Bangs Laboratories, Inc.
BEADS ABOVE THE REST

BioMag® Dextran-coated Charcoal

Product Data Sheet 555

DESCRIPTION

BioMag® Dextran-coated Charcoal is a suspension of BioMag® particles covalently attached to NORIT® activated carbon and dextran. The suspension is supplied in distilled water with 0.1% sodium azide added as a preservative. A 1:5 dilution of this concentrate with phosphate buffered saline (PBS) is necessary before use. After shaking vigorously or vortexing, the diluted suspension is ready to use.

USE AND APPLICATIONS

BioMag® Dextran-coated Charcoal (5mg/mL preparation) is used in tritiated radioimmunoassays and other applications to simplify charcoal-based purifications. The dextran coating on the charcoal serves a gatekeeping or sieving function, permitting small molecules to pass between dextran molecules into the charcoal absorbent, while excluding larger complexes. Free unlabeled and radiolabeled analyte may thus be separated from the antibody-bound fraction. The dextran coated particles have also been used for fluorescent-based assay cleanup, most notably in rapid transglutaminase assays for high-throughput screening applications which employed dansylcadaverine. Similar peptide-based fluorescent assays may also benefit from this cleanup strategy as well, or other small fluorescent molecule labeling, although it's recommended the molecular weight of the binding biomolecule partner be in excess of 10 kD to limit loss.

CHARACTERISTICS

Mean Diameter: 1-10µm
Particle Concentration: BM 555, 5mg/mL, BM 556, 50 mg/mL
Binding Capacity: 750µL (3.75mg) of dilution per assay tube is sufficient to adsorb free unlabeled and tritium (^{3}H)-labeled analyte in a typical competitive radioimmunoassay. *Use only the diluted product in immunoassays.*

MATERIAL

Material Supplied

BM555 BioMag® Dextran-coated Charcoal: 100mL; or BM556 BioMag® Dextran-coated Charcoal Concentrate: 1000mL

Material Required

Phosphate buffered saline (if needed for dilution)
Magnetic separator
Test tubes
Scintillation vials

PROCEDURE

Researchers are advised to optimize the use of BioMag® in any application as procedures designed by other manufacturers may not be ideal.

In preparation for use, the product should be shaken vigorously as well as before dilution. If working with the concentrated form (BM 556, 50mg/mL), a 1:5 dilution of this concentrate with phosphate buffered saline (PBS) is necessary before use. Add 4 parts PBS to 1 part concentrate.

Assay tubes are placed in a magnetic separation unit that pulls BioMag® Dextran-coated Charcoal Concentrate containing the free radiolabeled and unlabeled analyte to the bottom of the test tubes, leaving the antibody bound analyte in the supernatant. The entire separation unit is inverted to simultaneously decant thirty test tubes into scintillation vials to quantify antibody-bound analyte. Please inquire for further information on the BioMag® separation device best suited to your application.

REFERENCES

1. Herbert, V., K.S. Lau, C.W. Gottlieb, S.J. Bleicher. 1965. *Coated charcoal immunoassay of insulin.* J Clin Endocrinol Metab, 25(10): 1375-1384.
2. Li, H., Zhang, L., Cui, Y., Luo, X., Xue, C., Wang, S., ... & Du, M. (2014). *Characterization of recombinant Zea mays transglutaminase expressed in Pichia pastoris and its impact on full and non-fat yoghurts.* Journal of the Science of Food and Agriculture, 94(6), 1225-1230.
3. Naik, A. D., Menegatti, S., Reese, H. R., Gurgel, P. V., & Carbonell, R. G. (2012). *Process for purification of monoclonal antibody expressed in transgenic Lemna plant extract using dextran-coated charcoal and hexamer peptide affinity resin.* Journal of Chromatography A, 1260, 61-66.
4. Poznanski, N., W.J. Poznanski. 1969. *Laboratory application of the dextran-coated-charcoal radioimmunoassay of insulin.* Clin Chem, 15(9):908-918.
5. Wu, Y.W., Y.H. Tsai. 2006. *A rapid transglutaminase assay for high-throughput screening applications.* J Biomol Screening, 11(7): 836-843.
6. Wu, Y. W., & Tsai, Y. H. (2012). U.S. Patent No. 8,133,683. Washington, DC: U.S. Patent and Trademark Office.

TRADEMARKS

BioMag® is a registered trademark of Polysciences, Inc.
NORIT® is a registered trademark of Norit N.V.

STORAGE AND STABILITY

Store at 2-8˚C. Freezing, drying, or centrifuging particles may result in irreversible aggregation, with loss of surface area and binding capacity.

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.

Observe your institution's guidelines for safe handling and disposal of radiolabled materials if using BioMag® Dextran-coated Charcoal in radiometric assays or isolations.

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	Size
BM555	BioMag® Dextran-coated Charcoal	100mL
BM556	BioMag® Dextran-coated Charcoal Concentrate	1000mL

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