

Product Analysis Certificate

Control Lentiviral Human KRAS shRNA Construct in pRSI16 (Plasmid)
Cat.# SHCTL-KRAS-PX
Lot# 16012902



Control Lentiviral Human KRAS shRNA Construct

Shipment Contents: Control Lentiviral Human KRAS shRNA Construct in pRSI16 (Plasmid)
- Store at -20°C

Description:

Cellecta's shRNA constructs are lentiviral vectors expressing short-hairpin RNA for knockdown of target mRNA transcripts. The use of our proprietary shRNA design algorithm and database of validated shRNAs results in a high percentage of functional sequences, typically at least 70% knockdown efficiency for approximately 70% of shRNA constructs. Results may vary between different cell types.

The Lentiviral Human KRAS shRNA Construct expresses a functionally validated shRNA targeting Human KRAS mRNA (RefSeq# NM_033360.2).

The plasmid shRNA construct can be packaged into VSV-G pseudotyped viral particles using most commercially-available second or third-generation packaging mixes or Cellecta's second-generation psPAX2/pMD2.G packaging plasmid mix (Ready-to-use Packaging Plasmid Mix, Cat.# CPCP-K2A, 250 µg).

Biosafety Level: BSL-2

Storage: -20°C

Shelf Life: 2 years from date of receipt

Shipping Conditions: Room Temperature, Blue Ice, or Dry Ice

Product Information (Cellecta Website):

User Manual: <https://www.cellecta.com/resources/product-manuals-and-certificates/>
Vector Info (Sequence, cassette, etc): <https://www.cellecta.com/resources/vector-information/>

Product Analysis Certificate

Control Lentiviral Human KRAS shRNA Construct in pRSI16 (Plasmid)
Cat.# SHCTL-KRAS-PX
Lot# 16012902



Contents:

#	Catalog #	Description
1	SHCTL-KRAS-PX	Control Lentiviral Human KRAS shRNA Expression Construct (Plasmid) In pRSI16-U6-sh-UbiC-TagRFP-2A-Puro RefSeq#: NM_033360.2 <u>Plasmid, >25 µg:</u> 25 µg , 0.5 µg/µl (50 µl) Lot# 16012902; Store at -20°C
	Target Sequence:	GACGATACAGCTAATTCAGAA
	Insert (Hairpin) Seq.:	ACCGGGACGATACAGCTAATTTAGAAGTTAATATTCATAGCTTCTGAATTAGCTGTATCGTCTTTT

Design of Collecta shRNA Constructs:

ACCGG-21mer (**sense**+mismatch(es)*)-GTTAATATTCATAGC (**loop**)-21mer (**antisense**)-TTTT

* **The sense portion of the shRNA may contain specific mismatches introduced by Collecta.** We incorporate some mismatches in our library hairpins to improve stability and representation in a pooled-screening format. Although we have not observed any significant differences in efficacy between perfectly homologous shRNA sequences and those with 1-2 non-sequential mismatches, we typically use the same hairpin design for individual constructs to maintain sequence consistency with our functionally active library designs.

Product Analysis Certificate

Control Lentiviral Human KRAS shRNA Construct in pRSI16 (Plasmid)
Cat. # SHCTL-KRAS-PX
Lot# 16012902



Terms and Conditions

Cellecta, Inc. Limited License

Cellecta grants the end user (the "Recipient") of the Control Lentiviral shRNA Construct (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.

Cellecta's liability is expressly limited to replacement of Product or a refund limited to the actual purchase price. Cellecta's liability does not extend to any damages arising from use or improper use of the Product, or losses associated with the use of additional materials or reagents. This limited warranty is the sole and exclusive warranty. Cellecta does not provide any other warranties of any kind, expressed or implied, including the merchantability or fitness of the Product for a particular purpose. Use of the Product for any use other than described expressly herein may be covered by patents or subject to rights other than those mentioned. Cellecta disclaims any and all responsibility for injury or damage that may be caused by the failure of the Recipient or any other person to use the Product in accordance with the terms and conditions outlined herein.

The Recipient may refuse these licenses by returning the enclosed Product unused. By keeping or using the enclosed Product, you agree to be bound by the terms of these licenses. The laws of the State of California shall govern the interpretation and enforcement of the terms of these Licenses.

Limited Use Licenses

The Recipient acknowledges that Product has been developed by Cellecta based on licenses from Third Parties and agrees with the Terms of Limited Use for the Recipient provided by the Third Parties:

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; 5,838,740; 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."

Evrogen IP JSC End-User Label License for the use of lentiviral shRNA constructs comprising TagRFP-encoded gene:

"This product is for internal non-commercial research use only. No rights are conveyed to modify or clone the gene encoding fluorescent protein contained in this product. The right to use this product specifically excludes the right to validate or screen compounds. For information on commercial licensing, contact Evrogen Licensing Department, email: license@evrogen.com".

Cold Spring Harbor Laboratory (CSHL) shRNA Product End-User Label License for use of expression vectors encoding an shRNA

Acceptance. This Limited Use License ("License") contains the exclusive terms and conditions between CSHL and Customer for use of the Product. By opening the Product container or in any other way accessing or using the Product ("Acceptance"), you will create a binding legal contract upon the terms and conditions herein, without modification. Customer's purchase order or similar terms shall not apply to this License. If you are not authorized by Customer to enter into this License or do not agree to all terms and conditions in this License, then you are prohibited from opening the Product container or otherwise accessing or using the Product.

Permitted Use. Portions of the Product are covered by US and foreign patent applications or patents and other proprietary intellectual property rights owned by CSHL ("shRNA IP Rights"). Subject to Acceptance and all terms and conditions of this License, sale of the Product to Customer by Seller (acting under its license from CSHL, an "Authorized Sale") conveys to Customer only the nonexclusive, nontransferable right under the shRNA IP Rights to use the Product solely for Customer's internal research purposes, and only at its facility where the Products are delivered by Seller.

Unlicensed Products. Any Product that is acquired other than pursuant to an Authorized Sale (including without limitation, any Product not acquired from Seller) shall be deemed to be an "Unlicensed Product". This License shall be void and of no effect for Unlicensed Products and shall not convey any express or implied right to make, use or sell Unlicensed Products for any purpose.

Restrictions. Customer obtains no right to sublicense its rights, or to use the Product for the benefit of any third party for any commercial purpose (including without limitation, using the Product in connection with providing services to any third party or generating commercial databases). The Product may not be used in vitro or in vivo for any diagnostic, preventative, therapeutic or vaccine application, or used (directly or indirectly) in humans for any purpose. Customer may not isolate, extract, reverse engineer, derive, copy or separately use any component of the Product (such as, for example, any shRNA component) for any commercial purpose (including without limitation, for the purpose of making Products) other than solely for Customer's internal research purposes.

Non-Profit Customers. If Customer is a Non-Profit Entity, then the following additional restrictions shall apply: Customer obtains no right to use the Product for any commercial purpose.

Commercial Customers. If Customer is a Commercial Entity, (unless Customer has already entered into a separate written agreement that has been executed by CSHL, that covers the shRNA IP rights, and that is then currently in effect) then the following additional restrictions shall apply: This License and Customer's rights hereunder automatically terminate 1 year after delivery of Product to Customer. After 1 year of Product use customer must enter into a separate written agreement with CSHL that covers the shRNA IP rights or Customer shall immediately stop using and destroy all Product in its possession. The Product may not be used to make any mouse that is of a strain of mice for germ line transmission by embryonic transfer of a gene encoding an shRNA that induces suppression of a gene or genes by RNAi.

Product Analysis Certificate

Control Lentiviral Human KRAS shRNA Construct in pRSI16 (Plasmid)
Cat.# SHCTL-KRAS-PX
Lot# 16012902



No Transfers. Customer may not distribute or transfer the Product (by license, sale, loan, lease, rental or any other means) to any commercial partner or any other third party for any commercial purpose, except only in the following case. Customer may transfer the unmodified Product to a commercial third party contractor who, pursuant to a written agreement with Customer and only for non-royalty based payment(s), undertakes on behalf of Customer to use the Product solely for Customer's benefit and internal research purposes, which third party shall not, after termination of such work, retain or receive subsequent rights to possess, access or use any Product (or any results of such work), and from whom Customer receives no payments pursuant to such agreement.

Compliance. Customer may only use the Product in compliance with all local, state, federal and other applicable laws, regulations and rules, including without limitation (for uses in the United States), EPA, FDA, USDA and NIH guidelines, Customer may not (directly or indirectly) use the Product, or allow the transfer, transmission, export or re-export of all or any part of the Product or any product thereof, in violation of any export control law or regulation of the United States or any other relevant jurisdiction.

Disclaimers. THE PRODUCT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. NO WARRANTY IS MADE THAT THE PRODUCT WILL MEET CUSTOMER'S REQUIREMENTS, OR THAT ANY RESULT CAN BE ACHIEVED, OR THAT USE OF THE PRODUCT WILL NOT INFRINGE ANY PATENT OR OTHER PROPRIETARY RIGHT. ALL WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, ARE HEREBY EXPRESSLY DISCLAIMED, INCLUDING WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF NON-INFRINGEMENT, QUIET ENJOYMENT, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM ANY COURSE OF DEALING, COURSE OF PERFORMANCE OR USAGE OF TRADE.

Other Uses. Except for the limited use expressly specified above, no other license is granted, no other use is permitted and CSHL retains all rights, title and interests in and to the shRNA IP Rights. Nothing herein confers to Customer (by implication, estoppel or otherwise) any right or license under any patent, patent application or other proprietary intellectual property right of CSHL other than the shRNA IP Rights. For information on purchasing a license to use the Product for longer time periods, in greater quantities or for other purposes, or to practice more broadly under the shRNA IP Rights, or to practice under other CSHL intellectual property rights, please contact the CSHL Office of Technology Transfer at (516) 367-8301.

Definitions. "Affiliate" means, at the time of reference thereto, any corporation, company, partnership, joint venture or other entity which controls, is controlled by or is under common control with the subject entity, where "control" means direct or indirect ownership of more than 50% of (i) the outstanding stock or other voting rights entitled to elect directors or (ii) all ownership interests (or, in any country where the local law shall not permit foreign equity participation of 50% or more, then the direct or indirect ownership or control of the maximum percentage of such outstanding stock, voting rights or ownership interests permitted by local law). "Commercial Entity" means any entity or organization other than a Non-Profit Entity. "CSHL" means Cold Spring Harbor Laboratory. "Customer" means the company or other entity or organization that orders, pays for and takes delivery of the Product. "Non-Profit Entity" means any college, university or governmental entity (including without limitation, governmental and quasi-governmental institutes and research laboratories), or any non-profit scientific, research or educational organization that is of the type described in section 501(c)(3) of the Internal Revenue Code or that is qualified under a state non-profit organization statute. "Product" means a product (including without limitation, expression vectors encoding an shRNA), the design, manufacture or use of which (in whole or in part) is the subject of the shRNA IP Rights, and is deemed to include all components, progeny, reproductions, modified versions and other derivatives thereof. "Seller" means Collecta, Inc.

© 2015 Collecta, Inc. All Rights Reserved.

Trademarks

CELLECTA is a registered trademark of Collecta, Inc.