



30-28596737

Confidential Quotation

Client:

Korey Kam

Mount Sinai Medical Center

ANBG 22 44

101 St. between Madison Ave and 5th Ave

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United States +1-2122415524

korey.kam@mssm.edu

Tracking Number: 30-28596737

Revision Number: R3

Quotation Effective Date: 09/28/2017 Quotation Expiration Date: 12/28/2017

Payment Term: Net 30 days Shipment: Prepaid and add

Contact:

GENEWIZ Project Management

PM@genewiz.com

877-GENEWIZ (436-3949)

+1-908-222-0711

GENEWIZ is pleased to offer you this custom quotation. As a leading global service partner, we are proud to help advance your research and development through our high quality results, stringent Quality system, expert Project Management, and flexible service options to save you time and resources.

I. Estimated Price and Turnaround Time

Estimated Price

	Service	Unit Cost	Quantity	Itemized Subtotal	Service Subtotal	
	Mini-scale DNA preparation	\$10.00	1	\$10.00		
1	Gene synthesis, 1.5-2 kb	\$0.35	1934	\$676.90		
	Custom cloning with synthesis, insert 0-3 kb	\$149.00	1	\$149.00	\$835.90	
	Maxi-scale DNA sample, bundled	\$95.00	1	\$95.00		
	Order Subtotal:					
	Shipping/Handling:					
Estimated Total for Project:					\$955.90	

Please review all sequences and the detailed service description, located in the Appendix.





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Estimated Turnaround Time

The estimated total turnaround time for this project is: 16-22 business days.

Turnaround time for synthesis of typical sequences (non-repetitive, non-toxic) is estimated at 8-10 business days for sequences under 1.5 kb, 10-12 business days up to 3 kb, and 15-25 business days for sequences up to 6 kb. Difficult template synthesis may vary widely depending on sequence complexity. Custom cloning and larger scale DNA preparations typically add 3-5 business days, each. Projects involving vectors larger than 10kb or unstable vectors may add an additional 5-10 business days to the project. Individual products within larger orders may complete at different times. Contact PMc@genewiz.com to request that split shipping be added to your order (additional charges apply).



Tracking/Order Number: 30-28596737



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II. To Accept This Quotation and Start Your Order

Please select one of the following options to initiate your order:

Online: To place your order online, login to your GENEWIZ Online Account (www.genewiz.com) and select the 'Add to Cart' button associated with this Tracking/Order Number. After the item has been added to the shopping cart, click on the 'Order' button and verify your shipping and billing information. Please make sure to click the final 'Submit Order' button to start your order.

Email: Email <u>PM@genewiz.com</u> to confirm and start your project. Please include your Tracking/Order Number and Purchase Order (PO) number or charging instructions.

Telephone: Call GENEWIZ Project Management at +1-908-222-0711 ext. 3 to confirm and start your project. Please be prepared to provide your Tracking/Order Number and Purchase Order (PO) number or charging instructions.

Fax: Please print this page, complete the Purchase Order (PO) number or charging instructions, sign, and fax to GENEWIZ Project Management at +1-908-333-4511. You may also email scanned forms to PM@genewiz.com.

Please submit all required starting material(s) to GENEWIZ as soon as possible after initiating your order, as applicable. For a list of the required starting material, please see the Starting Material Provided by Client section.

Name:	 Date:	
Signature:	 _	
D.O.		
PO: _		

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III. General Terms and Conditions

Where such an Agreement is in effect, the terms and conditions of separate, fully executed Agreements between GENEWIZ (hereinafter "GENEWIZ") and the customer are incorporated by reference into this quotation. Where conflicts exist, the terms and conditions of such an Agreement shall take precedence over the terms and conditions outlined below.

Price: The price for any product (hereinafter "Product") or service (herein after "Service") shall be the price stated in the GENEWIZ quotation. GENEWIZ quotations are valid for ninety (90) days unless otherwise stated in the quotation. Prices stated are exclusive of all taxes, fees, licenses, duties or levies and, unless otherwise stated in the quotation, transportation charges, freight and insurance. The attached quotation supersedes/cancels all previous quotations on the Products and Services stated in the quotation and the quotation number must be referenced on your purchase order.

Turnaround Time: Turnaround time is the estimated time required for order completion, starting from the receipt at GENEWIZ of all required starting material and ending when the final Product or Service result is released. Turnaround Time is defined in business days unless otherwise specified, and order changes, requests for additional information or material, and empirical results may alter the actual delivery date.

Shipping and Handling: Unless specifically quoted, shipping and handling charges will be prepaid and added to the invoice (PPD & Add). Wet Ice, Hazardous and Dry Ice packaging fees are prepaid and added to all invoices as appropriate.

Sales Tax: Applicable state sales tax will be added to your order. If you have tax exempt status, please forward a copy of your exemption certificate with your first order.

Bank Fees: Customers are responsible for payment of all bank charges or lifting fees applied to wire transfer payments. When initiating a wire transfer, please indicate that bank lifting fees will be paid by sender.

Cancellation: Any order change or cancellation after order confirmation may result in a partial or full charge. In the event of an incomplete or cancelled project, GENEWIZ may deliver and bill for Services and Products completed leading up to the order stop. **Payment Terms:** Payment terms are Net 30 days for customers with an established account. For all other customers, payment terms are as indicated on the attached quotation.

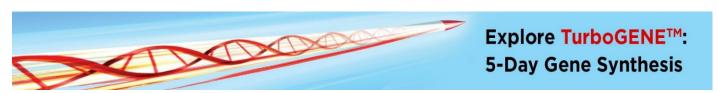
Confidentiality: GENEWIZ keeps client's Information with the same degree of care it holds its own confidential information, including written Information relating to the services, data; know-how; assay methods; technical and non-technical materials. GENEWIZ will not use the Information except for the services to be performed pursuant to the client's order. GENEWIZ will disclose the Information only to its officers, employees and affiliates directly concerned with the services, but will neither disclose the Information to any third party nor use the Information for any other purpose unless such materials: i. were known to GENEWIZ prior to the order, as evidenced by GENEWIZ's written records; ii. are or become generally available to the public through no fault of GENEWIZ; iii. are received by GENEWIZ in good faith from a third party, not in breach of an obligation of confidentiality; iv. are independently developed, discovered or arrived at by GENEWIZ without use of or reference to Confidential Information; or v. are disclosed, pursuant to a requirement of law.

Licensure: All customers providing starting materials, including but not limited to commercially available and other custom vectors, are required to have a valid license for each and every material. GENEWIZ shall not be liable for verifying valid licensure of starting materials, and operates under the assumption that all provided materials are properly licensed. GENEWIZ shall not be liable for use of any unlicensed materials.

Force Majeure: GENEWIZ shall not be liable for any delay or failure of performance, including without limitation, failure to deliver or failure to install, where such delay or failure arises or results from any cause beyond GENEWIZ's reasonable control, including, but not limited to, flood, unusually severe weather, earthquake or other act of nature, power loss, strike, boycott, or other labor disputes, embargo, governmental regulation, or an inability or delay in obtaining materials. In the event of any such delay or failure of performance, GENEWIZ shall have such additional time within which to perform its obligations hereunder as may be reasonably necessary under the circumstances.

Indemnification: GENEWIZ shall indemnify its client, employees, directors and officers for any claims for injuries to persons or damages which occur on GENEWIZ's premises or premises under the exclusive control of GENEWIZ. GENEWIZ's client shall defend, indemnify and hold harmless GENEWIZ, its employees, directors and officers, from and against any and all liability which it may incur, by reason of client's use of the results of the services hereunder.

Limitation of Liability: GENEWIZ's liability shall be limited to the price paid by you for the GENEWIZ products and services on the relevant sales transaction. Except as prohibited by law, in no event shall GENEWIZ be liable for any incidental or consequential amages or for lost profits, loss of data, or for any other claim, expense, liability or loss otherwise arising from any sale of products and services to you.







IV. Appendix

Starting Material Provided by Client

- 1. Valid Purchase Order (PO) number or charging instructions
- 2. Vector pAAV-EF1a-double floxed-hChR2 (bacteria stab culture).

Service Description

1. Standard synthesis of TauP301L-2A-eGFP, including added 5' (Nhel) and 3' (Ascl) sequences with sequence verification and custom cloning into pAAV-EF1a-double floxed-hChR2 (Ampicillin) via 5' Nhel and 3' Ascl by recombination; delivered as a maxi-scale DNA sample.

Notes:

1. The starting material pAAV-EF1a-double floxed-hChR2 (Addgene # 20298) will be provided as a bacteria stab culture. Upon receipt of the starting material, a mini-scale DNA of plasmid will need to be made.

To accept this Quotation, please see the To Accept this Quotation and Start Your Order section.

Sequence Analysis

5'Nhel highlighted in Yellow 3'Ascl highlighted in Cyan Tau P301L highlighted in Purple

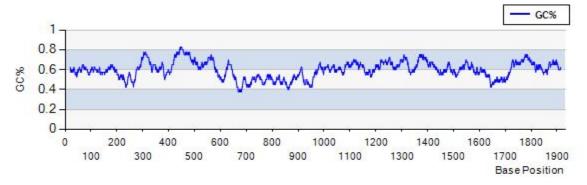
1. TauP301L-2A-eGFP: A 500 T 276 C 604 G 554 | GC%: 59.88% | Length: 1934

GC Content





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Direct Repeat

Len	Sequence	Sites
15	TCCAAGTGTGGCTCA	697, 790

Palindromic Sequences

Len	Sequence	Sites
12	GGTCACGTGACC	190

Client Vector Sequence

5'Nhel highlighted in Yellow 3'Ascl highlighted in Cyan

1. The reference sequence of pAAV-EF1a-double floxed-hChR2 (Ampicillin, 7256bp)

CATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAA $\tt CCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGT$ CGTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGAGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTTGGTCATGAGATTTATCAAAAAGGATCTTCACCTAGATCCTTTTAAAATTTAAAAATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTCGTTC ATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGC ATTGTTGCCGGGAAGCTAGAGTAAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTCACGCTCGTCGTT TGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAAGCGGTTAGCTCCTTCGGTCCTCCG ATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTTTT ACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAA CCCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAAATGCCGCAAAAAAAGGGAA TGAATGTATTTAGAAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAAACCATTATTATCATGACATTA CAATAGACCGAAATCGGCAAAATCCCTTATAAATCAAAAGAATAGCCCGAGATAGAGTTGAGTGTTGTTCCAGTTTTGGAACAAGAGTCCACTATTAA





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AGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCCGATGGCCCACTACGTGAACCATCACCCAAATCAAGTTTTTTTGGGGTCGAG $\tt CCCAGCAATTTGGGAGGCCAAGGTGGGTAGATCACCTGAGATTAGGAGTTGGAGACCAGCCTGGCCAATATGGTGAAACCCCGTCTCTACCAAAAAA$ ACAAAAATTAGCTGAGCCTGGTCATGCATGCCTGGAATCCCAACAACTCGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCAGGAGGCGGAGATTGC AGTGAGCCAAGATTGTGCCACTGCACTCCAGCTTGGTTCCCAATAGACCCCGCAGGCCCTACAGGTTGTCTTCCCAACTTGCCCCTTGCTCCATACC ACCCCCTCCACCCATAATATTATAGAAGGACACCTAGTCAGACAAAATGATGCAACTTAATTTTATTAGGACAAGGCTGGTGGGCACTGGAGTGG GGGCCGAAGGGACGTAGCAGAAGGACGTCCCGCGCAGAATCCAGGTGGCAACATAGGCGAGCAGCCAAGGAAAGGACGATGATTTCCCCGACAACAC AAAGTCCCGGAAAGGAGCTGACAGGTGGTGGCAATGCCCCAACCAGTGGGGGTTGCGTCAGCAAACACAGTGCACACCACGCCACGTTGCCTGACAA $\tt CGGGCCACAACTCCTCATAAAGAGACAGCAACCAGGATTTATACAAGGAGGAGAAAATGAAAGCCATACGGGAAGCAATAGCATGATACAAAGGCAT$ TAAAGCAGCGTATCCACATAGCGTAAAAGGAGCAACATAGTTAAGAATACCAGTCAATCTTTCACAAATTTTGTAATCCAGAGGTTGATTATCGATA AGCTTGATATCGAATTCATAACTTCGTATAGCATACATTATACGAAGTTATTCTTTGCACCATTCTAAAGAATAACAGTGATAATTTCTGGGTTAAG GCAAATAACTTCGTATAGGATACTTTATACGAAGTTAT<mark>GCTAGC</mark>CACCATGGACTATGGCGGCGCTTTGTCTGCCGTCGGACGCGAACTTTTGTTCG GACCGCGTCAAATGTCCTGCAGTGGCTTGCAGCAGGATTCAGCATTTTGCTGCTGATGTTCTATGCCTACCAAACCTGGAAATCTACATGCGGCTGG GAGGAGATCTATGTGTGCGCCATTGAAATGGTTAAGGTGATTCTCGAGTTCTTTTTTGAGTTTAAGAATCCCTCTATGCTCTACCTTGCCACAGGAC ${\tt ACCGGGTGCAGTGGCTGCGCTATGCAGAGTGGCTGCTCACTTGTCCTGTCATCCTTATCCGCCTGAGCAACCTCACCGGCCTGAGCAACGACTACAGGCCTGAGCAACGACTACAGGCCTGAGCAACGACTACAGGCCTGAGCAACGACTACAGGCCAGGCCTGAGCAACGACTACAGGCCAGGCCTGAGCAACGACTACAGGCCAGGCCTGAGCAACGACTACAGGCCAGGCCAGGCCAGGCCAGGCCTGAGCAACGACTACAGGCAGGCA$ CAGGAGAACCATGGGACTCCTTGTCTCAGACATCGGGACTATCGTGTGGGGGGCCTACCAGCGCCATGGCAACCGGCTATGTTAAAGTCATCTTCTTT TGTCTTGGATTGTGCTATGGCGCGAACACATTTTTTCACGCCGCCAAAGCATATATCGAGGGTTATCATACTGTGCCAAAGGGTCGGTGCCGCCAGG TGGCTCCACCGTAGGTCACACGATTATTGATCTGATGAGTAAAAATTGTTGGGGGGTTGTTGGGACACTACCTGCGCGTCCTGATCCACGAGCACATA TTGATTCACGGAGATATCCGCAAAACCACCAAACTGAACATCGGCGGAACGGAGATCGAGGTCGAGACTCTCGTCGAAGACGAAGCCGAGGCCGGAG ${\tt CAAGTTCAGCGTGTCCGGCGAGGGCGAGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCTGGCCTGGCCCTGGCCCTGGCCTGGCCTGGCCCTGGCCTGGCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCGCGCGCGCGCGCGCGCGCGCGCCTGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGGCCCTGCCCTGCCTGGCCCTGGCCCTGGCCCTGGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCCTGCCTGCCCCCTGCCCTGCCCTGCCTGCCCCTGCCCTGCCTGCCCTGCCC$ GACAAGCAGAAGAACGGCATCAAGGTGAACTTCAAGATCCGCCACAACATCGAGGACGGCGCGGCGTGCAGCTCGCCGACCACTACCAGCAGAACACCC $\verb|CCATCGGCGACGGCCCCGTGCTGCTGCCCGACAACCACTACCTGAGCTACCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGT|\\$ CGAAGTTATTAAGAGGTTTCATATTGCTAATAGCAGCTACAATCCAGCTACCATTCTGCATAACTTCGTATAAAGTATCCTATACGAAGTTATTCCG GAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAATGGAAGAAAAAAACTTTGAACCACTGTCTGAGGCTTGAGAATGAACCAAGATCCAA AAACCCCTCCCCCAACCTAAAGACGACGTACTCCAAAAGCTCGAGAACTAATCGAGGTGCCTGGACGGCGCCCGGTACTCCGTGGAGTCACATGAA GCACGGGCCCCGTCGCCGCCCGCGCCCCAAAAACCGAAATACCAGTGTGCAGATCTTGGCCCGCATTTACAAGACTATCTTGCCAGAAAAAAAGCG TCGCAGCAGGTCATCAAAAATTTTAAATGGCTAGAGACTTATCGAAAGCAGCGAGACAGGCGCGAAGGTGCCACCAGATTCGCACGCGGCGCCCCA

Final Construct Sequence

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CGTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCAGCCCGACCGCTGCGCCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGA GACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTT ${\tt TTAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTCGTTC}$ ATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGC ATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTCACGCTCGTCGTT TGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAAGCGGTTAGCTCCTTCGGTCCTCCG ATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTTTT ACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAA TGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTA ACCTATAAAAATAGGCGTATCACGAGGCCCTTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTCA AGAGCAGATTGTACTGAGAGTGCACCATAAAATTGTAAACGTTAATATTTTGTTAAAATTCGCGTTAAATTTTTGTTAAATCAGCTCATTTTTTAAAC CAATAGACCGAAAATCGGCAAAATCCCTTATAAATCAAAAGAATAGCCCGAGATAGAGTTGAGTGTTGTTCCAGTTTTGGAACAAGAGTCCACTATTAA AGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCCGATGGCCCACTACGTGAACCATCACCCAAATCAAGTTTTTTTGGGGTCGAG $\tt CCCAGCAATTTGGGAGGCCAAGGTGGGTAGATCACCTGAGATTAGGAGTTGGAGACCAGCCTGGCCAATATGGTGAAACCCCGTCTCTACCAAAAAA$ ACAAAAATTAGCTGAGCCTGGTCATGCCTGGAATCCCAACAACTCGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCAGGAGGCGGAGATTGC ACCCCCTCCACCCATAATATTATAGAAGGACACCTAGTCAGACAAAATGATGCAACTTAATTTTATTAGGACAAGGCTGGTGGGCACTGGAGTGG CGGGCCACAACTCCTCATAAAGAGACAGCAACCAGGATTTATACAAGGAGGAGAAAATGAAAGCCATACGGGAAGCAATAGCATGATACAAAGGCAT TAAAGCAGCGTATCCACATAGCGTAAAAGGAGCAACATAGTTAAGAATACCAGTCAATCTTTCACAAATTTTGTAATCCAGAGGTTGATTATCGATA AGCTTGATATCGAATTCATAACTTCGTATAGCATACATTATACGAAGTTATTCTTTGCACCATTCTAAAGAATAACAGTGATAATTTCTGGGTTAAG GCAAATAACTTCGTATAGGATACTTTATACGAAGTTAT<mark>GCTAGC</mark>A<u>TGGCTGAGCCCCGCCAGGAGTTCGAAGTGATGGAAGATCACGCTGGGACGTA</u> $\underline{\textbf{CGGGTTGGGGGACAGGAAAGATCAGGGGGGCTACACCATGCACCAAGACCAAGAGGTGACACGGACGCTGGCCTGAAAGCTGAAGAGCAGGCATT}$ GGAGACACCCCCAGCCTGGAAGACGAAGCTGCTGGTCACGTGACCCAAGCTCGCATGGTCAGTAAAAGCAAAGACGGGACTGGAAGCGATGACAAAA AAGCCAAGGGGGCTGATGGTAAAACGAAGATCGCCACACCGCGGGGAGCACCCTCCAGGCCAGAAGGGCCAGGCCAACGCCACCAGGATTCCAGC AAAAACCCCGCCCGCTCCAAAGACACCACCCAGCTCTGGTGAACCTCCAAAATCAGGGGATCGCAGCGGCTACAGCAGCCCCGGCTCCCCAGGCACT $\tt CCGCCAAGAGCCGCCTGCAGACAGCCCCCGTGCCCATGCCAGACCTGAAGAATGTCAAGTCCAAGATCGGCTCCACTGAGAACCTGAAGCCCAGCC$ AAATAAAAAGATTGAAACCCACAAGCTGACCTTCCGCGAGAACGCCAAAGCCAAGACCACGGGGCGGAGATCGTGTACAAGTCGCCAGTGGTG $\underline{\textbf{TCTGGGGACACGTCTCCACGGCATCTCAGCAATGTCTCCTCCACCGGCAGCATCGACATGGTAGACTCGCCCCAGCTCGCCAC}} \underline{\textbf{GCTAGC}} \underline{\textbf{TGACGAGG}} \underline{\textbf{TGACGAGG}} \underline{\textbf{GCTAGC}} \underline{\textbf{TGACGAGG}} \underline{\textbf{GCTAGC}} \underline{\textbf{GCTAGC}$ TGTCTGCCTCCCTGGCCAAGCAGGGTTTGGAGGGCAGAGGAAGTCTGCTAACATGCGGTGACGTCGAGGAGAATCCTGGCCCAGTGAGCAAGGGCGA <u>ACCTACGGCAAGCTGACCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCTGGCCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGT</u> GCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTCAAGTCCGCCATGCCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAAGGA <u>CGACGGCAACTACAAGACCCGCGCGCGAGGTGAAGTTCGAGGGCGACACCCTGGTGAACCGCATCGAGCTGAAGGGCATCGACTTCAAGGAGGACGGC</u> <u>AACATCCTGGGGCACAAGCTGGAGTACAACTACAACAGCCACAACGTCTATATCATGGCCGACAAGCAGAAGAACGCCATCAAGGTGAACTTCAAGA</u>





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 ${\tt AATCCAGCTACCATTCTGCATAACTTCGTATA} {\tt AAGTATCCTATACGAAGTTATTCCGGAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAGTTATCCGAGAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAGTTATCCGAGAGTTATCCGAGAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAGTTATCCGAGAGTTATCCGAGAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAGTTATCCGAGAGTTATCCGAGAGTCGACTCTAGAGGATCCGACTCTAGAGGATCCGACACCTGAAGTTATCCGAAGTTATCCGAAGTTATCCGAGAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAAGTTATCCGAAGTTATTCCGAGAGTCGACTCTAGAGGATCCGGTACCTCACGACACCTGAAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATCCGAAGTTATTCCGAAGTTATCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTATTCCGAAGTTCTATACGAAGTTATTCTATTCTA$ ATGGAAGAAAAAACTTTGAACCACTGTCTGAGGCTTGAGAATGAACCAAGATCCAAAACTCAAAAAGGGCAAATTCCAAGGAGAATTACATCAAGTG GTGACTCACCCGCCCGCTCTCCCGAGCGCCCCCCCTTTTTGAGCTCCCTGCAGCAGGGCCGGGAAGCGGCCATCTTTCCGCTCACGCAACTGG TGCCGACCGGGCCAGCCTTGCCGCCCAGGGCGGGGCGATACACGGCGGCGGCGAGGCCAGGCACCAGAGCAGCCGGCCAGCTTGAGACTACCCCCGT ${\tt CCGATTCTCGGTGGCCGCGCTCGCAGGCCCCGCCTCGCCGAACATGTGCGCTGGGACGCCCCGTCGCCGCCCCCGCGGCCCCAAAAACCGAAA$ ATCGAAAGCAGCGAGACAGGCGCGAAGGTGCCACCAGATTCGCACGCGGCGCCCCAGGCCCAGGCCAGGCCTCAACTCAAGCACGAGGCGAAGGG GCTCCTTAAGCGCAAGGCCTCGAACTCTCCCACCCACTTCCAACCCGAAGCTCGGGATCAAGAATCACGTACTGCAGCCAGGTGGAAGTAATTCAAG GCACGCAAGGGCCATAACCCGTAAAGAGGCCAGGCCCGCGGGAACCACACACGGCACTTACCTGTGTTCTGGCGGCAAACCCGTTGCGAAAAAGAAC GTTCACGGCGACTACTGCACTTATATACGGTTCTCCCCCACCCTCGGGAAAAAGGCGGAGCCAGTACACGACATCACTTTCCCAGTTTACCCCGCGC CACCTTCTCTAGGCACCGGTTCAATTGCCGACCCCTCCCCCCAACTTCTCGGGGACTGTGGGCGATGTGCGCTCTGCCCACTGACGGGCACCGGAGC GCCTCAGTGAGCGAGCGAGCGCGCAGCTGCCTGCAGGA