

Technical Information

Flamma[®] PS Bead series

Overview

Flamma[®] PS bead series are fluorescent spherical particles in the colloidal size made up of high-grade polystyrene (PS) doped with our proprietary dyes. Polystyrene beads are not cytotoxic, and they diffuse minimally from the injection site and persist for long periods in nerve cells. Our fluorescent beads display excellent optical properties yet negligible photobleaching under the intense excitation for fluorescence microscopy. The intense fluorescence and spherical shape of Flamma[®] PS bead series enable to generate stronger signals with small amount of probes in many tracing experiments. To decrease nonspecific binding and provide additional functional groups for conjugation, exteriors of PS bead are equipped with carboxylic acids. These pendent carboxylic acids allow them suitable for covalent coupling of proteins and other amine-containing biomolecules by using water-soluble coupling reagents. BioActs provides various sizes of Flamma[®] PS bead series (0.1 – 0.5 μm) in order to meet the diverse needs of our customer, and sizes specified in the product names are nominal bead diameters. These effective fluorescent PS beads can be utilized in a variety of applications such as neuronal tracers, cellular antigen markers, cell tracers, and the standardization reagents for flow cytometry. Due to their high fluorescence intensity, Flamma[®] PS bead series are suitable for the many nanoparticle based diagnostic tests, including tracking particles and cells, tracing fluid dynamics, discriminating the size dependence of uptake or transport in vivo. Although limited sizes of our fluorescent beads are available, we can prepare custom-sized particles, custom-dyed or custom-surface modifications orders upon request. Contact our custom service for further information.

Table 1. Flamma[®] PS Bead series list

Cat. No.	Product name	Ex*	Em*	Bead size	Functionality	Solids
PCS7001	Flamma [®] Deep Red PS Bead 0.2 μm	645	665	0.2 μm	COOH	2%
PCS7004	Flamma [®] Deep Red PS Bead 0.3 μm	645	665	0.3 μm	COOH	2%
PCS7002	Flamma [®] Deep Red PS Bead 0.5 μm	645	665	0.5 μm	COOH	2%

*maxima of excitation and emission in nm

Handling & Storage

All Flamma[®] Fluors PS beads are stable under sonication, vortexing, or shaking process. All Flamma[®] Fluors PS beads should be stored at 2–6°C, protected from light, and **do not freeze**. Our Flamma[®] Fluors PS beads are supplied as suspensions (2% solids) in water containing 0.05% sodium azide. The PS beads are stable for at least one year, provided recommended storage conditions are strictly observed. Before sampling, mix well by sonication, vigorous shaking, or vortex mixing.

Bead activation and amine conjugation

Activation of surface carboxylic acids to NHS ester

EDCI-mediated NHS ester formation is a common scheme to activate a carboxylic acid. NHS ester is readily reactive with primary amines of biomolecules. Primary amines such as lysine can react with NHS ester under the physiological pH in aqueous condition.

Protocols for NHS ester activation

1. Dilute 2% PS bead 10-fold by mixing in 50 mM MES buffer (pH 6.4)
2. Add *N*-hydroxysuccinimide and EDCI into the diluted bead solution, and mixed the mixture for 30 min at rt.
3. Centrifuge the mixture at 15,000 Xg for 10 min, and then remove supernatant.
4. Suspend the bead pellet in 50 mM MES buffer (pH 6.4), and repeat the step 3 twice

Protocols for antibody (Goat-anti-mouse IgG) conjugation

1. Suspend the NHS ester-activated bead pellet in 50 mM MES buffer (pH 6.4)
2. Add antibody solution to bead suspension solution, and stand the mixture for 4 h at rt (bead 1 mg per antibody 100 µg)
3. Centrifuge the mixture and remove supernatant, and wash bead pellet three times with 0.01% Tween-20 in PBS buffer

Blocking/Quenching

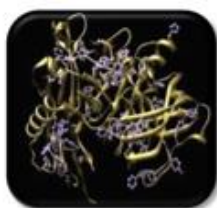
If you want to block carboxylic acids on the surface of PS beads with BSA or other amines such as glycine, add excess amount of 1x BSA or 1 mM amine solution in PBS after step 2 in conjugation protocol and perform step 3.

Custom Labeling Service

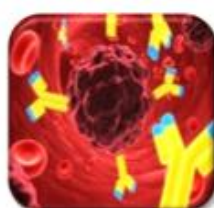
Based on accumulated know-how and technologies, BioActs provide a wide range of custom services such as protein fluorescence labeling, organic synthesis, oligonucleotide synthesis upon customers' request. Our reliable technology has acknowledged by our clients from domestic and overseas universities, institutions, in vitro diagnostic and pharmaceutical companies and has enabled to steadily conduct their requirements. In addition, we can introduce fluorescent materials to many other compounds such as organic and inorganic compounds, drugs, hormones, polymer, peptides, proteins, antibodies, etc. We also can provide chemical and optical analytical data, along with cell and animal experiments.



Nucleic acid



Peptide/Protein



Antibody



Small molecules
/Polymer

Technical Support

ADDRESS

BioActs CO., LTD. DK Tower 10TH F., 595 beon-gil 9, Cheongneung-daero, Namdong-gu, Incheon, 21666, Korea

PHONE & FAX

Tel: +82-32-818-9100

Fax: +82-32-818-8206

WEBSITE

<http://www.bioacts.com/>

MAILS

order@bioacts.com (Order Support)
support@bioacts.com (Customer Support)
ivd@bioacts.com (B2B/Bulk Order Support)

SDS (Safety Data Sheets) You can find SDS at www.bioacts.com, the official website of BioActs.

CoA (Certificate of Analysis) provides detailed quality information of each product. To see CoA, check the lot number written on each product's page at www.bioacts.com, when having trouble with check, contact to our technical support team

Copyright 2009-2017 BioActs All rights reserved. This information is subject to change without notice.

This product can be used only for research purpose, and it can't be used to treat or diagnose human body or animals.

The product cannot be resold to other regions except for South Korea.

We guarantee that this product was manufactured in compliance with spec in this document. This product is for researchers who have received professional education and training, and the guarantee is valid only when the appropriate users used it for correct purpose and method. The guarantee applies to the first purchaser only, and cannot be granted to others. All the models and samples provided to the purchaser are examples of general forms and status, and cannot be consistent. BioActs limits the compensation for inappropriate products to replacement or refund, and this guarantee is not responsible for 1) accidents, disasters or irresistible problems not caused by defect in materials or technology 2) misuse, mistake or carelessness of the user 3) damage due to not observing the instructions regarding product usage 4) damage from mixed use with other defective products 5) products that come from unofficial distribution path. BioActs does not guarantee that the product is free of defect. Other than cases defined by the guarantee, within the maximum range permitted by the proper law, BioActs is not responsible for direct, indirect, special, random or consequential damage that results from violating the guarantee or conditions, or from legal theories. Also, the damages BioActs are not responsible for include but are not limited to damage during use, damage of profit, damages of loss of actual or expected profit, damage regarding money spending, business loss, opportunity loss, credit loss, reputation loss, and indirect or direct damage that occur due to failure of all actions or results used with BioActs products.