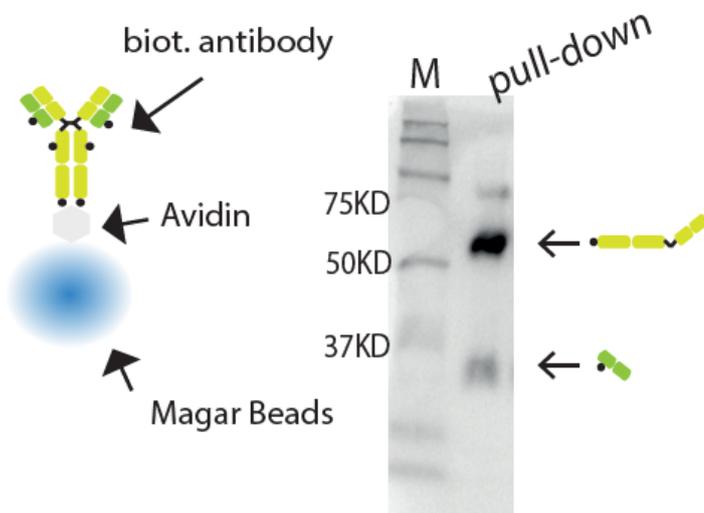


Figure 3. Binding of a biotinylated antibody (Thermo, MA5-15256): M: protein marker. Pull down: elution of the biotinylated antibody after incubation of Magar-N beads with a solution containing 1 μ g of biotinylated anti GFP antibody

Beads can be crosslinked or not crosslinked. Crosslinked beads are stable at 100°C for >10 min. Not crosslinked beads cannot be used at a temperature higher than 40°C; these types of beads are designed for experiments where an ultra-low non-specific binding is required. Beads are made with 2 - 3% agarose, therefore the porosity is around 200 - 500 nm (Figure 5).

Beside this, Immagina BioTechnology offers a service of *custom beads synthesis* that allow customers (i) to choose specific functionalization and (ii) to tune the density of the functional groups on the bead.

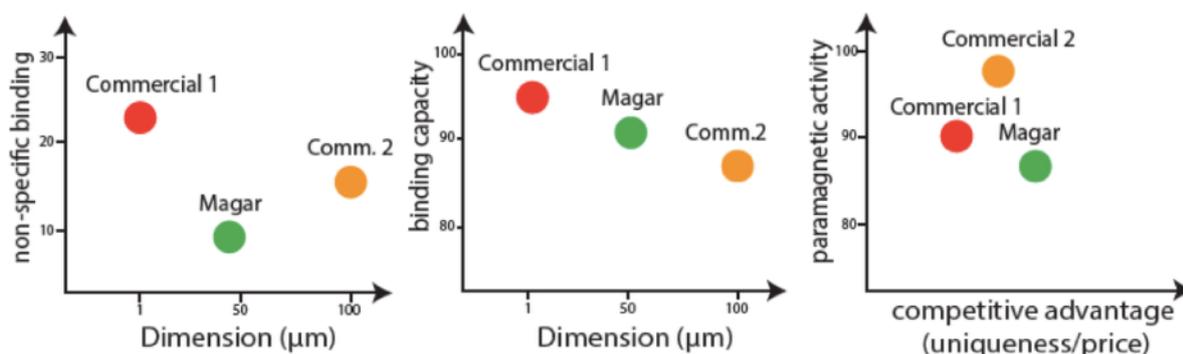


Figure 4. Competitive advantage

EasySi Silica technology

SiO₂ - silica nanoparticles

EasySi are nanospheres with diameters from 30 nm to 500 nm, and are available with bare and amine-terminated surfaces. Other sizes (up to 900 nm), surfaces and larger quantities (up to 500 g) are available as a custom request.

Particles are unagglomerated, stable in water and provided either as a dried powder or in solution at 10 mg/mL; standard silica particles are provided in water and amine-terminated silica particles are provided in 0.1 M acetate buffer.

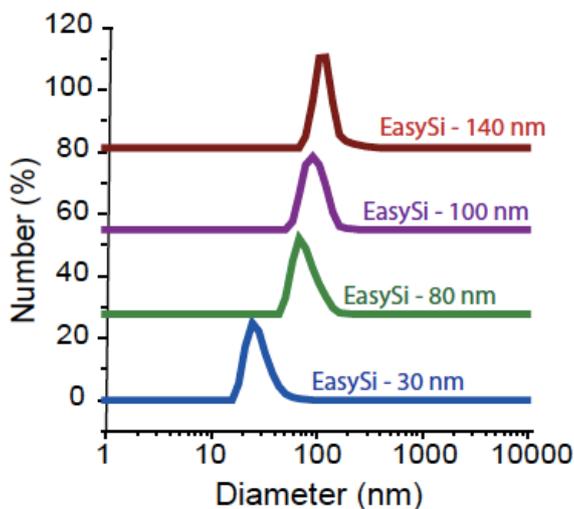


Figure 1. Hydrodynamic diameter distributions measured with Malvern Zetasizer Nano ZS. The mean diameter is reported for each graph



Figure 2. Glass bottle with EasySi particles of 140 nm

- DLS data provided with every batch
- Unagglomerated
- Sizes from 30-200 nm with polydispersity index in DLS < 0.3 (< 0.22 for beads > 100 nm)
- Available with bare silica and amine-terminated surfaces
- Provided in water for bare silica and 0.1 M acetate buffer for amine-terminated silica at a mass concentration of 10 mg/mL or as dried powder
- TEM data provided upon request
- Other sizes, surfaces (e.g. sulfhydryl) and larger quantities are available as a custom request.

Shape: approximately spherical

Application: Biological separations/functionalization, drug delivery and optical imaging

Storage and Handling: +4°C

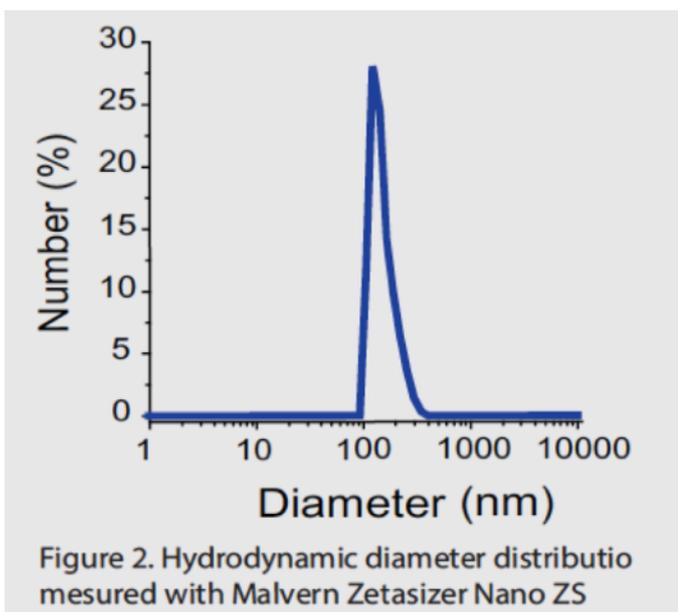
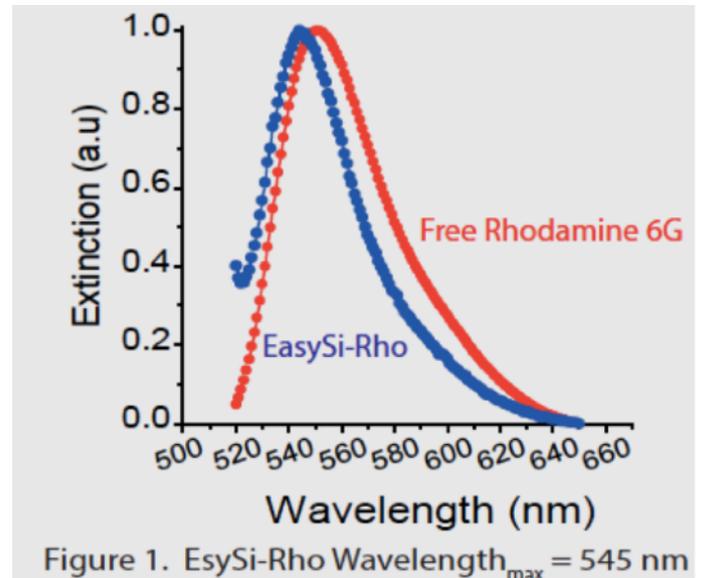
Packaging: glass bottle

EasySi – Fluo Silica technology

SiO₂ - Rho6G (Rhodamine 6G)

With our **EasySi - Fluo technology** we can deliver tailored fluorescent nanoparticles specifically engineered for your needs. We can deliver a broad range of fluorophores. Do not hesitate to contact us to speed up your R&D.

As example, our product SiO₂ - Rho6G are unagglomerated spherical beads of 200 nm with a high fluorescent core (Excitation 510-525 nm) / Emission max = 545)



- UV-Vis and DLS data provided with every batch
- Unagglomerated
- Sizes from 100-500 nm with polydispersity index in DLS < 0.3
- Available with bare silica and amine-terminated surfaces
- Provided in water for bare silica and 0.1 M acetate buffer for amine-terminated silica at a mass concentration of 10 mg/mL or as dried powder
- TEM data provided upon request

Shape: approximately spherical

Application: Biological separations/functionalization, drug delivery and optical imaging

Storage and Handling: +4°C - away from light.

DO NOT FREEZE Packaging: glass bottle

SPIO@Au technology

Gold coated magnetic nanoparticles for selective separation

The SPIO@Au nanoparticles are composed of magnetic nanoparticles (SPIO) coated with a gold shell, which is subsequently functionalized to bind molecules of biological interest (Fig.1).



Nanoparticles are obtained in a single step by using a proprietary procedure. The synthesis is highly reproducible and allows the mass production of SPIO@Au. The nanostructures show excellent chemical stability, magnetic properties and an intense surface Plasmon resonance in the visible-NIR region (Figure 2). The average particle size is about 200 nm with a narrow size distribution. Nanoparticles can be conjugated with thiol-polyethylene glycol containing different terminal functional groups, including amine and azido groups.

To the best of our knowledge, SPIO@Au nanoparticles are the first beads on the market based on gold coated magnetic nanoparticles for biological separation. The main advantages of the SPIO@Au nanoparticles respect to the other commercial magnetic beads are:

- Fast separation time (<10 s)
- Low dimension and high binding surface;
- High chemical stability, inertness and biocompatibility;
- Possibility to tune the density of functional groups on the surface;
- Possibility to have different functional groups on the same nanoparticle.

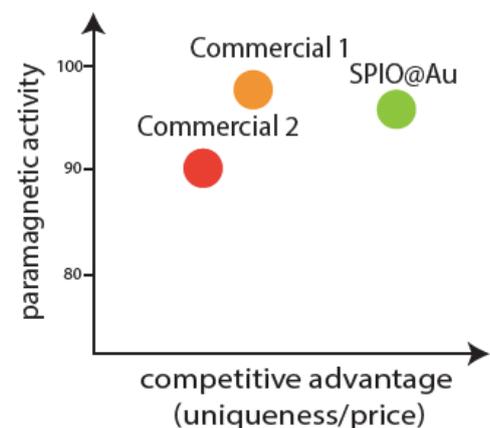
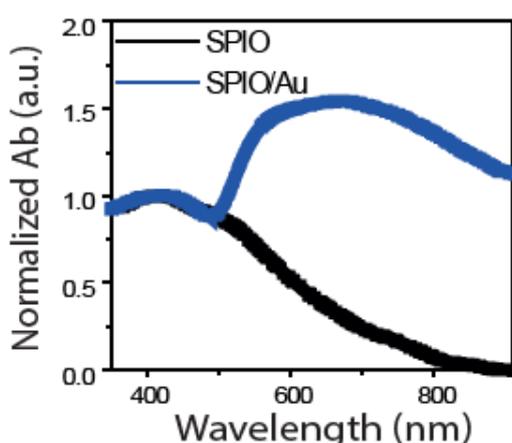


Figure 2. UV-vis absorption of the SPIO and SPIO@Au nanoparticles (left). Competitive advantage of the SPIO@Au (right).

Immagina BioTechnology is a small dynamic company whose core business is the isolation and analysis of translationally active ribonucleic acids (RNAs). Thanks to their expertise, they have developed a line of beads of different dimension and composition.

Their line of products suit the needs of life science labs and pharma companies.

We are the official distributor of



IMMAGINA
· BIOTECHNOLOGY ·

for **Magnetic beads**

CONTACTS

Biomat srl

Via Zeni 8, 38068

Rovereto (TN) – ITALY

Ph. +39 0464 443320

F. +39 0464 443159

info@immunosurface.com

www.immunosurface.com

www.biomat.it