



Magnetic Microspheres

For Chemiluminescent

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 group guarantees the binding capacity, and this series of products show outstanding performance in the field of immunoassay.



Features

High magnetic content

Fast magnetic response

Large scale production capacity, up to 50 L/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

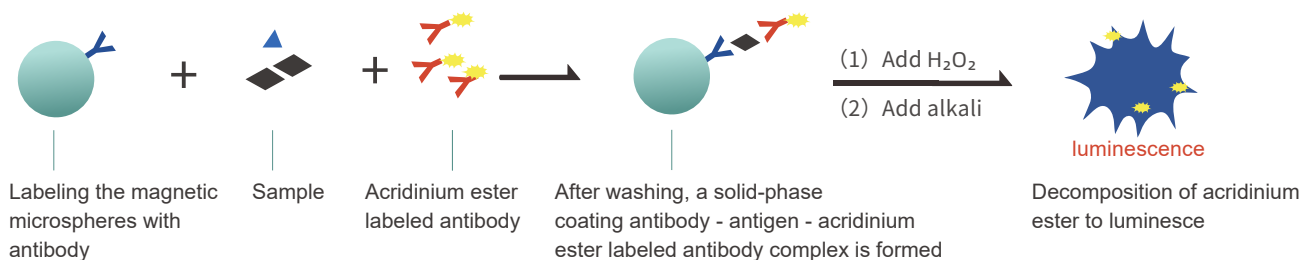
Efficiently couple with sufficient amount of target protein



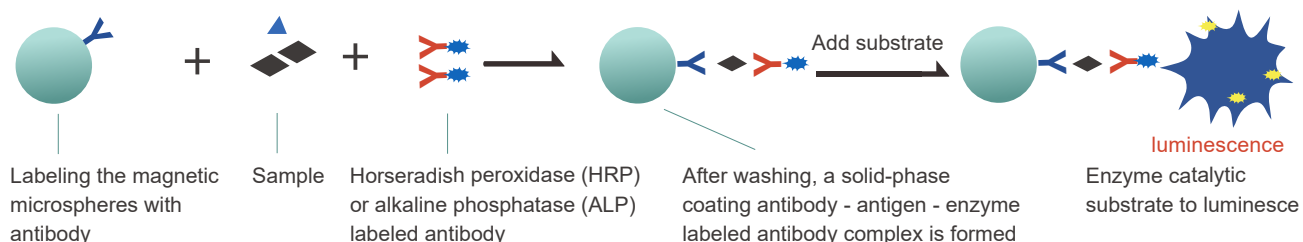
Technical Parameters

Composition:	Iron oxide (Fe ₃ O ₄)
Particle Size:	0.6µm, 1µm, 3µm
Density:	1.05-3.38g/cm ³
Uniformity:	CV<5%
Additive:	Contains trace amount of surfactant
Surface Functional Groups:	Carboxyl (COOH) / Streptavidin (SA)

Principle of Direct Chemiluminescence



Principles of Enzymatic Chemiluminescence



Antibody Coupling Protocol

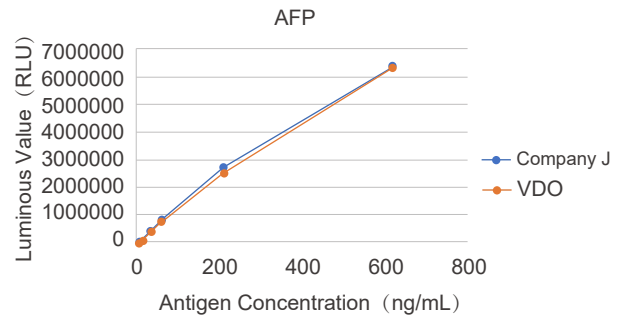
Example: coupling of 10mg magnetic microspheres

1. Take out the required materials and reagents and bring them to room temperature.
2. Pipette 400µL of magnetic microsphere (solid content 2.5%) into the EP tube, and place the tube on the magnetic separation, remove the supernatant.
3. Add 2mL of activation buffer, vortex and mix for 10s, place the tube on the magnetic separation, remove the supernatant, and repeat this step twice.
4. Add 900µL activation buffer, vortex and mix for 10s, add 50µL EDC and 50µL NHS, and place them in a constant temperature shaker at 37°C to activate for 0.5hr.
5. After activation, place the tube on the magnetic separation, remove the supernatant.
6. Add 2mL coupling buffer, vortex and mix for 10s, place the tube on the magnetic separation, remove the supernatant.
7. Add 2mL coupling buffer, vortex and mix for 10s.
8. Add appropriate coupling buffer and mix well, then add 200µg antibody to make the magnetic beads coupling concentration 10mg/mL and put them in a constant temperature shaker at 37°C for a reaction for 2hr.
9. After coupling, place the tube on the magnetic separation, remove the supernatant.
10. Add 2mL blocking buffer, vortex and mix for 10s, and then block in the constant temperature shaker at 37°C for 0.5hr.
11. After blocking, place the tube on the magnetic separation, remove the supernatant,
12. Add 2mL storage buffer, vortex and mix evenly for 10s, place the tube on the magnetic separation, remove the supernatant, and repeat this step 3 times.
13. Add 1mL storage buffer, suspend it to 10mg/mL, and store it at 2-8°C.

Case Studies

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

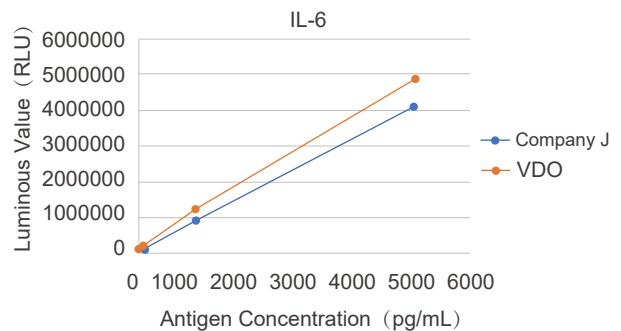
Antigen Concentration	Company J's Magnetic Microspheres	VDO's Magnetic Microspheres
0ng/mL	8787	8061
5ng/mL	99936	95505
25ng/mL	406235	380296
50ng/mL	809104	760986
200ng/mL	2853867	2601184
600ng/mL	6519703	6430896



- ▲ 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 microsphere are comparable.

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

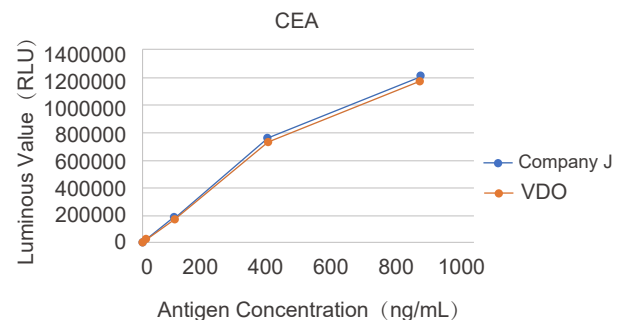
Antigen Concentration	Company J's Magnetic Microspheres	VDO's Magnetic Microspheres
0pg/mL	1393	1487
5pg/mL	8413	11150
10pg/mL	20040	22390
100pg/mL	98271	140919
1000pg/mL	830407	1186483
5000pg/mL	4137743	4873955



- ▲ Under the same conditions, the signal of VDO's magnetic microsphere is stronger than Company J's; moreover, the signal of VDO's magnetic microsphere 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

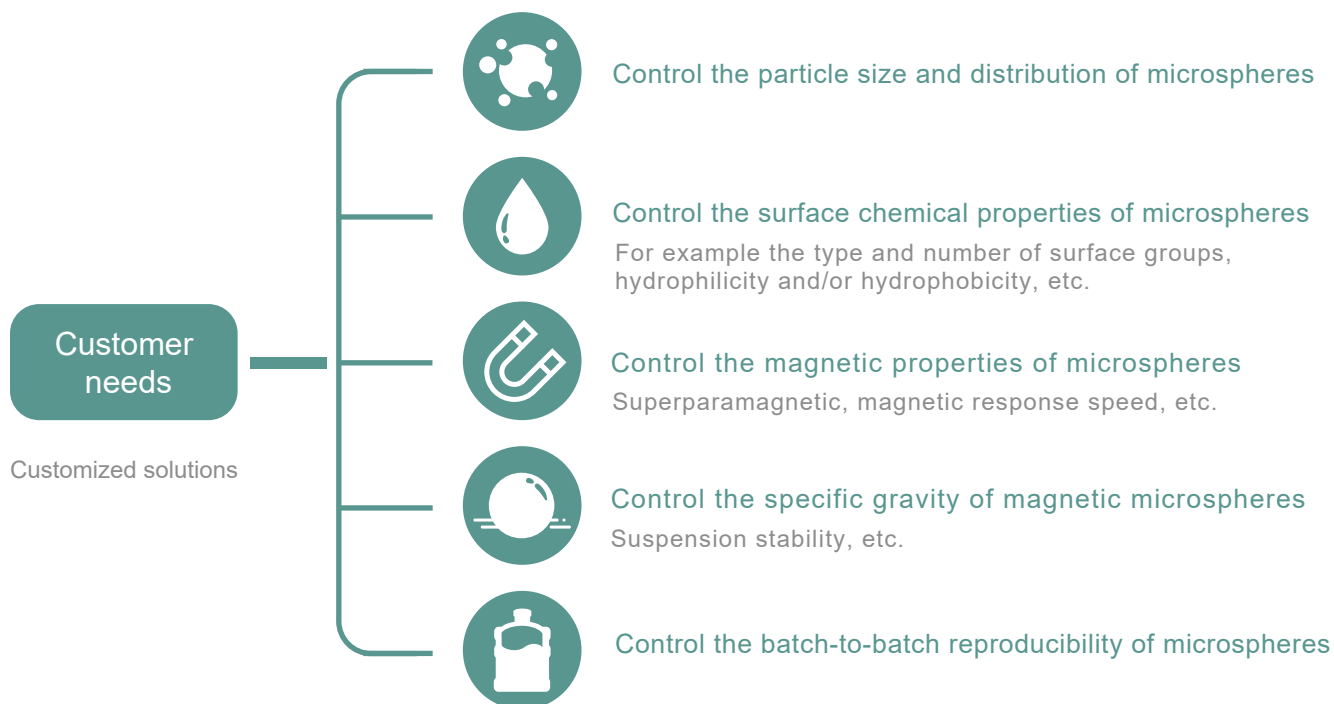
Antigen Concentration	Company J's Magnetic Microspheres	VDO's Magnetic Microspheres
0ng/mL	595	557
2.29ng/mL	5129	4884
11.43ng/mL	21118	18987
102.68ng/mL	180875	171731
414.13ng/mL	759088	723924
918.34ng/mL	1216901	1180381



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

Customized Overall Solution

VDO Biotech provides customized solutions according to customers' specific needs.



Microsphere OEM services for global customers

Large scale protein-microsphere conjugation services

OEM services of microsphere intermediates



High quality microspheres of nanometer and micrometer level

Customized microsphere services

Overall solution for microsphere applications

Ordering Information

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

Inspiring & Enabling Life Science Innovation



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