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BIOEAST

MICROSPHERES

Serve Science See the Future

@bioeast

COMPANY PROFILE

Hangzhou BIOEAST BIOTECH Co., Ltd. is a leading high-tech enterprise dedicated to pioneering research and development in the field of key raw materials for In-Vitro Diagnostic, Life Science, and Biomedical reagent solutions. Established in 2018, BIOEAST BIOTECH has emerged as a trusted provider of innovative solutions in the industry.

We specialize in developing advanced technologies and cutting-edge solutions to meet the evolving needs of the diagnostic, life science, and biomedical sectors. Our product portfolio encompasses a wide range of offerings, including **microspheres, antigens, antibodies, enzymes, active proteins, chromatographic products**, and integrated solutions for various diagnostic platforms such as **Biochemistry, CLIA, ELISA, FIA, Rapid Test and Immunoturbidimetric assay.**

With our leading R&D and manufacturing facilities,
ISO13485 certified quality system, and round-the-clock technical support with assay development experience;

BIOEAST has proudly served hundreds of manufacturers with customized solutions and also has 2 wholly-owned companies to serve manufacturers for different needs.

AICHEK - POCT integrated solutions

BiogenMicro - Biomedicine raw material solutions

As your trusted partner along the way of life science, we are committed to creating a glorious future together. Let's collaborate to achieve breakthroughs and drive innovation in the industry.

Microspheres

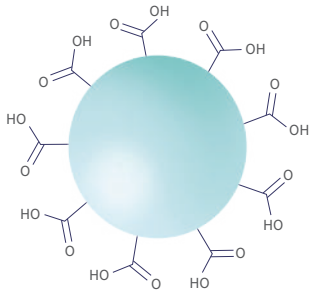
Product Name	Cat No.	Surface Group	Size	Concentration	Application Platform
MICROSPHERES					
Bioeast Mag-COOH	M1000C	Carboxyl Group(COOH)	1200nm	50mg/ml	CLIA
	M2800C	Carboxyl Group(COOH)	2800nm	50mg/ml	CLIA
Bioeast Mag-Tosyl	M1000T	Tosyl(Tosyl)	1200nm	50mg/ml	CLIA
	M2800T	Tosyl(Tosyl)	2800nm	50mg/ml	CLIA
Bioeast Mag-NH2	M1000N	Amino Group(NH2)	1200nm	50mg/ml	CLIA
	M2800N	Amino Group(NH2)	2800nm	50mg/ml	CLIA
Bioeast Mag-SA	M1000S	Streptavidin(SA)	1200nm	10mg/ml	CLIA Molecular Diagnostics
	M2800S	Streptavidin(SA)	2800nm	10mg/ml	CLIA Molecular Diagnostics
	M1000TS	Streptavidin(SA)	1200nm	10mg/ml	CLIA Molecular Diagnostics
	M2800TS	Streptavidin(SA)	2800nm	10mg/ml	CLIA Molecular Diagnostics
LATEX MICROSPHERES					
Carboxyl Latex Microspheres	P0080CA	Carboxyl Group(COOH)	80nm	10%	PETIA
	P0100C	Carboxyl Group(COOH)	100nm	10%	PETIA
	P0120C	Carboxyl Group(COOH)	120nm	10%	PETIA
	P0140C	Carboxyl Group(COOH)	140nm	10%	PETIA
	P0160C	Carboxyl Group(COOH)	160nm	10%	PETIA
	P0180C	Carboxyl Group(COOH)	180nm	10%	PETIA
	P0200C	Carboxyl Group(COOH)	200nm	10%	PETIA
	P0250C	Carboxyl Group(COOH)	250nm	10%	PETIA
	P0300C	Carboxyl Group(COOH)	300nm	10%	PETIA
	P0350C	Carboxyl Group(COOH)	350nm	10%	PETIA
COLORED MICROSPHERES					
Red Latex Microspheres	DR0200C	Carboxyl Group(COOH)	200nm	4%	LF
	DR0300C	Carboxyl Group(COOH)	300nm	4%	LF
	DR0400C	Carboxyl Group(COOH)	400nm	4%	LF
	DR0200S	Streptavidin(SA)	200nm	1%	LF
	DR0300S	Streptavidin(SA)	300nm	1%	LF
	DR0400S	Streptavidin(SA)	400nm	1%	LF

Microspheres

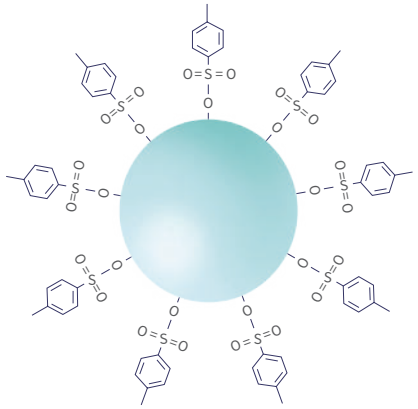
Product Name	Cat No.	Surface Group	Size	Concentration	Application Platform
COLORED MICROSPHERES					
Blue Latex Microspheres	DB0200C	Carboxyl Group(COOH)	200nm	4%	LF
	DB0300C	Carboxyl Group(COOH)	300nm	4%	LF
	DB0400C	Carboxyl Group(COOH)	400nm	4%	LF
	DB0200S	Streptavidin(SA)	200nm	1%	LF
	DB0300S	Streptavidin(SA)	300nm	1%	LF
	DB0400S	Streptavidin(SA)	400nm	1%	LF
Black Latex Microsphere	DK0200C	Carboxyl Group(COOH)	200nm	4%	LF
	DK0300C	Carboxyl Group(COOH)	300nm	4%	LF
	DK0400C	Carboxyl Group(COOH)	400nm	4%	LF
	DK0200S	Streptavidin(SA)	200nm	1%	LF
	DK0300S	Streptavidin(SA)	300nm	1%	LF
	DK0400S	Streptavidin(SA)	400nm	1%	LF
FLUORESCENT MICROSPHERES					
Europium Chelated Polystyrne Microspheres (pink)	EU0100C	Carboxyl Group(COOH)	100nm	1%	FIA
	EU0200C	Carboxyl Group(COOH)	200nm	1%	FIA
	EU0300C	Carboxyl Group(COOH)	300nm	1%	FIA
	EU0100S	Streptavidin(SA)	100nm	1%	FIA
	EU0200S	Streptavidin(SA)	200nm	1%	FIA
	EU0300S	Streptavidin(SA)	300nm	1%	FIA
Green Fluorescent Microspheres	FG0200C	Carboxyl Group(COOH)	200nm	1%	FIA
	FG0300C	Carboxyl Group(COOH)	300nm	1%	FIA
	FG0400C	Carboxyl Group(COOH)	400nm	1%	FIA
	FG0200S	Streptavidin(SA)	200nm	1%	FIA
	FG0300S	Streptavidin(SA)	300nm	1%	FIA
	FG0400S	Streptavidin(SA)	400nm	1%	FIA
NUCLEIC ACID EXTRACTION MAGNETIC BEADS					
Hydroxy SiO_2 Magnetic Beads	MS0200HA	Hydroxy(OH)	200nm	5.0%	Nucleic Acid Extraction
	MS0400HA	Hydroxy(OH)	400nm	5.0%	Nucleic Acid Extraction
	MS0400HB	Hydroxy(OH)	400nm	5.0%	Nucleic Acid Extraction

Diversity

Various types of magnetic microspheres-streptavidin,carboxyl, p-toluenesulfonyl, etc.to meet the multiple scenarlos.



Carboxyl-coated surface

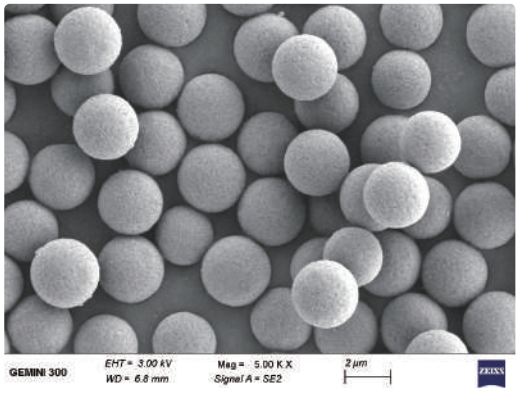


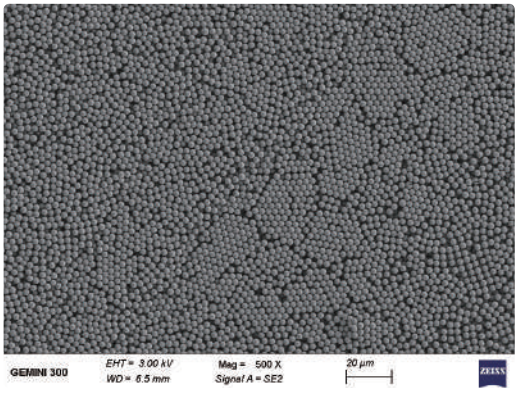
Tosyl-coated surface

SA-coated surface

Particle size

Standard 1.2 um, 2.8 um, 4.5 um; Customisation available





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Application Example of Carboxyl Magnetic Microspheres (Bioeast Mag-COOH)

Development of Thyroid-Stimulating Hormone (TSH) Test Reagents Using Bioeast M1000C3 Magnetic Microspheres

1. Materials

Magnetic Microsphere: Bioeast M1000C3
Magnetic Microsphere Coupled Antibody: Bioeast TSH101
Alkaline Phosphatase Labeled Antibod: Bioeast TSH102
Detection Markers: TSH Protein for preparing samples of different concentrations

2. Equipment

- Vortex mixer, rotary mixer, and magnetic separation rack used during the coupling of magnetic microspheres.
- Fully Automatic Chemiluminescence Immunoassay Instrument: IncreCare i2900.

3. Magnetic Microsphere Coupling Process

- Two-step coupling method.

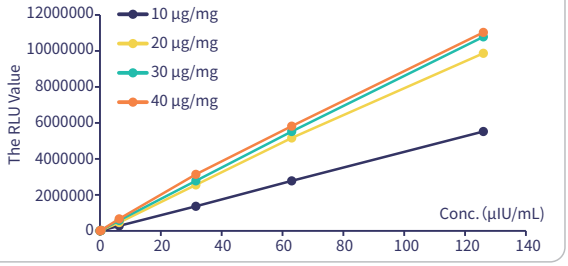
4. Detection Process

- Mix the sample with TSH101 antibody-coupled M1000C3 magnetic microspheres (12.5μg/T) and alkaline phosphatase-labeled TSH102 antibody, incubate, and wash.
- Add luminescent substrate and measure signal values.

5. Detection Results

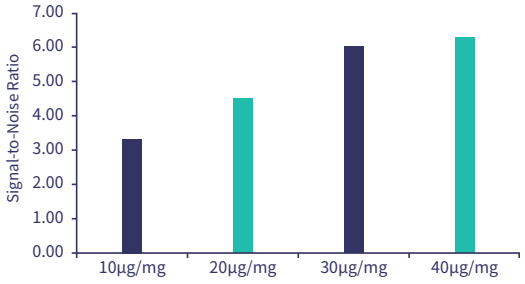
Luminescence Value Detection

- Test TSH calibration samples (Cal.1~Cal.6), comparing differences in luminescence values under different antibody coupling amounts. Average values are taken from three repeat tests for each point to observe luminescence trends.
- Differences in luminescence values for different antibody coupling amounts in TSH detection show an increasing trend with increasing antibody amounts, reaching a plateau between 20 μg/mg and 40 μg/mg.



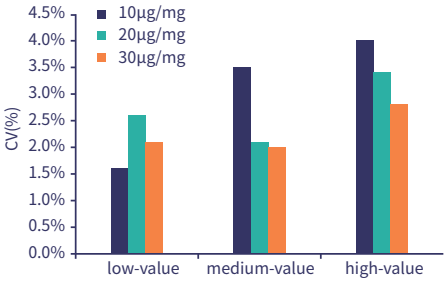
Signal-to-Noise Ratio

- Evaluate the signal-to-noise ratio using the ratio of low-value calibration (Cal.2) to zero-value calibration (Cal.1) to preliminarily judge detection sensitivity.
- Signal-to-noise ratio does not significantly increase when antibody coupling exceeds 30μg/mg.



Precision

- Test TSH serum samples using magnetic microspheres with coupling amounts of 10μg/mg, 20μg/mg, and 30μg/mg: low-value sample (about 0.10 μIU/mL), medium-value sample (about 7.25 μIU/mL), high-value sample (about 72.32 μIU/mL). Perform ten repeat tests for each sample and calculate the coefficient of variation CV%.
- Differences in precision for different antibody coupling amounts show that the coefficient of variation CV% for each is less than 4.0%.



6. Conclusion

- According to the luminescence value detection and signal-to-noise ratio results, the best detection results are obtained when coupling 30 μg of TSH antibody per milligram of M1000C3. However, since the detection luminescence value plateau is related to factors such as sample amount and enzyme conjugate amount, we recommend coupling 20~30 μg of antibody per milligram of M1000C3. It is advisable to try different antibody coupling ratios and adjust the amount of magnetic beads in your application to achieve optimal conditions.
- The CV% for high, medium, and low sample detection with different coupling amounts was all less than 4.0%, demonstrating good precision of the coupled magnetic microspheres.
- The above results are specific to this laboratory application example. It is recommended to try magnetic microspheres with different active groups, different particle sizes, and different coupling schemes in your application process to ensure the best development conditions are selected.