



**CELLECTA**

## Product Analysis Certificate

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### DECIPHER™ Human Pooled Lentiviral shRNA Libraries

**Contents:** DECIPHER shRNA Library Human Module 1 (Plasmid), Cat. # DHPAC-M1-P  
*Store at -20°C* DECIPHER shRNA Library Human Module 2 (Plasmid), Cat. # DHDAC-M2-P  
DECIPHER shRNA Library Human Module 3 (Plasmid), Cat. # DHSC-M3-P  
DECIPHER shRNA Expression Vector (Plasmid), Cat. # DSHC-DS-EV

**Description:**

DECIPHER libraries are pooled bar-coded lentiviral shRNA libraries optimized for RNAi Genetic Screens in pooled format. The high percentage of functionally validated sequences and inclusion of a redundant set of 5 to 6 shRNA per gene results in at least 70% knockdown efficiency for approximately 65% of the target genes represented (depending on the cell type). The vast majority of shRNA constructs in the library are represented in almost equal concentrations, with about 90% present within a 10-fold range.

Specially-designed, optimized 18-nucleotide bar-codes facilitate HT sequencing data analysis and identification of functional shRNAs. Using the Illumina HiSeq or GAllx HT Sequencing platform, bar-codes are identified and can be converted to lists of genes/shRNA with enumerated bar-code data using the DECIPHER Bar-code Deconvoluter software available on the DECIPHER Project website at <http://www.decipherproject.net/software/>.

The plasmid shRNA libraries can be packaged into VSV-G pseudotyped viral particles using most commercially-available second or third-generation packaging mixes or using a psPAX2/pMD2.G packaging mix (Cellecta, Cat.# CPCP-K2A, prep-to-order).

**Biosafety Level:** BSL-2

**Storage:** -20°C

**Shelf Life:** 12 months from date of receipt

**Shipping Conditions:** *U.S. Shipments:* Room temperature or Blue Ice  
*International:* Blue Ice

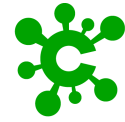


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Contents (Store at -20°C):

Catalog #	Description	Conc. (ug/ul)	Total Volume	# Vials
DHPAC-M1-P	<b>DECIPHER 27K Lentiviral shRNA Library (Plasmid)</b> <b>Human Module 1</b> , Pathway Targets (5,043 targets, 27,500 shRNAs) in pRSI9-U6-(sh)-UbiC-TagRFP-2A-Puro 120 µg; 1.0 µg, 120 µl lot# 100526A; Store at -20°C	1.0	120 µl	1
DHDAC-M2-P	<b>DECIPHER 27K Lentiviral shRNA Library (Plasmid)</b> <b>Human Module 2</b> , Disease Targets (5,412 targets, 27,500 shRNAs) in pRSI9-U6-(sh)-UbiC-TagRFP-2A-Puro 120 µg; 1.0 µg, 120 µl lot# 100727A; Store at -20°C	1.0	120 µl	1
DHCSC-M3-P	<b>DECIPHER 27K Lentiviral shRNA Library (Plasmid)</b> <b>Human Module 3</b> , Cell Surface, Extracellular, and DNA Binding Targets (4,922 targets, 27,500 shRNAs) in pRSI9-U6-(sh)-UbiC-TagRFP-2A-Puro 120 µg; 1.0 µg, 120 µl lot# 1007301; Store at -20°C	1.0	120 µl	1
DSHC-DS-EV	<b>DECIPHER shRNA Expression Vector (Plasmid, undigested)</b> pRSI9-U6-(sh)-UbiC-TagRFP-2A-Puro 10 µg; 1.0 µg, 10 µl lot# 1009281; Store at -20°C	1.0	10 µl	1

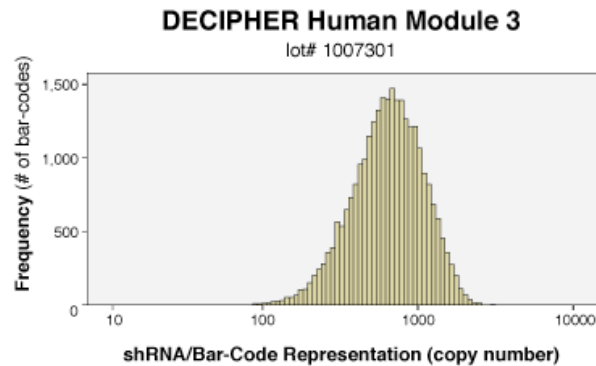
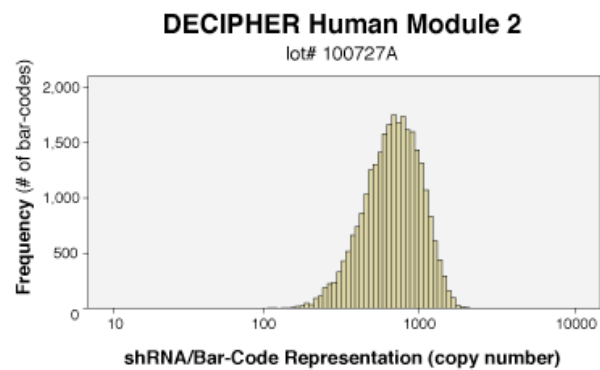
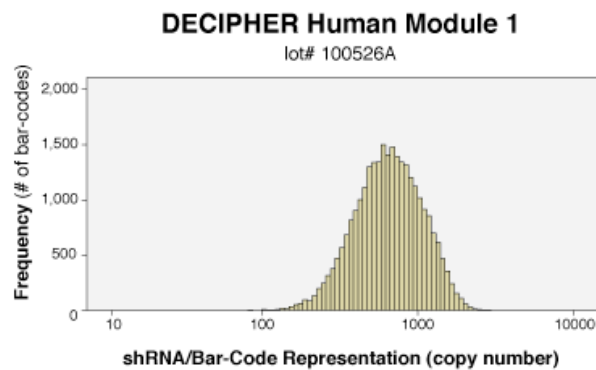


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### Quality Control

#### Library Representation

The histograms below show the distribution of shRNA/bar-code sequences in the DECIPHER plasmid shRNA library. Virtually all of the shRNA are present in more than 100 copies and most are around 1,000 copies per 20 million HT sequencing “reads”, the output of the Illumina GAIIX at the time of Q.C.\* Also, there is less than a 10-fold difference between the most and least represented for 90% of the shRNAs, so the libraries have a relatively balanced representation of all shRNAs.



\* As of 9/9/11, the standard output of the Illumina HiSeq 2000 (successor to the GAIIX) is approximately 80 million reads.



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### Individual Clone Sequencing Data

Approximately 200 random clones picked from all 5 of the current Plasmid DECIPHER pooled shRNA libraries were analyzed (40 per module x 5 modules). Of the 200 clones, 96 were sequenced.

The lots tested were:

Human Module 1, lot# 100526A  
Human Module 2, lot# 100727A  
Human Module 3, lot# 1007301  
Mouse Module 1, lot# 1008021  
Mouse Module 2, lot# 1008031

**Insert Rate (from 200 clones):** >95%

**Total number of nucleotides sequenced:** 5,800 (shRNA portion is approximately 60 nt)

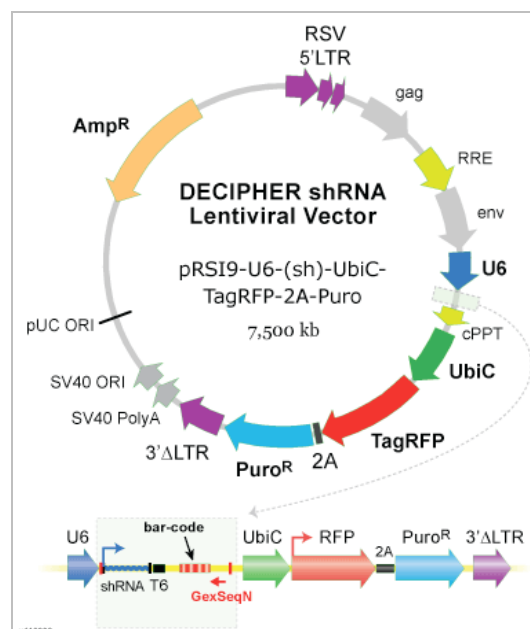
**Number of clones with perfect sequence** (no mutations, deletions, nor insertions in shRNA portion (sense-loop-antisense): 89 (91%)

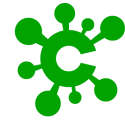
**Number clones with at least one mutation, deletion, or insertion:** 7 (1 insertion (A), 6 mutations (A>G, A>T, A>T, T>A, C>A, A>G))

**Mutation/Insertion/Deletion rate:** 0.12% (*i.e.* approximately 1 Mut/Del/Ins in 800 nucleotides)

### Vector Sequence

All functional elements of the DECIPHER shRNA Expression Vector were sequence-verified and experimentally tested for functionality.





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### Terms and Conditions

#### Cellecta, Inc. Limited License

Cellecta grants the end user (the "Recipient") of the DECIPHER shRNA Libraries and Vector (the "Product") a non-transferable, non-exclusive license to use the reagents for internal research use only as described in the enclosed protocols; in particular, research use only excludes and without limitation, resale, repackaging, or use for the making or selling of any commercial product or service without the written approval of Cellecta, Inc. -- separate licenses are available for non-research use or applications. The Product is not to be used for human diagnostics or included/used in any drug intended for human use. Care and attention should be exercised in handling the Product by following appropriate research laboratory practices.

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"This Internal Use only license grants End-Users the sole right to use and fully consume or destroy this product (the "**Product**"). Use of the Product is limited to Research Use ONLY, not for diagnostic procedures. In all cases, sale or other transfer or distribution to third parties of (i) the Product, or any portion, (ii) DNA, RNA and protein constructs or libraries created from the Product or any portion, or of (iii) transformed phage, viruses, cells, or tissues created directly or indirectly from the Product, or any portion is strictly prohibited without prior written approval by Agilent Technologies, Inc."

#### Life Technologies Corporation End-User Label License for the use of Lentiviral Expression System:

"This product or service (based upon the Lentiviral Expression System) is sublicensed from Life Technologies Corporation under U.S. Patent Nos. 5,686,279; 5,834,256; 5,858,740; 5,994,136; 6,013,516; 6,051,427; 6,165,782; 6,218,187; 6,428,953; 6,924,144; 7,083,981 and 7,250,299 and corresponding patents and applications in other countries for internal research purposes only. Use of this technology for gene therapy applications or bioprocessing other than for nonhuman research use requires a license from GBP IP, LLC. Please contact GBP IP, LLC 537 Steamboat Road, Suite 200, Greenwich, CT 06830. Use of this technology to make or sell products or offer services for consideration in the research market requires a license from Life Technologies Corporation, 5791 Van Allen Way, Carlsbad, CA 92008."

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