Bangs Laboratories, Inc.
BEADS ABOVE THE REST

Microspheres support vaccine development, efficacy determination and manufacturing through utilization as particulate antigen delivery vehicles, assay reagents and analytical instrument standards. *See how!*

Karauzum H, Updegrove TB, Kong M, Wu I-L, Datta SK, *Ramamurthi KS. (2018) Vaccine display on artificial bacterial spores enhances protective efficacy against Staphylococcus aureus infection.* FEMS Microbiol Lett. Advance online publication. doi: 10.1093/femsle/fny190.
Featuring synthetic spore-like particles comprised of 5µm silica microspheres with a lipid bilayer displaying hemolysin A alpha toxin protein (Hla^{H35L}) for enhanced S. aureus protection in a mouse model.

Buffin S, Ikhelef N, Prudent J, Dubayle J, Nougarede N, Varenne M-P, Moste C, Legastelois I. (2018) *A latex agglutination assay to quantify the amount of hemagglutinin protein in adjuvanted low-dose influenza monovalent vaccines*. J Viorol Methods; 251:46-53.
Featuring 0.741µm polymer spheres in an agglutination assay for quantification of hemagglutinin in influenza vaccine formulation.

Nandin IS, Fong C, Deantonio C, Torreno-Pina J, Pecetta S, Maldonado P, … Batista, FD. (2017) *Novel in vitro booster vaccination to rapidly generate antigen-specific human monoclonal antibodies.* J Exp Med. 214(9):2811.
Featuring 0.11µm Streptavidin-coated microspheres with immobilized biotin-CpG or other proteins to facilitate immunogen screening and therapeutic Ab production.

Musil J, Kutinova L, Zurkova K, Hainz P, Babiarova K, Krystofova J, Nemeckova, S. (2014) *Antitumor activity and immunogenicity of recombinant vaccinia virus expressing HPV 16 E7 protein SigE7LAMP is enhanced by high-level coexpression of IGFBP-3*. Cancer gene therapy, 21(3), 115.
Featuring Protein G Flow Cytometry Antibody Binding Beads for binding anti-vaccinia Ab & capture of HPV virions for downstream analysis.

Park, MK, Briles, DE, Nahm, MH (2000) *A Latex Bead-Based Flow Cytometric Immunoassay Capable of Simultaneous Typing of Multiple Pneumococcal Serotypes (Multibead Assay)* Clin Vaccine Immunol v7(3) 486-489.
Featuring coated carboxylated PS microspheres for serotyping pneumococcal isolates & investigation of vaccine efficacy.

Kaminski RW, Wu M, Turbyfill KR, Clarkson K, Tai B, Bourgeois AL, Van De Verg LL, Walker RI, Oaks EV. (2014) *Development and preclinical evaluation of a trivalent, formalin-inactivated Shigella whole-cell vaccine.*Clin Vaccine Immunol; 21(3):366-382.
Featuring ViaCheck™ controls to validate cell counting procedure.

Østergaard E, Frandsen PL, Sandberg E, (2015) *Determination of freeze damage on HPV vaccines by use of flow cytometry.* Biologicals Vol. 43,4:266–273.
Featuring Small Bead Calibration Kits for size analysis of papillomavirus VLPs from vaccine degraded via freezing.

Mahajan A, Youssef LA, Cleyrat C, Grattan R, Lucerco SR, Mattison CP, et al. (207) *Allergen valency, dose and FcεRI occupancy set thresholds for secretory responses to Pen a 1 and motivate design of hypoallergens.* J Immunol; 198(3):1034-1046.
Featuring Quantum MESF FITC calibration beads for the flow cytometric binding of IgE–FcεRI in the design of hypoallergens for food allergy vaccine development.

Yu J, Carvalho Mda GS, Beall B, Nahm. (2008) *A rapid pneumococcal serotyping system based on monoclonal antibodies and PCR*. J Med Microbiol; 57:171-178.
Featuring coated QuantumPlex™ COOH for rapid serotyping of pneumococcal isolates from the vaccinated population.