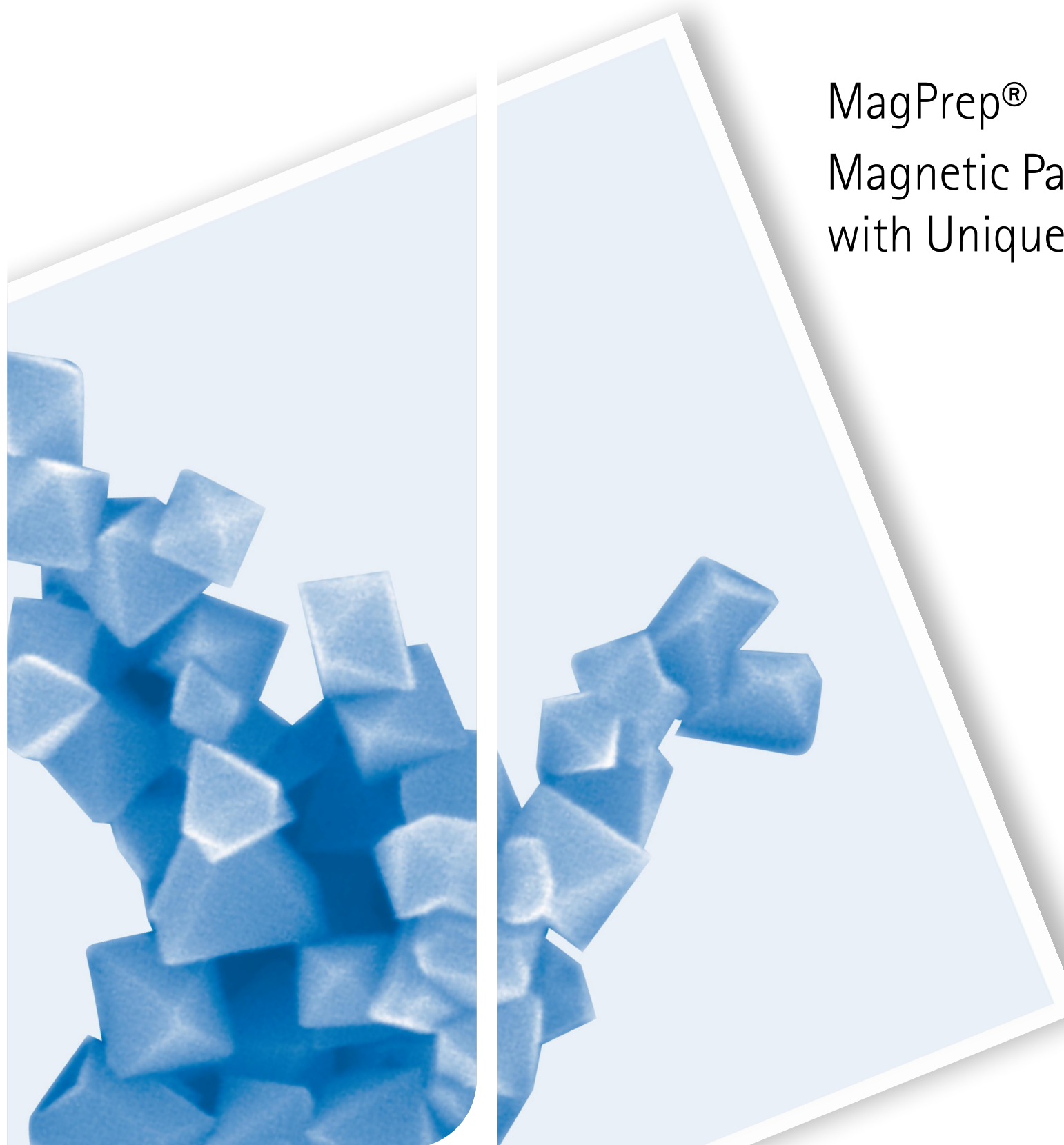


MagPrep®

Magnetic Particles with Unique Features



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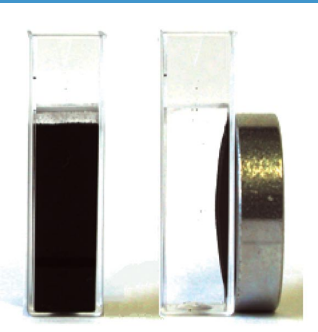
We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.



Magnetic particles are the established alternative to conventional chromatography resins in automated high-throughput protocols replacing centrifugation and filtration by simple magnetic separation steps. MagPrep® particles combine this advantage with unique features like high magnetite content and unporous crystal-like surface which allows them to migrate very fast in magnetic fields while binding target molecules without unspecific adsorption.

MagPrep® Silica

MagPrep® Silica particles were designed to meet the most important requirements to solid supports being used in nucleic acid purification protocols. Unlike common silica supports, MagPrep® Silica binds RNA as well as DNA with very high efficiency. Furthermore, MagPrep® Silica particles do bind nucleic acids under two generic conditions: in the presence of chaotropic reagents as well as under mild acidic buffer conditions. Even more important, nucleic acids bound to the particles tolerate the use of slightly acidic aqueous wash buffers without being released. There is no need to use ethanol during the wash steps. Elution of bound nucleic acids is accomplished by any type of aqueous buffer pHed higher than 8.0.

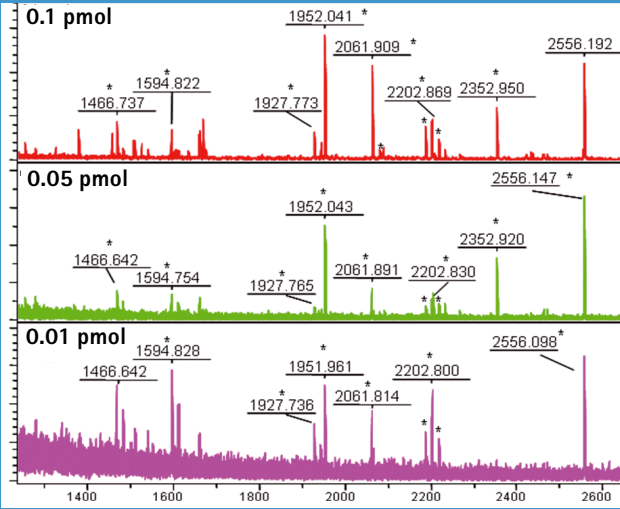


MagPrep® Silica have a particle size of 100-200µm. Homogenized suspensions of the particles are stable for up to 5 minutes without further agitation. Magnetic clearance of the suspension takes less than 15 seconds. These properties are particular useful for high-throughput applications.

Three variations of the particles are available: basic MagPrep® Silica, the “MS” type and the “HS” type. HS-type particles are highly selective for binding primarily DNA whereas basic MagPrep Silica binds also strongly RNA depending on the binding conditions. The MS-type represents the intermediate of the two. This set of particles allows for selection of the best candidate for the each and every application and sample type in nucleic acid purification procedures.

MagPrep® TiO2

MagPrep® TiO2 particles are magnetite crystals coated with a dense layer of titanium dioxide. The black particles have a mean diameter of 200 nm and can be separated using a magnet or a centrifuge. TiO2 is generally regarded as an efficient and robust material for phosphopeptide enrichment and established protocols are already available. Interestingly, different types of TiO2 materials exhibit varying enrichment profiles for phosphopeptides. MagPrep® TiO2 is optimised for the enrichment of phospho- as well as glycopeptides prior to mass spectrometry. The particles are highly selective for both, monophosphorylated and multiphosphorylated peptides and show very low affinity towards acidic peptides. The MALDI mass spectra demonstrate the highly selective enrichment detecting phosphopeptides in the 0,01 pmol range. Thus, TiO2 magnetic particles can be used for automated protein phosphorylation studies on complex biological samples.



The second generation of MagPrep® particles are based on a novel production procedure and are truly monodispersed nanoparticles which can be manufactured in the range of 10 to 100 nm with a surface area of 200 - 20 sqm per gram. The product line described below represents the first introduction of such novel particles characterized by a magnetite content of over 90% and a particle size of 25nm. To further extend the binding capacity of these particles they are encapsulated with a carboxylated tentacle polymer for the covalent immobilization of affinity ligands like protein A, streptavidin or specific antibodies.

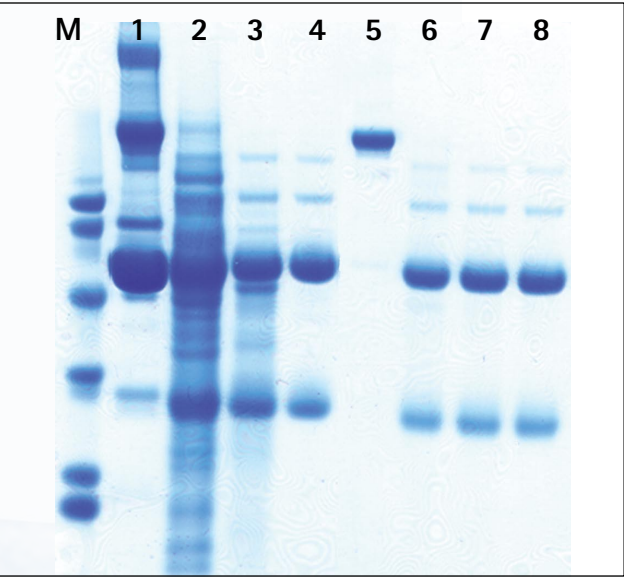
MagPrep® P-25 Protein A

is a suspension of 25 nm particles with Protein A covalently coupled on their surface. Particles are used for capturing immunoglobulins from a variety of samples like plasma, cell culture supernatants or other aqueous solutions. The loaded particles with Protein A-IgG complex can be used for immunoprecipitation of target antigens.

The gel picture show the specific capture of 100µg of IgG spiked to various protein solutions. Lane 1 represents human plasma diluted 1:25, lane 2 equals spiked E.coli lysate diluted 1:4, lane 3 equals spiked yeast lysate diluted 1:4 and lane 4 equals 100 µg of human IgG used for spiking. Lane 5 – 8 show the corresponding eluates after incubation and washing 0,5mg MagPrep P-25 Protein A. Except for sample #5, all the other eluates were treated

Particle sample	Yield µg IgG per mg particle
MagPrep® P-25	260
competitor D	33
competitor Q	38
competitor B	40

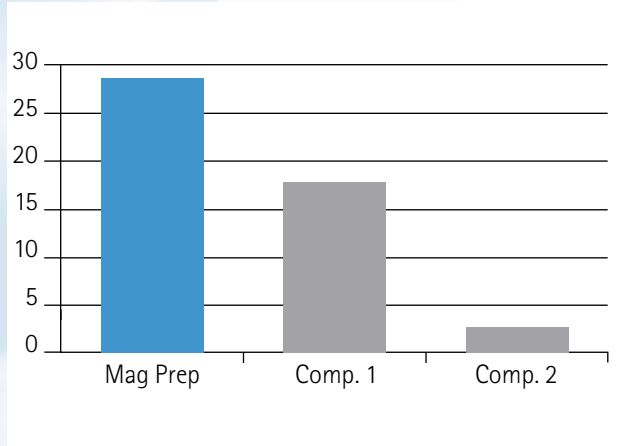
with DTT and IgG's two subunits can be seen. The table give the µg amounts of IgG per mg particle in comparison to some competitors products and dem-



onstrate the extremely high binding capacity of these new nanoparticles.

MagPrep® P-25 Streptavidin

is a suspension of 25 nm particles covalently coated with Streptavidin. Particles can be used for affinity capture of biotinylated molecules such as proteins and nucleic acids labelled with biotin. In order to determine the binding capacity of MagPrep P-25 Streptavidin particles for dsDNA a 5'-biotinylated oligonucleotide was annealed to its complement to generate a 33-bp long dsDNA fragment. Particles were incubated with this biotinylated dsDNA as well as a “no bead” control sample for 30 minutes. After separation of the particles the amount of unbound DNA in the supernatant was measured and then calculated by subtraction from the control. The results clearly demonstrate the superior performance of the MagPrep P-25 Streptavidin particles in comparison to other competitor products.



MagPrep® P-25 Carboxy

is a suspension of 25 nm particles coated with a polymer and active carboxy groups which can be used for covalent attachment of ligands to the surface. The amount of protein which can be immobilized on the surface is in the range of 100 µg/mg particles. One of various immobilisation protocols which can be used with this product is given in the

Designation	Pack sizes* ()	Concentration	Cat.No.
MagPrep® Silica	1ml, 50ml	50mg/ml	1.01193
MagPrep® Silica MS	1ml, 5ml	50mg/ml	1.01644
MagPrep® Silica HS	1ml	50mg/ml	1.01899
MagPrep® TiO2	0,1ml, 1ml	50 mg/ml	1.01642
MagPrep® P-25 Carboxy	5ml	25mg/ml	1.02510
MagPrep® P-25 ProteinA	5ml	1mg/ml	1.02540
MagPrep® P-25 Streptavidin	5ml	5mg/ml	1.02550

* Larger pack sizes and bulk quantities are available upon request