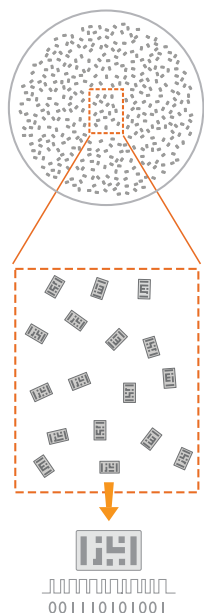


Barcoded Magnetic Beads for Highly Multiplexed Assays



Barcoded Magnetic Beads

Barcoded Magnetic Beads (BMBs) combine well-established semi-conductor manufacturing processes with proven molecular and immunochemistry methodologies into a breakthrough digital technology. This platform is capable of detecting multiple analytes in one test, thereby significantly increasing the throughput of detection by conventional assays. The BMBs are fabricated by encasing paramagnetic material with biocompatible polymers. This results in a highly stable surface chemistry where the paramagnetic material exhibits magnetic properties for ease of washing, separation, and recovery. The BMB barcode patterns are designed to give high contrast signals, enabling very accurate identification of target analytes. The beads are functionalized for coupling with nucleic acids, proteins, or other probe molecules, allowing high density multiplex assays to be carried out in heterogeneous media.

The figure to the left shows an image frame on the bottom of a 96-well microwell following target reaction. A mixture of BMBs can be simultaneously decoded and fluorescence (e.g. red) detected with proven optical technology. Decoding is based on the high contrast transmission bandwidth.

BMBs for Nucleic Acids & Protein Assays

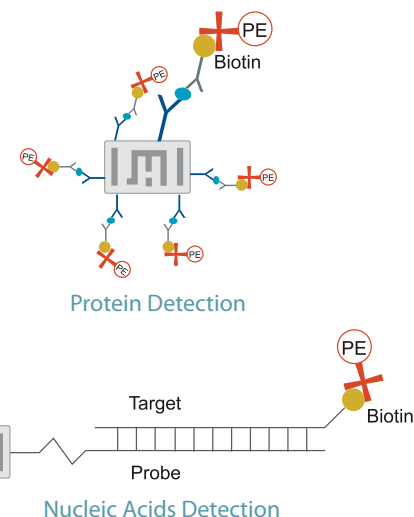
Digitally barcoded magnetic beads are highly stable and demonstrate minimal, non-specific binding characteristics in biological assays. Applied BioCode, Inc. currently offers three different functionalized beads:

Carboxyl beads – enables covalent attachment of nucleic acids, and other ligands on the bead surface with the characteristics of high stability and low nonspecific binding. Carboxyl beads permit covalent linkage of amino-modified probes and specific primers to the bead surface.

P-Carboxyl beads – enables covalent attachment of proteins, peptides, and other ligands with the characteristics of high stability and low non-specific binding. P-Carboxyl beads enable proteins to bind to the bead surface covalently via amino groups.

Amino beads – enables covalent attachment of proteins, peptides, and other ligands with the characteristics of high stability and low non-specific binding. Amino beads enable proteins to bind to the bead surface covalently via carboxyl groups.

Streptavidin beads – designed for high affinity binding to biotinylated molecules. This simple and flexible immobilization chemistry enables rapid assay development for a variety of applications.



Applied BioCode

Multiplex Biomarker Assay Development Tools

Creating your own multiplex biomarker assays for protein or nucleic acid-based detection is easy with new assay development tools from Applied BioCode, Inc.

The nucleic acids coupling kit contains all necessary reagents and detailed instructions for coupling oligonucleotide or DNA probes to distinct Barcoded Magnetic Beads. The kit facilitates unique barcode designation of your favorite detection probes, and custom made multiplex assay development easy for genetic biomarkers, gene expression and infectious disease testing.

The protein-to-bead conjugation kit contains all necessary reagents and detailed instructions for coupling proteins or antibodies to distinct Barcoded Magnetic Beads. By facilitating unique barcode designation of your favorite proteins or antibodies, the kit makes multiplex immunoassays easy and affordable while increasing productivity for your laboratory personnel.

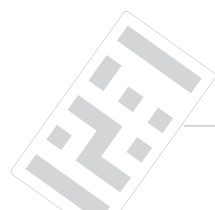


Product Information

4,096-Plex BMB Part #	Name	Description	# of Reactions
44-B0302-NNNN-50K	4096-BMB-C	Carboxyl BMB with barcode NNNN, NNNN = 0000 ~ 4,095	1000
44-B0312-NNNN-50K	4096-BMB-P	P-Carboxyl BMB with barcode NNNN, NNNN = 0000 ~ 4,095	1000
44-B0303-NNNN-50K	4096-BMB-A	Amino BMB with barcode NNNN, NNNN = 0000 ~ 4,095	1000
44-B0322-NNNN-50K	4096-BMB-SA	Streptavidin coated BMB with barcode NNNN, NNNN = 0000 ~ 4,095	1000
Coupling Kit Part #	Name	Description	# of Reactions
64-RO102	Nucleic Acid Coupling Kit	24 plex carboxyl BMBs	200
64-RO112	Protein/Antibody Coupling Kit	24 plex carboxyl BMBs	200

- One BMB tube contains about 50,000 beads, sufficient for processing ten 96-well microplates. 50 beads per target are recommended.
- Custom packaging size of ~1 to 10 million BMBs per tube are available upon request.
- 4,096-plex BMBs have an approximate size of: 68 x 40 x 5 μ m
- BMBs have a density of 1.19 g/cc and are easy to suspend in solution.

For Research Use Only



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