Europium Chelate Microspheres

Product Data Sheet 741

DESCRIPTION

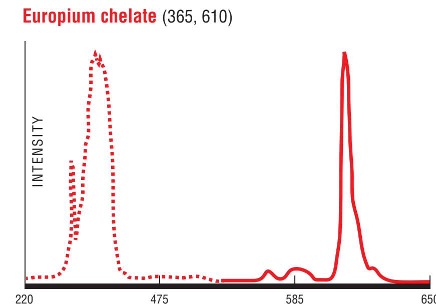
Despite the popularity of traditional fluorophores, distinguishing their signal from background autofluorescence can present a challenge in applications where extremely low detection limits are required. Whereas most fluorophores have pico- or nanosecond fluorescence lifetimes, compounds such as rare earth lanthanide chelates exhibit longer (microsecond) lifetimes, allowing fluorescence decay to be monitored over time. This technique provides a means to separate "true" fluorescence signal from short-lived background fluorescence, and an opportunity to improve assay sensitivity.

These same compounds are also characterized by long Stokes shifts, or intervals between fluorescence excitation and emission maxima. This property also lends itself to low background signal, and avoids regions of fluorescence overlap with other common reporters in multicolor assays.

Bangs offers europium chelate microspheres in diameters of 0.1µm, 0.2µm, 0.3µm and 0.4µm to address the needs of individual assays, including immunochromatographic and microwell-based formats. Our europium products offer extremely bright fluorescence (excitation: 365nm; emission: 610nm) and exceptional stability, in addition to well-functionalized carboxylated surfaces for the covalent attachment of ligand.

CHARACTERISTICS

Nominal Diameters:	0.1µm, 0.2µm, 0.3µm, 0.4µm or Sampler Pack
Supplied as:	1% suspension in DI H_2O with 0.05% NaN_3
Excitation max:	365nm
Emission max:	610nm



PROCEDURE

Researchers are advised to optimize the use of particles in any application.

See TechNotes on the Technical Support page of our website for sample coating and handling procedures:

1. TN205 - *Covalent Coupling*
2. TN203 - *Microsphere Washing*
3. TN201 - *Working with Microspheres*
4. TN303 - *Lateral Flow Tests*

FURTHER READING

1. Liang R-L, Xu X-P, Liu T-C, Zhou J-W, Wang X-G, Ren Z-Q, Hao F, Wu Y-S. (2015) Rapid and sensitive lateral flow immunoassay method for determining alpha fetoprotein in serum using europium (III) chelate microparticles-based lateral flow test strips. Anal Chim Acta; 891:277-283.
2. Soukka T, Paukkunen J, Härmä H, Lönnberg S, Lindroos H, Lövgren. (2001) Supersensitive time-resolved immunofluorometric assay of free prostate-specific antigen with nanoparticle label technology. Clin Chem; 47(4):(1269-1278
3. Xia X, Xu Y, Ke R, Zhang H, Zou M, Yang W, Li Q. (2013) A highly sensitive nanoparticle-based lateral flow immunoassay for detection of chloramphenicol residue. Anal Bioanal Chem; 405(23):7541-4.

HANDLING & STORAGE

Lanthanide chelate complexes are sensitive to and will lose fluorescence when exposed to high heat. Processes that generate heat should be tested and optimized to evaluate effects. Probe sonication should be avoided, and bath sonication should be used with caution. Store at 2-8°C in the supplied opaque container. Freezing of particles may result in irreversible aggregation and loss of binding activity. The expiration date is 24 months from the date of shipment, provided the product is handled in accordance with the manufacturer's recommendations.

SAFETY

This particle suspension contains sodium azide. Sodium azide may react with lead and copper plumbing to form explosive metal azides. Upon disposal of material, flush with a large volume of water to prevent azide accumulation. Please consult the Safety Data Sheet for more information.

This product is for research use only and is not intended for use in humans or for in vitro diagnostic use.

ORDERING INFORMATION

Cat. Number	Description	Sizes
FCEU001	0.10µm Europium Chelate COOH	1mL, 5mL, or 10mL
FCEU002	0.20µm Europium Chelate COOH	1mL, 5mL, or 10mL
FCEU003	0.30µm Europium Chelate COOH	1mL, 5mL, or 10mL
FCEU004	0.40µm Europium Chelate COOH	1mL, 5mL, or 10mL
21960	Europium Chelate COOH Sampler Pack	1mL each of 0.10µm, 0.20µm, 0.30µm, 0.40.µm

Order online anytime at **www.bangslabs.com.**