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GPR VeraCode® Beads

VeraCode Universal Capture and Carboxyl Beads are now available as General Purpose Reagents (GPR) for rapid, convenient development of custom multiplex assays.

Highlights of GPR VeraCode Beads

- **Flexible Multiplex Assays:**
  Open platform enables development of cost-effective, custom assays for nucleic acid sequence or protein analysis.
- **Progressive Licensing:**
  Product price includes rights for use in laboratory-developed tests or for resale of kits.
- **High-Quality Platform:**
  Manufactured in a GMP environment.
- **Verifiable Results:**
  Digital microbead codes provide unparalleled data quality whether paired with capture oligos or carboxyl molecules.

Introduction

For assay developers, access to flexible, high-quality, cost-effective multiplexing platforms for deploying new genomic and proteomic content is critical for success. Without it, incorporating newly validated information can be difficult. To overcome this challenge, Illumina offers VeraCode Universal Capture and Carboxyl Beads as General Purpose Reagents (GPR). These digitally coded microbeads enable development of custom multiplex assays in a variety of analysis methods, without the burden of royalty payments.

VeraCode Technology

Known for its versatility and reliability, the VeraCode platform leverages cutting-edge microbead technology to enable flexible multiplex assay deployment[1]. VeraCode microbeads are glass cylinders, each inscribed with a unique holographic code. This code enables positive identification for unparalleled data quality. Two different types of VeraCode beads are available. Universal Capture Beads allow custom design of nucleic acid–based assays, including allele-specific primer extension (ASPE) assays[2]. Carboxyl Beads provide an open platform for developing protein-based assays[3].

VeraCode Universal Capture Beads for Convenient, Flexible ASPE Assays

GPR VeraCode Universal Capture Beads, pre-coupled with 23-mer capture oligonucleotides, allow developers of custom multiplex assays to use their preferred assay methodology. Every capture sequence is paired with a specific bead type and pre-screened to limit cross reactivity within the human genome.

Multiple online design tools, such as primer 3 and mfold, are available for developing custom assays for use with Universal Capture Beads. Designed probes are attached to the Universal Capture Beads, which are then assayed. The use of solution-phase kinetics provides a streamlined protocol and rapid sample processing. Single-plate chemistry minimizes hands-on time and reduces the chance of errors (Figure 1).

VeraCode Carboxyl Beads Provide an Open Platform for Assay Development

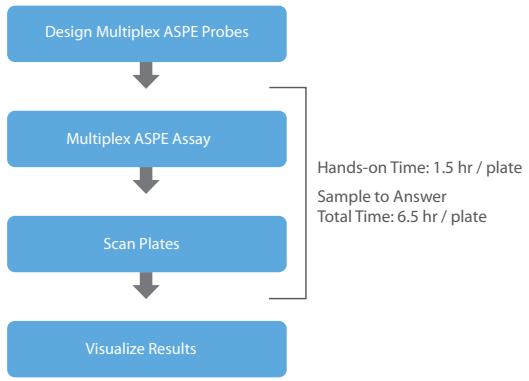
Carboxyl Beads enable covalent attachment of proteins, peptides, nucleic acid, and other ligands in a highly multiplexed format (Figure 2). These extremely stable beads demonstrate low non-specific binding, while the simple and flexible immobilization chemistry enables rapid assay design for a variety of analytes. Assay products can be labeled with standard fluorescent reporters such as phycoerythrin (R-PE), Cy3, Cy5, or Alexa Fluor dyes, providing an open platform for laboratory developed tests. Each assay bead type is present at high redundancy (30 bead types per sample average) to ensure high data quality.

Streamlined Workflow

Whether using Universal Capture or Carboxyl Beads, individual assay bead types can be pooled in combination for flexible multiplexing. Assays are conducted in 96-well plates to enable streamlined high-throughput workflows. The VeraCode Bead Kitting System reduces manual pipetting during distribution of custom bead pools into plates, reducing hands on time and the chance of user error. In addition, the highly stable VeraCode beads can be stored as kitted plates.

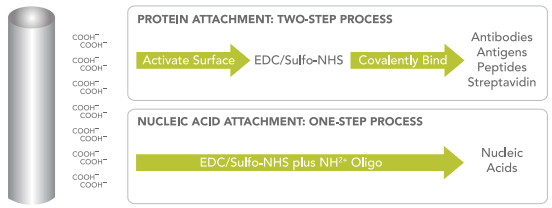
VeraScan and GenomeStudio® Data Analysis Software are available to support analysis for multiple applications, including nucleic acid and protein analysis.

Figure 1: Streamlined VeraCode Universal Capture Bead Workflow



Simple assay design, a streamlined workflow, and intuitive analysis tools support flexible custom assay development.

Figure 2: Flexible Assay Design with VeraCode Carboxyl Beads



Attach protein or nucleic acid molecules to VeraCode Carboxyl Beads. Each beads harbors a unique code for downstream tracking and identification.

Progressive Licensing

Illumina has adopted a progressive licensing policy for General Purpose Reagents. GPR Universal Capture and Carboxyl Beads include the rights for use in any manner consistent with a general purpose reagent, as defined by the US Food and Drug Administration, including use in a CLIA high-complexity laboratory for development of a laboratory-developed test and for use in kits intended for resale. No subsequent royalty payments are required.

Additional Information

To learn more about VeraCode technology, visit www.illumina.com. For information about collaborating with Illumina for the development of kits for resale using Universal Capture or Carboxyl Beads or other Illumina technologies, please contact Marla Bornstein at marlabornstein@illumina.com.

References

1. www.illumina.com/downloads/VeraCodeBrochure.pdf
2. www.illumina.com/downloads/UniversalBeadSts_DataSheet.pdf
3. www.illumina.com/downloads/CarboxylBeadSts_DataSheet.pdf

Ordering Information

Product	Quantity	Catalog No.
GPR VeraCode Universal Capture Bead Sets*		
GPR VeraCode Universal Bead Set, Code 5440	6 × 96 reactions	VC-910-5440
GPR VeraCode Universal Bead Set, Code 5632	6 × 96 reactions	VC-910-5632
GPR VeraCode Universal Bead Set, Code 5634	6 × 96 reactions	VC-910-5634
Pre-pooled GPR VeraCode Universal Capture Bead Set with 48 unique bead codes per vial	6 × 96 reactions	VC-910-0481
Pre-pooled GPR VeraCode Universal Capture Bead Set with 48 unique bead codes per vial	6 × 96 reactions	VC-910-0482
GPR VeraCode Carboxyl Bead Sets		
GPR VeraCode Carboxyl Bead Set A	6 × 96 reactions	VC-920-8193
GPR VeraCode Carboxyl Bead Set B	6 × 96 reactions	VC-920-8199
GPR VeraCode Carboxyl Bead Set C	6 × 96 reactions	VC-920-8208
GPR VeraCode Carboxyl Bead Set D	6 × 96 reactions	VC-920-8214
GPR VeraCode Carboxyl Bead Set E	6 × 96 reactions	VC-920-8226
GPR VeraCode Carboxyl Bead Set F	6 × 96 reactions	VC-920-8240
GPR VeraCode Carboxyl Bead Set G	6 × 96 reactions	VC-920-8258
GPR VeraCode Carboxyl Bead Set H	6 × 96 reactions	VC-920-8265
GPR VeraCode Carboxyl Bead Set I	6 × 96 reactions	VC-920-8288
GPR VeraCode Carboxyl Bead Set J	6 × 96 reactions	VC-920-8322

* Please contact Customer Solutions for the complete list of the >144 Universal Capture Bead types available.

Illumina, Inc. • 9885 Towne Centre Drive, San Diego, CA 92121 USA • 1.800.809.4566 toll-free • 1.858.202.4566 tel • techsupport@illumina.com • illumina.com

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