



Magnetic Microspheres



Nucleic Acid Extraction Magnetic Microspheres

This series of magnetic microspheres have excellent capture ability and elution efficiency for nucleic acids, and are specially designed for nucleic acid extraction and purification. VDO Biotech's magnetic microsphere series integrates the advantages of excellent dispersion, low non-specific binding and fast magnetic response. It is suitable for nucleic acid extraction of various sample types and could meet the requirements of automatic equipment extraction. It is an ideal choice for nucleic acid extraction and purification of biological samples.



Features

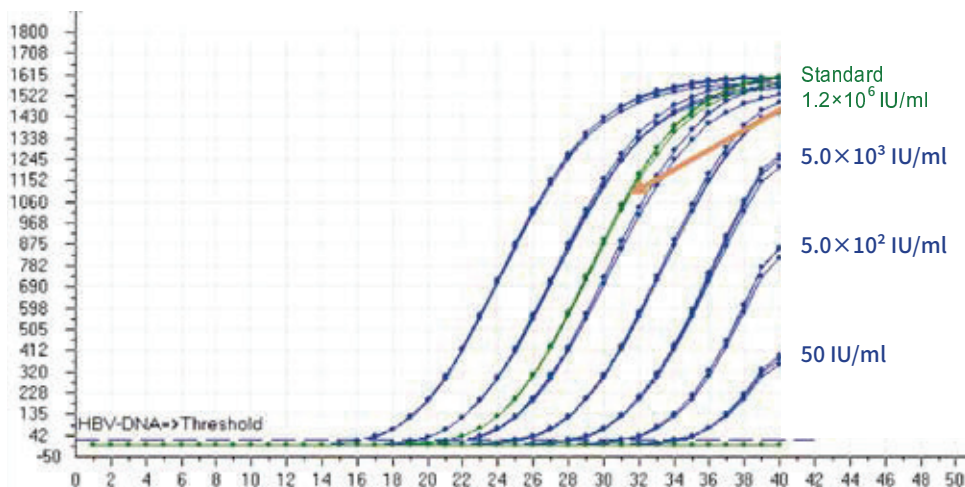
- Large specific surface area: enhanced binding capacity
- Superparamagnetic: excellent resuspension
- Special surface modifications: improved adsorption capacity and easier elution
- Rapid magnetic response: fast magnetic adsorption speed, no magnetic residue
- Production capacity is up to >100L/batch, batch-to-batch consistency: high reproducibility
- Variety selections of diameters and surface groups: applicable to various types of samples



Technical Parameters

- Composition: Iron oxide (Fe_3O_4)
- Particle size: 50nm-2 μm
- Dispersion medium: DI water
- Additive: Contains trace amount of surfactant
- Particle refractive index: NA
- Storage condition: Store at 2-25°C, do not freeze

Case Study: Nucleic acid extraction using VDO Biotech's magnetic microspheres



▲ HBV samples were diluted to different concentrations with serum. The sample can still be detected stably when the concentration is as low as 50 IU/ml.

Ordering Information:

Magnetic Microspheres for Nucleic Acid Extraction

Cat. No.	Color	Surface Groups	Solids	Selected Applications
MS02H	Brownish black	OH	2.5%	Viral nucleic acid extraction
MA200H	Brownish black	OH	2.5%	cfDNA extraction PCR products purification
MA0308C	Brownish yellow	COOH	2.5%	Viral nucleic acid extraction
MA0309C	Brownish yellow	COOH	2.5%	Nucleic acid extraction of swine fever virus
MS05HC	Brownish yellow	OH	2.5%	Viral nucleic acid extraction cfDNA extraction Purification of PCR products
MS05HE	Brownish yellow	OH	3.0%	Viral nucleic acid extraction
MS04T	Brownish yellow	Oligo(dT)	1.0%	mRNA extraction from animal and plant samples
MS02HA	Brownish black	OH	2.5%	Virus, pseudovirus particles, small fragment nucleic acid extraction
MS04HC	Brownish black	OH	2.5%	Viral nucleic acid extraction, throat and nose swab serum, vaginal swabs

The magnetic microsphere products above are all available in 10ml, 100ml, and 1L.

Supporting Raw Material

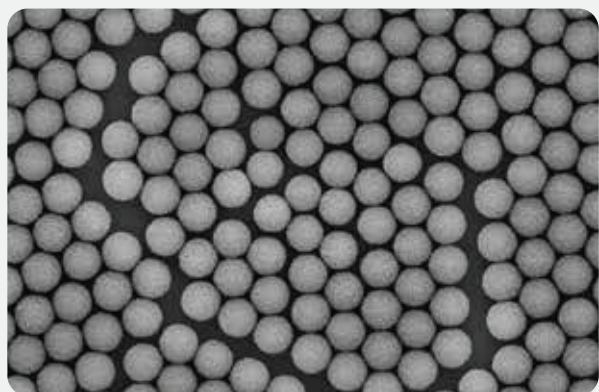
Cat.No.	Product Name	Form	CAS	Use	Size
VYJ1300905	Guanidine Hydrochloride	White crystal	50-01-1	Strong protein allosteric agent	500g
VYJ1300910					1Kg
VYJ1301210	Guanidine Isothiocyanate	White crystal	593-84-0	Strong protein allosteric agent	1Kg
VYJ13012250					25Kg
PK0030	Proteinase K	White lyophilized powder	39450-01-6	Cell lysis	30mg
PK0100					100mg
PK1000					1000mg
PK1050					50g

Supporting Consumables

Product Name	Size
96-Well Deep Well Plates	A variety of packaging specifications are available.
96-Well Plates	
96-Well Magnetic Rod Cover	
8-Well Magnetic Rod Cover	
96 Sealing Film	

Streptavidin-coated Magnetic Microspheres

This series of magnetic microspheres coated with streptavidin(SA), which can effectively binds biotinylated derivatives.



Features

- Superparamagnetic: excellent resuspension
- Hydrophilic surface: low non-specific binding
- Uniform diameter: CV<5%, high reproducibility
- Coated with streptavidin(SA): effectively binds biotinylated derivatives
- Large scale production, batch-to-batch consistency: superior quality with consistent test results



Technical Parameters

- **Composition:** Iron oxide (Fe_3O_4)
- **Uniformity:** CV<5%
- **Particle Size:** 0.6 μm , 1 μm , 3 μm
- **Additive:** Contains trace amount of surfactant
- **Surface Groups:** Streptavidin (SA)
- **Storage condition:** Store at 2-8 $^\circ\text{C}$, do not freeze
- **Dispersion Medium:** Magnetic microspheres preservation solution

Magnetic Microspheres for Targeted DNA/RNA Capture

Streptavidin-coated Magnetic Microspheres

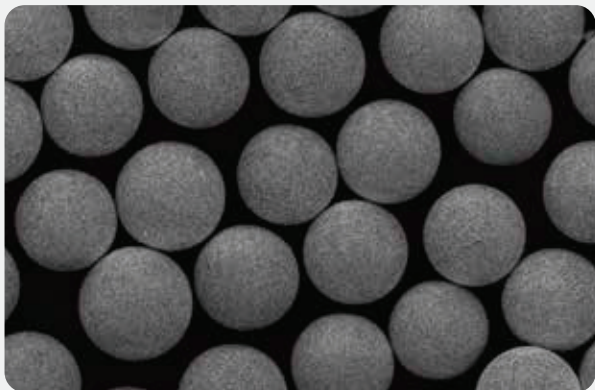
Cat. No.	Particle Size	Color	Surface Groups	Solids	Size
NMP0600SA	0.6 μ m	Brownish yellow	SA	1.0%	10ml, 100ml, 1L
NMP1001SA	1 μ m	Brownish yellow	SA	1.0%	10ml, 100ml, 1L
NMP1003SA	3 μ m	Brownish yellow	SA	1.0%	10ml, 100ml, 1L

Carboxyl(COOH)-coated Magnetic Microspheres

Cat. No.	Particle Size	Color	Surface Groups	Solids	Size
NMP0600CA	0.6 μ m	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L
NMP1001CA	1 μ m	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L
NMP1003CA	3 μ m	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L
NMP1005CA	5 μ m	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L

Magnetic Microspheres for Chemiluminescent

VDO Biotech's magnetic microspheres for chemiluminescent have superparamagnetism and moderate magnetic content, excellent resuspendability and fast magnetic response. With our advanced microsphere synthesis technology, proprietary surface coating process, and variety selections of functional groups, our magnetic microspheres provide comprehensive solutions to meet customers' specific needs of different technology route development. The high-load functional groups guarantee the binding capacity, and this series of products show outstanding performance in the field of immunoassay.



- High magnetic content: fast magnetic response
- Large scale production capacity, up to 50L/batch: scalable and stable production
- Uniform diameter, stable and controllable surface functional groups: high reproducibility
- Superparamagnetism and proper density: ensures good resuspension and suspension time
- Sufficient surface functional groups: efficiently couple with sufficient amount of target protein

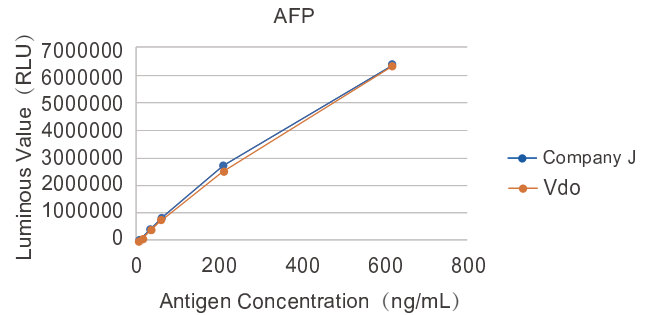


- **Composition:** Iron oxide (Fe_3O_4)
- **Particle Size:** 0.6 μm , 1 μm , 3 μm
- **Additive:** Contains trace amount of surfactant
- **Uniformity:** CV<5%
- **Density:** 1.05-3.38g/cm³
- **Surface Functional Groups:** Carboxyl (COOH) / Streptavidin (SA)

Case Studies

Detection of alpha-fetoprotein (AFP) by magnetic microsphere chemiluminescence method

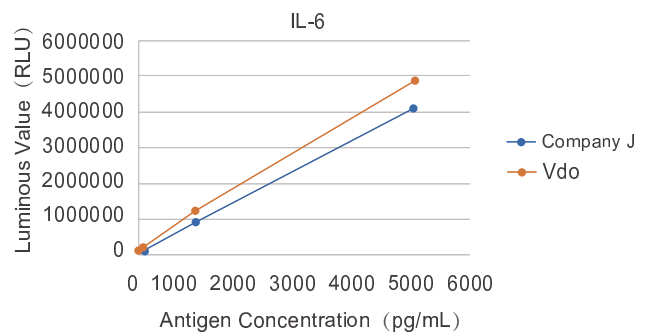
Antigen Concentration	Company J's Magnetic Microspheres	VDO's Magnetic Microspheres
0ng/ml	8787	8061
5ng/ml	99936	95505
25ng/ml	406235	380296
50ng/ml	809104	760986
200ng/ml	2853867	2601184
600ng/ml	6519703	6430896



- ▲ Under the same conditions, when the antigen concentration is 0ng/ml, VDO's magnetic microspheres shows less interference; with other antigen concentrations, the signal strength of VDO's and Company J's magnetic microspheres are comparable.

Detection of interleukin-6 (IL-6) by magnetic microsphere chemiluminescence method

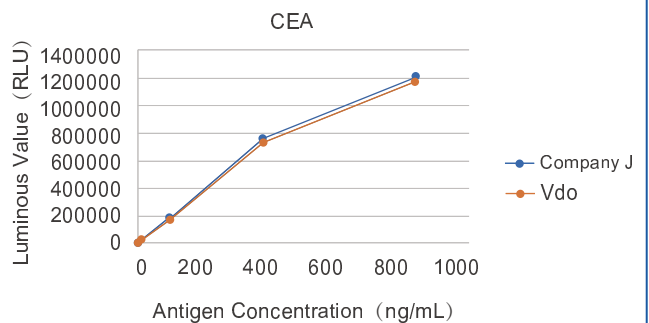
Antigen Concentration	Company J's Magnetic Microspheres	VDO's Magnetic Microspheres
0pg/ml	1393	1487
5pg/ml	8413	11150
10pg/ml	20040	22390
100pg/ml	98271	140919
1000pg/ml	830407	1186483
5000pg/ml	4137743	4873955



- ▲ Under the same conditions, the signal of VDO's magnetic microspheres is stronger than Company J's; moreover, the signal of VDO's magnetic microspheres is 1.4 times that of Company J's when the antigen concentration is 100pg/ml.

Detection of carcinoembryonic antigen (CEA) by magnetic microsphere chemiluminescence method

Antigen Concentration	Company J's Magnetic Microspheres	VDO's Magnetic Microspheres
0ng/ml	595	557
2.29ng/ml	5129	4884
11.43ng/ml	21118	18987
102.68ng/ml	180875	171731
414.13ng/ml	759088	723924
918.34ng/ml	1216901	1180381



- ▲ Under the same conditions, the signal strength of VDO's and Company J's magnetic microspheres are comparable.

Ordering Information

Cat. No.	Particle Size	Color	Surface Groups	Solids	Size
CMP0600CA	0.6µm	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L
CMP1001CA	1µm	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L
CMP1003CA	3µm	Brownish yellow	COOH	2.5%	10ml, 100ml, 1L
CMP0600SA	0.6µm	Brownish yellow	SA	1.0%	10ml, 100ml, 1L
CMP1001SA	1µm	Brownish yellow	SA	1.0%	10ml, 100ml, 1L
CMP1003SA	3µm	Brownish yellow	SA	1.0%	10ml, 100ml, 1L

Magnetic Microspheres for Protein Purification

VDO Biotech has developed a series of protein purification microspheres with uniform particle size, stable and controllable surface functional groups, and high experimental repeatability. It is suitable for high-throughput purification and can directly prepare high-purity target protein from crude samples. Moreover, we can customize microspheres with different particle sizes and surface functional groups to meet customers' specific purification needs for various sample types and applications.



- **Composition:** Iron oxide (Fe_3O_4)
- **Particle Size:** 0.6 μm , 3 μm , 5 μm , 50 μm
- **Surface Modification:** Protein A / Protein G
- **Dispersion Medium:** DI water or neutral buffer
- **Storage Condition:** Store at 2-8 $^\circ\text{C}$, do not freeze

Ordering Information

Protein A-coated Magnetic Microspheres

Cat. No.	Particle Size	Color	Surface Groups	Solids	Size
PMP0600AA	0.6 μm	Brownish yellow	Protein A	1.0%	10ml, 100ml, 1L
PMP1003AA	3 μm	Brownish yellow	Protein A	1.0%	10ml, 100ml, 1L
PMP1005AA	5 μm	Brownish yellow	Protein A	1.0%	10ml, 100ml, 1L
PMP1050AA	50 μm	Brownish yellow	Protein A	1.0%	10ml, 100ml, 1L

Protein G-coated Magnetic Microspheres

Cat. No.	Particle Size	Color	Surface Groups	Solids	Size
PMP0600GA	0.6 μm	Brownish yellow	Protein G	1.0%	10ml, 100ml, 1L
PMP1003GA	3 μm	Brownish yellow	Protein G	1.0%	10ml, 100ml, 1L
PMP1005GA	5 μm	Brownish yellow	Protein G	1.0%	10ml, 100ml, 1L
PMP1050GA	50 μm	Brownish yellow	Protein G	1.0%	10ml, 100ml, 1L

Other specifications can be customized upon request.

Inspiring & Enabling Life Science Innovation



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