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**BEADS ● ABOVE THE REST™**

## Description

Silica Bind-IT are pure SiO<sub>2</sub> microspheres with a pre-activated surface that allows ready binding of antibody without sacrificing stability.

Our revolutionary Bind-IT chemistry features multivalent binding via coordination complexes. Though the strength of individual interactions is limited, the multiplicity of attachments results in secure immobilization. The Bind-IT surface offers stable coating, but without damage to the tertiary structure of the protein as can sometimes occur with covalent coatings. The end result is a highly active and stable surface that offers significant improvements in the sensitivity and dynamic range of immunoassays.

## Material

### Material Supplied

- Silica Bind-IT pre-activated 1µm or 5µm microspheres (2.5% solids, 25 mg/mL)

### Material Required

- Antibody
- Coupling Buffer (50mM MES, pH 5.2; 0.01% Tween® 20 and 0.05% ProClin® 300 may be included if desired)
- Storage Solution (150mM Normal Saline + 0.025% ProClin 300)
- 1.5mL polypropylene microcentrifuge tubes (low-binding)
- Centrifuge for 1.5mL microcentrifuge tubes
- Pipettor, range 10-100µL
- Tube rotator
- Vortex mixer

## Procedure

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

1. Dispense 100µL microsphere suspension (2.5mg microspheres) to a 1.5mL microcentrifuge tube.
2. Centrifuge to allow complete separation of microspheres. *Note:* For 5µm microspheres, centrifuge for 5 minutes at ~750-1300 x G; for 1µm, centrifuge for 5 minutes at ~300-3000 x G (7.3cm rotation radius).
3. Taking care not to disturb the microsphere pellet, remove supernatant using a 100µL pipettor.
4. Add 100µL Coupling Buffer to the tube. Pulse vortex to fully re-suspend the pellet.
5. Repeat the wash 2 times. After the final wash, remove the supernatant using a 100µL pipettor.
6. Prepare 100µL antibody solution at 1.0 mg/mL in Coupling Buffer.
7. Add antibody solution to microsphere pellet from Step 5, and pulse vortex to mix.
8. Incubate the microspheres and antibody for 60 minutes at room temperature using end-over-end mixing on a rotator.
9. Centrifuge for ~5 minutes at ~750-1300 x G to allow complete separation of microspheres.
10. Taking care not to disturb the microsphere pellet, remove supernatant using a 100µL pipettor.
11. Re-suspend the protein-coated microspheres in 100µL Storage Solution.
12. Vortex for 20 seconds, then separate microspheres via centrifugation.
13. Taking care not to disturb the microsphere pellet, remove and discard the solution using a 100µL pipettor.
14. Repeat the wash procedure, i.e. Steps 11-13.
15. Re-suspend the microspheres in 100µL Storage Solution or other suitable storage buffer.
16. Store antibody-coated spheres at 2-8°C. Do not freeze.



## Notes

1. Silica Bind-IT microspheres should be stored in their original solution until coating.
2. Pre-made coupling buffers compatible with Silica Bind-IT particles include Bangs Bead Coupling Buffer, pH 4.5 (Catalog Code BUFF1) and Bangs Bead Coupling Buffer, pH 6.0 (Catalog Code BUFF2).
3. Once coated, microspheres may be used in standard biologic buffers, though phosphate buffer should be avoided.
4. Additives such as chelators should be avoided.
5. If required, a non-ionic surfactant such as Tween 20 is suggested.
6. Antibody-coated microspheres should be diluted from their concentrated storage form immediately prior to use.
7. Microspheres should be stored at 2-8°C. Do not freeze.

## Trademarks and Registered Trademarks

1. Bind-IT™ is a trademark of Bangs Laboratories, Inc.
2. ProClin® is a registered trademark of Rohm & Haas Company.
3. Tween® is a registered trademark of ICI Americas, Inc.

## Storage and Stability

Store at 2-8°C. Freezing of particles may result in irreversible aggregation and loss of binding activity.

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

## Ordering Information

Catalog Code	Description	Sizes
SB04N	Silica Bind-IT™, 1µm	2mL, 5mL, or 10mL
SB06N	Silica Bind-IT™, 5µm	2mL, 5mL, or 10mL

## Related Products

Catalog Code	Description	Sizes
BUFF1	Bangs Bead Coupling Buffer, pH 4.5	250mL, 500mL, 1000mL, or 2000mL
BUFF2	Bangs Bead Coupling Buffer, pH 6.0	250mL, 500mL, 1000mL, or 2000mL

Order online anytime at [www.bangslabs.com](http://www.bangslabs.com).