Painless Particles®

Global Newsletter
Volume 22, # 2, May 2009

Bangs Laboratories, Inc.
A DIVISION OF POLYSCIENCES, INC.

BEADS ● ABOVE THE REST™

In This Issue

Mail Bonding

Subscribers Do the "Write" Thing

- *"Excellent service on our orders. Thanks!" J.S., TX*
- *"Thank you so much for your timely response to my request. I was really impressed by your knowledge about your products and your courtesy towards your customers during our phone conversation. Thanks a lot!" J.Z., CA*
- *"Thank you very much for your help. I really appreciate your taking the time to research this for us." D.W., WV*
- *"Bangs rocks! Big improvements to website." L.P., MI*
- *"Wow, you are the best! Thanks so much for the quick response and all the information! Bangs really does provide the best tech support I have ever encountered!" L.B., NY*
- *"Brilliant! Your speed and efficiency is much appreciated." E.M., Norway*

A New Year - A New Look

The Launch of our New Website

Bangs is pleased to announce the launch of our new website. Made with you in mind, the website has been not only updated, but completely redesigned in order to provide you with an easier, more secure online experience.

If you've visited our website recently, still located at **www.bangslabs.com**, you have already noticed the dramatic differences. For those who haven't visited lately, just wait until you do!

For starters, we added a search function to our website (YAY!). We are confident that between the new search function and the improved navigation system you will be able to find whatever products or information you need – quickly and easily.

There is now more information available online than ever before. Our catalog, newsletters, Product Data Sheets, and Material Safety Data Sheets can all be found in our *Technical Literature* section. Not sure about handling techniques or selection tips? Never fear. Our new *Learning Center* provides a wealth of information designed to make your job easier.

Need to contact us? Don't be shy! Let us know what you think – about our website and our products. Ask your questions too. We are here to help – and we're only a simple click away!

So, come and see what the excitement is about. Visit **www.bangslabs.com** today!

Bargain Beads!

This section features regular Bangs beads available at special prices for end-of-run, "close-outs," or left-over lots **(www.bangslabs.com)**. And, if you don't see what you're looking for, simply call our Customer Service Department at 800.387.0672.

(Almost) 2 Good 2 Believe

BioMag® Protein A and Protein G - New 2mL Volume

Fc-binding proteins, such as Protein A and Protein G, are useful for a range of antibody-based applications. Coated BioMag particles have been used for antibody isolation from cell culture and depletion from serum, in addition to recovery of antibody complexes from immunoprecipitations. They also present a ready means to orient antibodies for other targeted isolations.

As base particles, BioMag offer tremendous surface area and high magnetic responsiveness for a range of purifications. Their irregular shape provides much greater surface area than similarly-sized spherical particles, resulting in high binding capacities and efficient capture of target with conservative use of particles.

Now, understanding just a few of the reasons why we love Protein A and Protein G BioMag, we're confident that you'll want to try them too. The new 2mL volume ensures ample material for pilot studies or small-scale isolations, and a smaller price for budgets to bear.

Small price. Same big performance. (And, of course, we remain happy to discuss bulk volumes for commercial-scale applications. Or if that tax refund is burning a hole in your pocket....)

Catalog Code	Product Description	Quantity
BM554	BioMag® Protein A	2mL or 10mL
BM553	BioMag® Protein G	2mL or 10mL
BP620	BioMag®Plus Protein A	2mL or 10mL
BP627	BioMag®Plus Protein G	2mL or 10mL

Also see our kits:

BP614	BioMag®Plus Protein A Antibody Isolation Kit (2.5mL particles)
BP626	BioMag®Plus Protein G Antibody Isolation Kit (2.5mL particles)

Bangs Goes Buff!

Introducing our New Line of Buffers

Bangs has decided to go buff. Buffers, of course! What did you THINK we meant? We knew you needed them. We had them. And, now we are putting them out there for you in the form of ready-to-use Coupling and Storage Buffers.

With pHs ranging from 4.5 to 9.0, our Coupling Buffers are available in 250mL, 500mL, 1000mL, and 2000mL volumes. These coupling buffers can also be used as wash buffers.

As for the Storage Buffers, we offer pH 7.4 and pH 8.5 varieties, which are also available in 250mL, 500mL, 1000mL, or 2000mL volumes.

Catalog Code	Product Description
BUFF1	Bangs Bead Coupling Buffer, pH 4.5
BUFF2	Bangs Bead Coupling Buffer, pH 6.0
BUFF3	Bangs Bead Coupling Buffer, pH 7.4
BUFF4	Bangs Bead Coupling Buffer, pH 9.0
BUFF5	Bangs Bead Storage Buffer, pH 7.4
BUFF6	Bangs Bead Storage Buffer, pH 8.5

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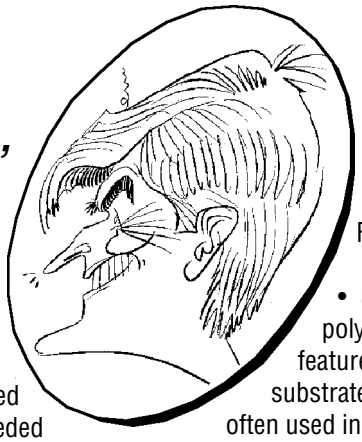
Ask *"The Particle Doctor®"*



Q: I have tried to conjugate lipopolysaccharide (LPS) to carboxylated beads with no success. Any ideas as to what the problem could be? Could you share a proven protocol?

A: Lipopolysaccharides often require specialized coating strategies as they typically lack needed reactive groups for coupling (at least in their native states). Most LPS immobilization schemes feature modification of saccharide moieties for covalent binding. There are also chemistries that are more broadly applicable, such as the use of epoxide-containing reagents, oxidation, etc., though you may want to consider the benefits / drawbacks of each (see *Bioconjugate Techniques*, ISBN: 0-12-342335-X). Polysaccharides may also be immobilized via their affinity binding partners (lectins), however, these are reversible interactions. If the polysaccharides could be biotinylated, they may be (for most application conditions) permanently immobilized to streptavidin-coated beads.

Another option might be to adsorb LPS to microspheres, either through hydrophobic tails of the lipid to non-functionalized polystyrene microspheres, or the hydrophilic region to silica microspheres. However, for adsorbed coatings in general (and particularly where beads will be stored in suspension), shelf life should be considered.

Once you've had a chance to consider the specific structure of the LPS molecule, and factors such as required stability and development time frame, we can provide references associated with a fitting coating strategy.

Q: I'm familiar with the use of polymer beads in flow cytometry, both as instrument QC and set-up standards, and for bead-based assays. However, in looking through your catalog, I see that, while you carry silica microspheres, you don't offer silica bead standards for flow. Out of curiosity, are there any known applications for silica beads in flow cytometry?

A: We are delighted that you asked! By happy coincidence, flow cytometry and silica microspheres are two of our favorite things. (Uncanny, isn't it... ?)

Because of silica's unique optical and physical properties (e.g. low autofluorescence and hydrophilic surface), it has been used as an alternative to polystyrene for certain applications in flow cytometry.

For example:

- Silica exhibits less autofluorescence than does polymer when excited with a UV or violet laser. In fact, we featured NH_2-modified silica in our newsletter as a potential substrate for the binding of amine-reactive dyes that are often used in flow, i.e. for user-created reference / compensation standards (see "Amines to an End," July 2008).

- Silica has been used to support lipid bilayers in the creation of "artificial cells" to study things like membrane receptor / ligand dynamics via flow cytometry, and for specialized biosensing applications. For specific examples, see:

  Lauer, S., B. Goldstein, R. L. Nolan, J.P. Nolan. 2002. Analysis of cholera toxin-ganglioside interactions by flow cytometry. *Biochemistry*, 41(6):1742-1751.

  Zeineldin, R., M.E. Piyasena, T.S. Bergstedt, L.A. Sklar, D. Whitten, G.P. Lopez. 2006. Superquenching as a detector for microsphere-based flow cytometric assays. *Cytometry A*, 69(5):335-41.

- Silica microspheres have proven to be an excellent support for oligonucleotides in hybridization-based assays. The silica surface is negatively charged, which is helpful for deterring the nonspecific binding of DNA. Silica is also highly hydrophilic, and nonspecific binding of proteins (which largely relies on hydrophobic interactions) is less than that seen with many polymer-based beads.

These are just some of the silica microsphere applications that have made an appearance in flow cytometry, and we're sure that we'll continue to see more as investigators explore its unique properties.

On The Road Again!

American Association for Clinical Chemistry
Chicago, Illinois
July 21 - 23, 2009
Booth 157
www.aacc.org

Clinical Cytometry Society
Jacksonville, Florida
October 16 - 18, 2009
Booth 13
www.cytometry.org

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Address Service Requested

Bangs Goes Buff!
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"There are only two seasons – winter and baseball." – Bill Veeck

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