SILICA MICROSPHERES

Carboxyl Silica

SiO_2 with carboxyl (COOH) surface groups for the covalent attachment of biomolecules, supplied dry. See PDS 702.

Catalog Number	Nominal Diameter	Specification Range
SC03000	0.500µm	0.460 - 0.540µm
SC04000	1.00µm	0.95 - 1.05µm
SC05000	2.00µm	2.80 - 2.20µm
SC05001	5.00µm	4.80 - 5.20µm

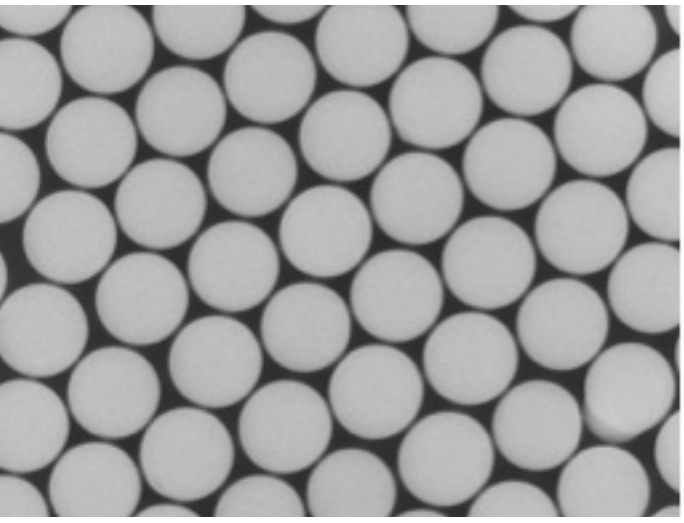
Carboxyl silica unit size is 1.0 gram. Please see BangsLabs.com for pricing or contact a local agent.

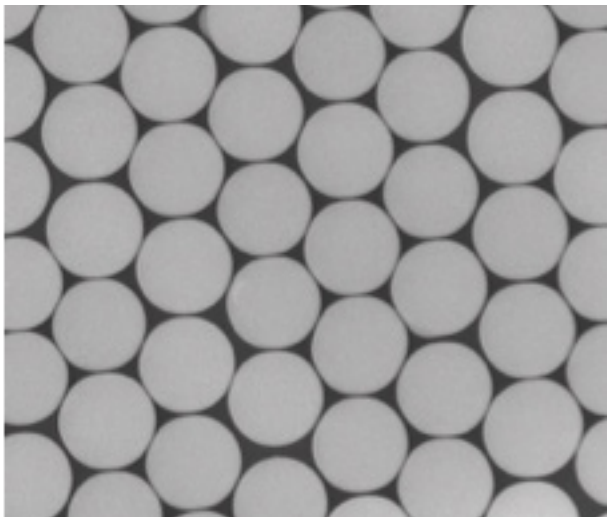
Amine Silica

SiO_2 with amine (NH_2) surface groups for the covalent attachment of biomolecules, supplied dry. See PDS 702.

Catalog Number	Nominal Diameter	Specification Range
SA03000	0.500µm	0.460 - 0.540µm
SA04000	1.00µm	0.95 - 1.05µm
SA05000	5.00µm	4.80 - 5.20µm

Amine silica unit size is 1.0 gram. Please see BangsLabs.com for pricing or contact a local agent.





Streptavidin Coated Silica

SiO_2 with a streptavidin coating for the attachment of biotinylated molecules, supplied at 1% solids (10mg/mL). See TN101 and PDS 702.

Catalog Number	Nominal Diameter	Specification Range
CS01000	0.500µm	0.460 - 0.540µm
CS01001	1.00µm	0.95 - 1.05µm
CS01002	5.00µm	4.80 - 5.20µm

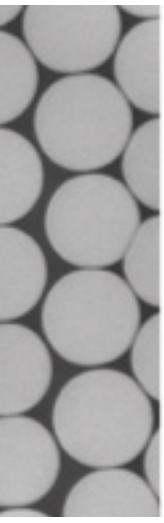
Streptavidin coated silica comes in volumes of 1mL, 2mL, 5mL, or 10mL. (~1% solids 10mg/mL) Please see BangsLabs.com for pricing or contact a local agent.

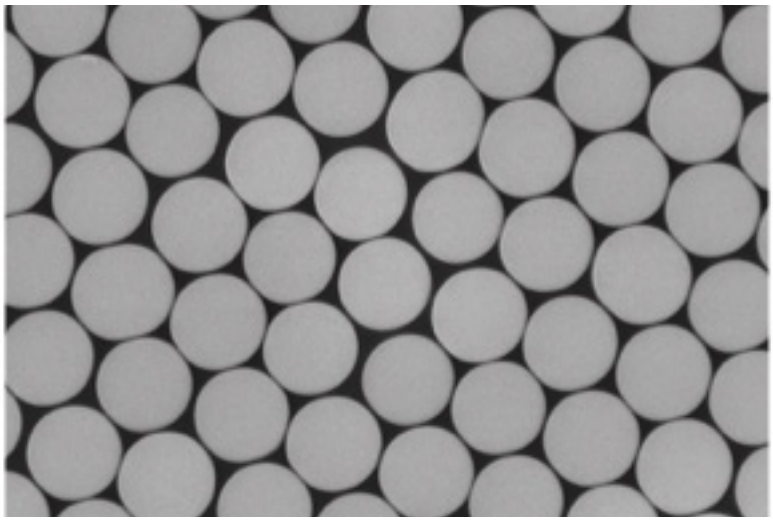
Silica Bind-IT™

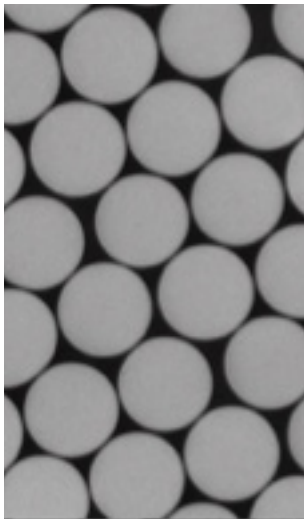
Silica Bind-IT™ are pure SiO_2 with a pre-activated surface that allows ready binding of antibody without sacrificing stability. Provided at 2.5% solids (25mg/mL) in two nominal diameters, 1µm and 5µm. See PDS 737.

Catalog Number	Nominal Diameter	Specification Range
SB04000	1.00µm	0.95 - 1.05µm
SB06000	5.00µm	4.80 - 5.20µm

Silica Bind-IT comes in volumes of 2mL, 5mL, or 10mL. (~2.5% solids 25mg/mL) Please see BangsLabs.com for pricing or contact a local agent.







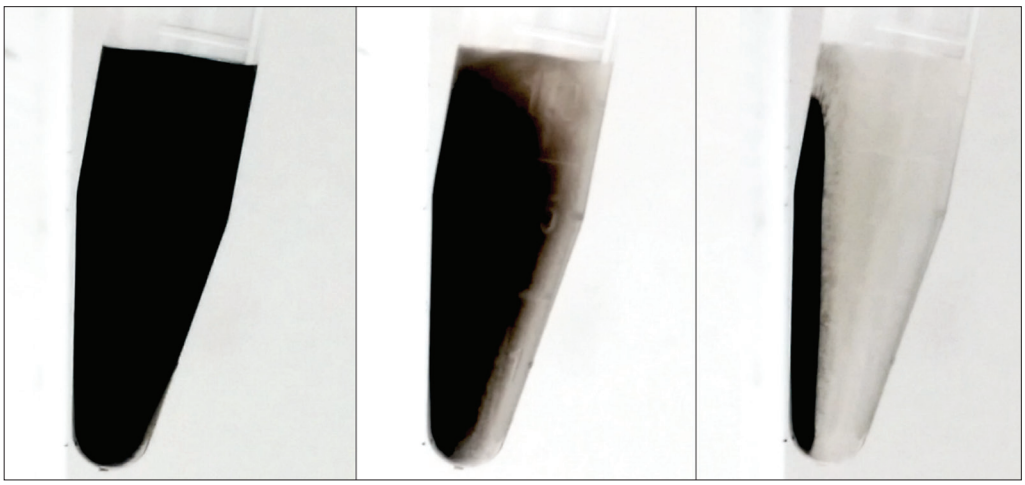
MAGNETIC MICROSPHERES & PARTICLES

Superparamagnetic particles have been utilized extensively in diagnostic and other research applications for the capture of biomolecules and cells. They confer a number of benefits, including ease of separation and suitability for automation. Magnetic particle-based diagnostic assays demand the highest performance in terms of physical handling, ligand binding characteristics, and signal-to-noise ratios. Bead composition directly impacts settling and magnetic separation profiles, which have implications for assay parameters such as incubation times for binding and elution steps, buffer changes, etc. Most importantly, the composition impacts specific / nonspecific binding characteristics, and background signal arising from the particle itself. These factors have a direct impact on the sensitivity and dynamic range of the assay.

Our comprehensive magnetic particle offerings allow us to address the unique requirements of specific assay systems, with options for particle diameter, morphology, surface properties, separation profile, and other characteristics. No other company offers such a complete collection for your screening and development efforts. We synthesize at scales that will carry you from R&D through manufacturing, and under an ISO 13485 Quality System that will meet your regulatory needs. We invite you to explore the vast technical resources on our website, or to contact us directly to discuss your next development project.

Assay	
Chemiluminescence	ProMag® HP
Immuno	ProMag®, ProMag®HP, COMPEL™, or BioMag®
Molecular	Magnefy™ , ProMag®, ProMag® HP or COMPEL™
Flow cytometric	COMPEL™

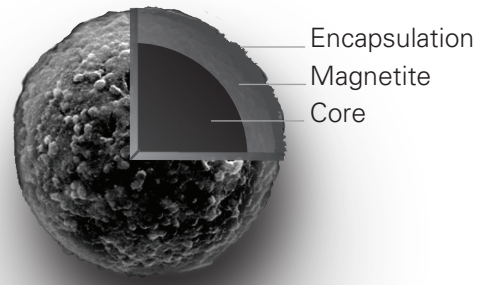
See Magnetic Separators, page 52 - 54 or our Magnetic Beads for Assay Development Brochure from BangsLabs.com.



Magnetic Separation

Magnefy™

Meet the newest addition to our family of magnetic particles–Magnefy™ ~1µm carboxylated superparamagnetic microspheres. As high surface area / high surface titer microparticles with a rapid separation profile, Magnefy offer an additional performance-driven solid phase for magnetic particle-based assays and isolations. See PDS 756.

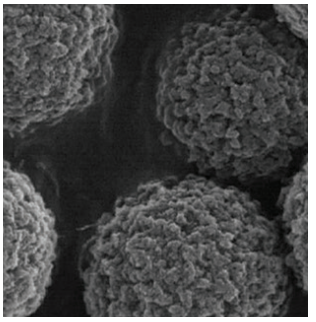


Catalog Number	Description	Nominal Diameter	Unit size
MFY0002	Magnefy™ COOH	1µm	5mL, 10mL, 25mL, 100mL

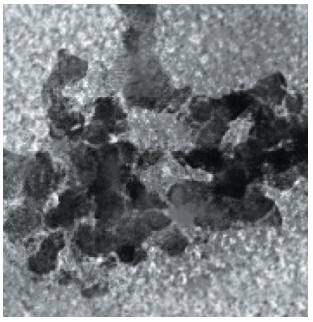
(~5% solids 50mg/mL) Please see BangsLabs.com for pricing or contact a local agent.

Magnetic Particle Sampler Packs

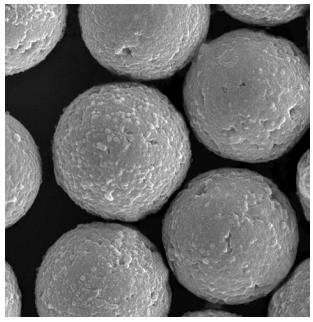
For development efforts, our Magnetic Particle Sampler Packs allow you to test different particles to find which yield optimal performance characteristics in your specific system. Choose from carboxylated or streptavidin coated versions. See PDS 749.



ProMag



BioMag

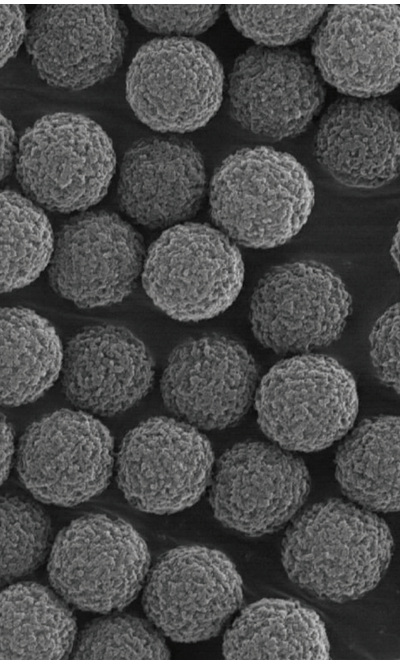


ProMag HP

COOH Magnetic Sample Pack Includes:	
Catalog Number	**Description**
21940	MFY0002 - Magnefy™ • COOH - 5mL (5% solids)
	PMC1N - ProMag® 1 Series • COOH - 5mL (2.5% solids)
	PMC3HP - ProMag® 3 HP • COOH - 5mL (2.5% solids)
	BP618 - BioMag®Plus • COOH - 5mL (20mg / mL)
Streptavidin Magnetic Sample Pack Includes:	
Catalog Number	**Description**
21950	PMS1N - ProMag® 1 Series • Streptavidin - 1mL (1% solids)
	PMS3HP - ProMag® 3 HP • Streptavidin - 1mL (1% solids)
	BP628 - BioMag®Plus • Streptavidin - 2mL (5mg / mL)

Please see BangsLabs.com for pricing or contact a local agent.

MAGNETIC MICROSPHERES & PARTICLES

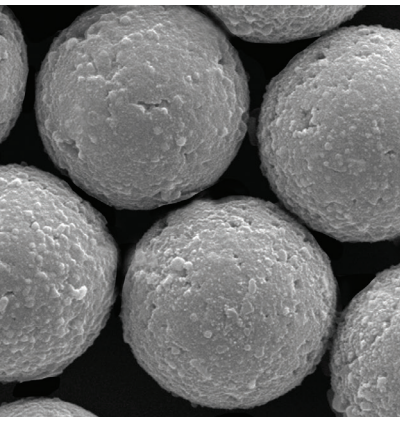


ProMag®

ProMag are highly uniform 1µm and 3µm polymer-based magnetic spheres. A unique surface means low nonspecific binding in protein-based systems, and superior handling without the use of surfactant. These high-binding particles are suitable for use across a range of research and diagnostic applications. ProMag offer rapid and uniform separations that are particularly important to automated assays. See PDS 715 and 735.

Catalog Number	Description	Nominal Diameter	Unit size
PMC1N	ProMag 1 Series • COOH	1µm	5mL or 25mL
PMC3N	ProMag 3 Series • COOH	3µm	5mL or 25mL
PMA3N	ProMag 3 Series • NH_2	3µm	5mL or 25mL
PMS1N	ProMag 1 Series • Streptavidin	1µm	1mL, 2mL, 5mL, or 10mL
PMS3N	ProMag 3 Series • Streptavidin	3µm	1mL, 2mL, 5mL, or 10mL
PMB3N	ProMag 3 Series • Bind-IT™	3µm	2mL, 5mL, or 10mL
PMG3N	ProMag 3 Series • Protein G	3µm	1mL, 2mL, 5mL, or 10mL

(COOH, NH_2 & Bind-IT, ~2.5% solids 25mg/mL) (SA & Protien G ~1% solids 10mg/mL) Please see BangsLabs.com for pricing or contact a local agent.



ProMag® HP

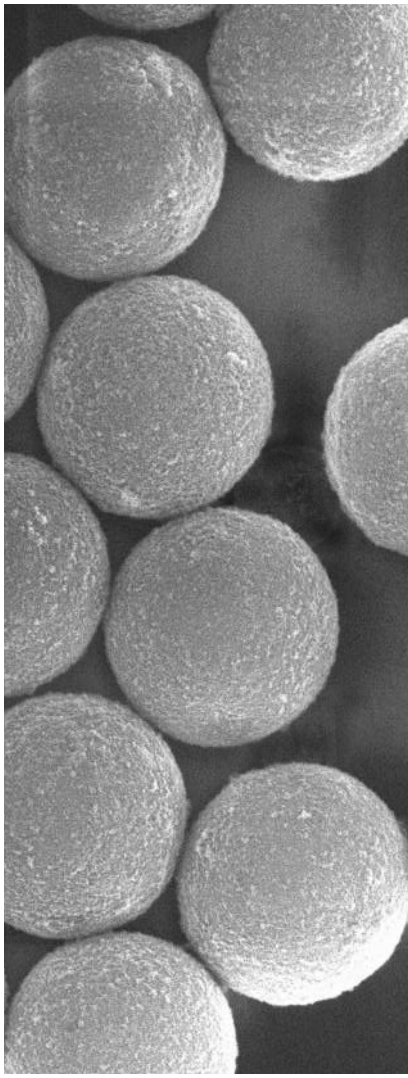
ProMag HP (High Performance) have been meticulously engineered for use in assay development. The highly optimized composition ensures lowest autosignal, particularly with respect to chemiluminescence and exposed iron. See PDS 743.

Catalog Number	Description	Nominal Diameter	Unit size
PMC3HP	ProMag HP 3 Series • COOH	3µm	5mL or 25mL
PMS3HP	ProMag HP 3 Series • Streptavidin	3µm	1mL, 2mL, 5mL, or 10mL

(COOH ~2.5% solids 25mg/mL) (SA ~1% solids 10mg/mL) Please see BangsLabs.com for pricing or contact a local agent.

COMPEL™

COMPEL are highly uniform superparamagnetic microspheres ideal for applications that demand uniform particle response, such as miniaturized bioassays and separations. COMPEL are comprised of iron oxide crystals dispersed in a polymer matrix, with a functional polymer overcoating for encapsulation of magnetite and introduction of reactive groups. As they are polymer-based, they retain the low density that is advantageous for biomolecular assays. See QuantumPlex M, page 27, for our suspensions array platform based on COMPEL.



Parameter	Description
Composition	Magnetite in a polymer matrix
Morphology	Spherical
Surface Functionalities	COOH, SA
Density (g/cm^3)*	~1.1 – 1.2
Iron Oxide Content (%)*	~2.4 – 12.0

* Diameter dependent

COMPEL™ Carboxyl

COMPEL Carboxyl may be coated using traditional EDAC-based chemistry, such as that featured in our PolyLink Protein Coupling Kit (page 46). See also PDS 705.

Catalog Number	Nominal Diameter	Specification Range
UMC3001	3µm	2.50 - 3.50µm
UMC3002	6µm	5.50 - 6.50µm
UMC4001	8µm	7.50 - 8.50µm

Carboxyl COMPEL comes in units of 0.5g, 1g, 1.5g or 5g (~5% solids 50mg/mL) Please see BangsLabs.com for pricing or contact a local agent.

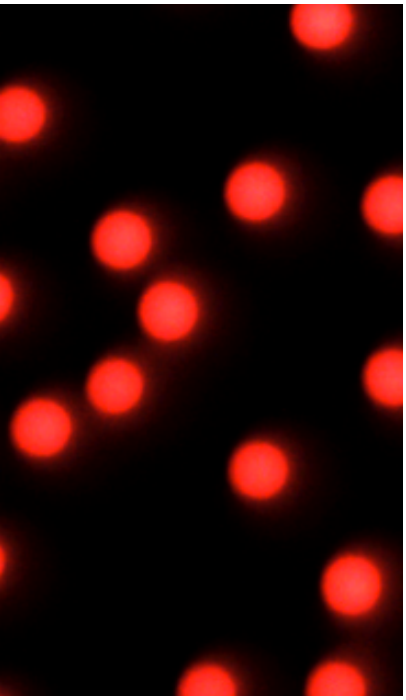
MAGNETIC MICROSPHERES & PARTICLES

COMPEL™ Streptavidin

Streptavidin-coated COMPEL offer the combined ease of affinity binding and magnetic separation. See PDS 721.

Catalog Number	Nominal Diameter	Specification Range
UMC0100	3µm	2.50 - 3.50µm
UMC0101	6µm	5.50 - 6.50µm
UMC0102	8µm	7.50 - 8.50µm

Streptavidin coated COMPEL come in units of 1mL, 2mL, 5mL or 10mL. (~1% solids 10mg/mL)
Please see BangsLabs.com for pricing or contact a local agent.



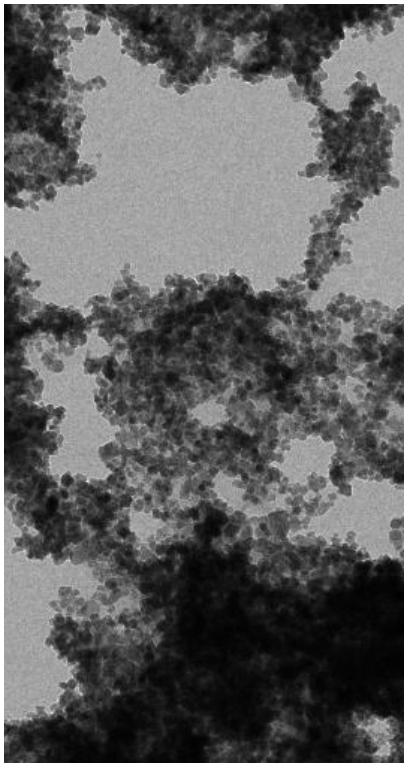
COMPEL™ Fluorescent

As COMPEL spheres are polymer-based, we are able to use them to make bright internally-dyed microsphere standards. Fluorophores include Glacial Blue (360, 450), Dragon Green (480, 520), Envy Green (525,565), and Flash Red (660, 690). See pages 20-21 for spectra. See PDS 705.

Catalog Number	Fluorescence Color	Nominal Diameter	Specification Range
UMGB001	Glacial Blue	3µm	2.50 - 3.50µm
UMDG001	Dragon Green	3µm	2.50 - 3.50µm
UMEG001	Envy Green	3µm	2.50 - 3.50µm
UMFR001	Flash Red	3µm	2.50 - 3.50µm
UMGB002	Glacial Blue	6µm	5.50 - 6.50µm
UMDG002	Dragon Green	6µm	5.50 - 6.50µm
UMFR002	Flash Red	6µm	5.50 - 6.50µm
UMGB003	Glacial Blue	8µm	7.50 - 8.50µm
UMDG003	Dragon Green	8µm	7.50 - 8.50µm
UMFR003	Flash Red	8µm	7.50 - 8.50µm

Fluorescent COMPEL come in units of 1mL, 5mL, 10mL or 100mL. (~1% solids 10mg/mL)
Please see BangsLabs.com for pricing or contact a local agent.

BioMag® and BioMag®Plus



BioMag and BioMag Plus are ~1.5µm high-performance superparamagnetic microparticles widely used in assays and for the efficient separation of cells and purification of proteins or other biomolecules. Their irregular morphology provides much greater surface area than similarly-sized spherical particles, resulting in high binding capacities and efficient capture of target with conservative use of particles. The high iron oxide content allows for rapid and efficient magnetic separations, even from difficult, e.g. highly viscous, samples. BioMag Plus particles undergo additional processing for reduction of fines.

Composition	Silanized iron oxide
Morphology	Cluster, irregular
Surface Functionalities	COOH, NH_2, streptavidin, antibodies, and other affinity binding proteins
Density (g/cm³)	> 2.5
Iron Oxide Content (%)	> 90
Magnetization (emu/g)	~ 25 – 35
Surface Area (m²/g)	> 100
Particles / mg	~ 1 x 10^8

Functionalized BioMag®

BioMag are offered in carboxyl and amine functionalized versions to support covalent binding strategies. Covalent coatings offer the highest stability and opportunities to tailor the immobilization chemistry using specialized linkers. See website for specific product data sheets.

Catalog Number	Description	Concentration	Unit size
BM546	BioMag Amine	50 mg/mL	10mL or 100mL
BM545	BioMag Magnetic Amine Immobilization Kit*	50 mg/mL	10mL (1 reaction x 10mL)
BP617	BioMag Plus Amine	50 mg/mL	10mL or 100mL
BP610	BioMag Plus Amine Protein Coupling Kit*	50 mg/mL	10mL (5 reactions x 2mL)
BM570	BioMag Carboxyl	20 mg/mL	10mL or 100mL
BP618	BioMag Plus Carboxyl	20 mg/mL	10mL
BP611	BioMag Plus Carboxyl Protein Coupling Kit*	20 mg/mL	2.5mL (5 reactions x 0.5mL)

* Kit is provided with a magnetic separator. Please see BangsLabs.com for pricing or contact a local agent.

MAGNETIC MICROSPHERES & PARTICLES

BioMag® Maxi

BioMag Maxi have the same irregular morphology and composition as standard BioMag products, but with a larger mean diameter of ~3 – 12µm. See PDS 630 and PDS 640.

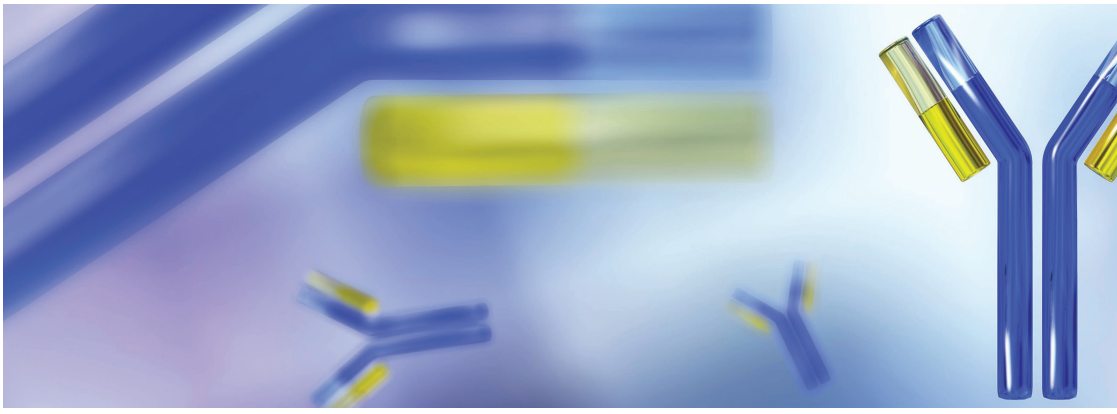
Catalog Number	Description	Concentration	Unit size
BMM30	BioMag Maxi Carboxyl	20 mg/mL	10mL
BMM40	BioMag Maxi Amine	50 mg/mL	10mL

Please see BangsLabs.com for pricing or contact a local agent.

BioMag® for Affinity Ligand Binding

BioMag particles with affinity binding proteins may be coated with their affinity binding partner through a straightforward incubation. They are also suitable for off-the-shelf use in applications such as immunoprecipitation or PCR product clean-up.

Ligand	Binding Partner	Strength
Streptavidin	Biotin	10^{13}
Biotin	Streptavidin	10^{13}
Protein A	Fc region of IgG, species and isotype specific	Varies, see chart on page 31
Protein G	Fc region of IgG, species and isotype specific	Varies, see chart on page 31
Concanavalin A	Mannosyl- and glucosyl-containing glycoproteins and polysaccharides	10^{6} – 10^{7}
Wheat Germ Agglutinin	N-acetylglucosamine-containing glycoproteins and polysaccharides	10^{3} – 10^{7}



BioMag® Streptavidin and BioMag® Biotin

The streptavidin / biotin system offers one of the most straightforward and secure non-covalent coating strategies, and is commonly used to bind or capture labeled antibodies, oligonucleotides, peptides, and protein complexes. See website for specific product data sheets.

Catalog Number	Description	Concentration	Unit size
BM551	BioMag Streptavidin	5 mg/mL	5mL or 50mL
BP628	BioMag Plus Streptavidin	5 mg/mL	10mL
BM568	BioMag Streptavidin, Nuclease-free	1 mg/mL	10mL 25mL or 100mL
BP621	BioMag Plus Streptavidin / Biotin Binding Kit* (suitable for various biotinylated molecules)	5 mg/mL	5 x 1mL
BM552	BioMag Biotin	20 mg/mL	10mL or 100mL

* Kit is provided with a magnetic separator. Please see BangsLabs.com for pricing or contact a local agent.

BioMag® for Fc-Antibody Binding

Fc-binding proteins such as Protein A and Protein G offer directed immobilization for a full complement of IgG subclasses from various hosts. They also find routine use for antibody purifications and serum sample preparation. See website for specific product data sheets.

Catalog Number	Description	Concentration	Unit size
BM554	BioMag Protein A	5 mg/mL	2mL or 10mL
BP620	BioMag Plus Protein A	5 mg/mL	2mL or 10mL
BP614	BioMag Plus Protein A Antibody Isolation Kit*	5 mg/mL	2.5 mL (5 reactions x 0.5mL)
BM553	BioMag Protein G	5 mg/mL	2mL or 10mL
BP627	BioMag Plus Protein G	5 mg/mL	2mL or 10mL
BP626	BioMag Plus Protein G Antibody Isolation Kit*	5 mg/mL	2.5 mL (5 reactions x 0.5mL)

* Kit is provided with a magnetic separator. Please see BangsLabs.com for pricing or contact a local agent.