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4242 bp

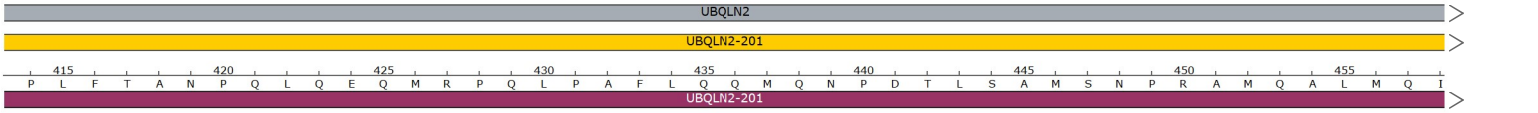


Sanger Sequencing Primer  
AGCCATGTCAAACCAAGAG

PCR Forward  
AGATGCAGAATCCAGACACACTATC

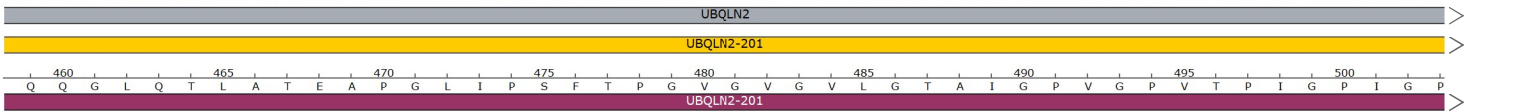
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GGG C G A C A A A T G A C G T T T A G G A G T C G A C G T C C T C G T C T A C G C C G G T G T C G A G G G T C G G A A G A G C T C G T C T A C G T C T T A G G T C T G T G A T A G T C G G T A C A G T T T G G G T T C T G T T A C G T C C G A A A T T A C G T C T A

1620



CC A G C A G G G G C T A C A G A C A T T A G C C A C T G A A G C A C C T G G C C T G A T T C C G A G C T T C A C T C C A G G T G T G G G G G T G G G G G T G C T G G G A A C C G C T A T A G G C C C T G T A G G C C C A G T C A C C C C C A T A G G C C C A T A G G C C C  
G G T C G T C C C C G A T G T C T G T A A T C G G T G A C T T C G T G G A C C G G A C T A A G G C T C G A A G T G A G G T C C A C A C C C C A C C C C C A C G A C C C T T G G C G A T A T C C G G G A C A T C C G G G T C A G T G G G G G T A T C C G G G T A T C C G G G

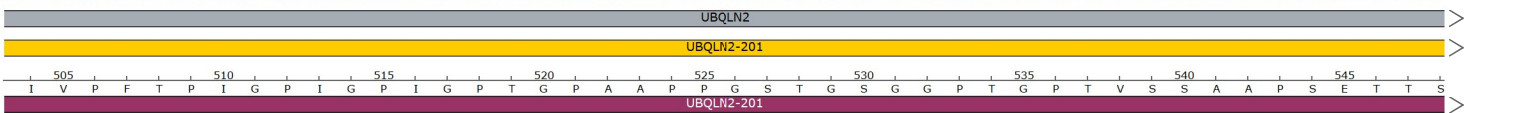
1755



Donor Template SNV -> REV  
CGGGTCAGTGGGGTATCCGGGTATCCGGG  
Donor Template SNV -> REV

T A T A G T C C C T T T T A C C C C C A T A G G C C C A T T G G G C C C A T A G G A C C C A C T G G C C C T G C A G C C C C C C T G G C T C A C C G G C T C T G G T G G C C C A C G G G C C T A C T G T G T C C A G C G C T G C A C C T A G T G A A A C C A C G A G  
A T A T C A G G A A A A T G G G G T A T C C G G G T A A C C G G G T A T C C T G G G T G A C C G G A C G T C G G G G G G A C C G A G G T G G C C G A G A C C A C C G G G T G C C C C G G A T G A C A C A G G T C G G A C G T G G A T C A C T T T G G T G C T C

1890

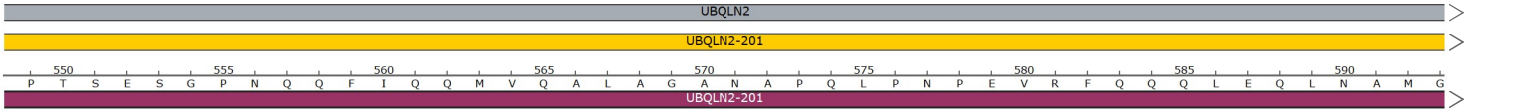


ATATCAGGGAAAATGGGGTATCCGGGTAACCCGGGATCTCTGGGTGACCGGGACGTCGGGGGGACG  
TATCAGGAAAATGGGGT  
SNV  
Donor Template SNV -> REV

gRNA Protospacer  
TATCAGGAAAATGGGGT

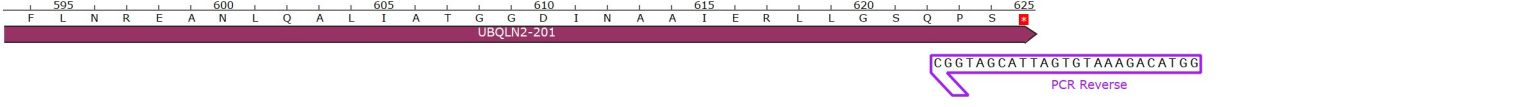
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A G G A T G T A G T C T T A G A C C T G G G T T G G T C G T C A A G T A A G T C G T T A C C A C G T C C G G A C C G A C C T C G T T T A C G A G G T G T C G A C G G C T T A G G T C T C A G T C T A A A G T C G T T G T G A C C T T G T C G A G T T G C G T T A C C C

2025



G T T C T T A A A C C G T G A A G C A A A C T T G C A G G C C T A A T A G C A A C A G G A G G C A C A T C A A T G C A G C A T T G A A A G G C T G C T G G G C C C A G C C A T C G T A A T C A C A T T T C T G T A C C T G G A A A A A A A T G T A T C T T A T T  
C A A G A A T T T G G C A C T T C G T T T G A A C G T C C G G A T T A T C G T T G C T C C G C T G T A G T T A C G T C G G T A A C T T T C G A C G A C C C G A G G G T C G G T A G C A T T A G T G T A A A G A C A T G G A C C T T T T T T T A C A T A G A A T A A A

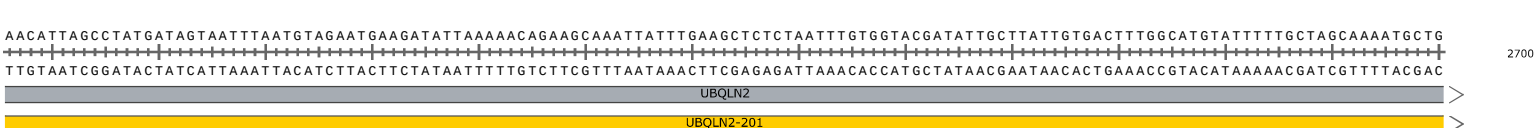
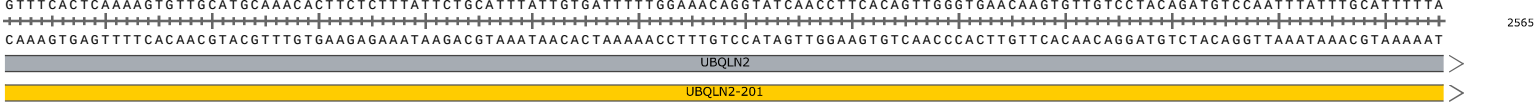
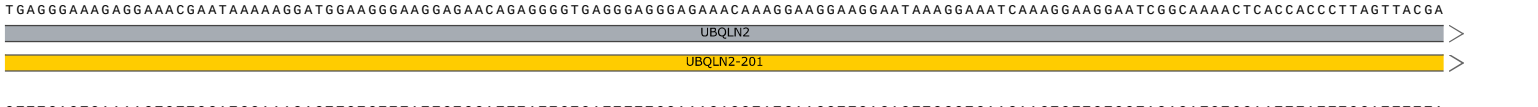
2160



PCR Reverse  
CGGTAGCATTAGTGTAAAGCATGG

T T G A A T A G G C T C T T A A A T C T T T A A C A C A C A C A A A A T C G T T C T T A C T T T T G A T T C T T T A A A T C T G T C T A G T T G T A A G T C T A A T A T G A T G C A T T T T A A G A T G G A G T C C C T C C C T A C T T C C C T C  
A A C T A T T A C C G A G A A T T A G A A T T T G T G T G T T T T A G C A A G A A T G A A G T A A A C T A A G A A A T T T A G A C A G A T C A A C A T T C A G A T T A C T A C G T A A A A T T C A C T C A G G G A G G A T G A A G G A G

2295



TAAGATTTATACCATTGATCTTTTTGCTATATTTGTATACAGTACAGTAAAGCAAAATGGCACTGTACACTTAAAAATTTACAGTAGAATCTGAGTGTAAATGTGTAAACAAAATGAGAAAAGAAACAAGAA  
ATTCTAAATATGGTAACTAGAAAAACGATATAAACATATGTCATGTCATTCTGTTAACCGTGACATGTAGATTTTATAATGTCATCTTAGACTCACATTATACACATTGGTTTTACTCTTTCTTATGTTCTT

2835

UBQLN2

UBQLN2-201

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2970

UBQLN2

UBQLN2-201

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3105

UBQLN2

UBQLN2-201

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3240

UBQLN2

UBQLN2-201

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3375

UBQLN2

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TGGGGCTCTAATATATTTAGAAATAGGATATAAAGAGATTGAATATACAAAAATAAATCTTTTACAAAACAGGACAGACCTTAATAAGAATACATACCTAAATCCATAAGATTGAAAAACGGGGTTTCCCAATCG

3510

UBQLN2

UBQLN2-201

CAGTTGTTAACATATTTACCTTTTCCCCCAACATATGAAATGTCATACATGTATATACTTTATTTCTGTGTTGGATTCCCTTTAGTTCATTGAACATTGTGGCACCAGTACACCAGCCTGTAGATGAGTTAGAA  
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3645

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TACCCTGAAACATAGAAAATTAACCTCTGGAGGAGAACTAGAAAAATAAAAAATGTTATAAGACTGCTAAGACTGTACAAATAAAATGGTCTACTTAAATGTCAATTATCTAAGAGGGGGTTTTATATAAC

3780

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3915

UBQLN2

UBQLN2-201

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4050

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4185

UBQLN2

UBQLN2-201

GACTGCATGGGTTAAACATTTTCATAACAGTGCTAAATAATAAAGGTGGCAGTGGCA  
CTGACGTACCCAATTTGTAAGAGTATTGTACAGATTTATTTTCCACCGTCACCGT

3' 4242  
5'

UBQLN2

UBQLN2-201

Feature	Location	Size	Color	Symbol	Type
✓ <b>UBQLN2</b>	1 .. 4242	4242 bp	grey	→	gene
/note	= gene <a href="#">ENSG00000188021</a> Protein coding				
✓ <b>UBQLN2-201</b>	1 .. 4242	4242 bp	yellow	→	prim_transcript
/note	= primary transcript <a href="#">ENST00000338222</a>				
✓ <b>UBQLN2-201</b>	248 .. 2122	1875 bp	purple	→	CDS
/note	= coding sequence <a href="#">ENSP00000345195</a>				
/translation	= MA ENGESSGPPRPSRGPAAAQGSAAA PAEPKIIKVTVKTPKEKEFAVPENSSVQQFKEAISKRFKSQTDQLVLIFAGKILKDDTLIQHGIHDGLTVHLVIKSQNRPQGQSTQPSNAA GTNTTSASTPRSNSTPISTNSNPF GLGSLGGLA GLSSLGLSSTNFSELQSQMQQLMA SPEMMIQIMENPFVQSMLSNPDLMRQLIMANPQMQQLIQRNPEISHLLNNDIMRQTL EIA RNPA MMQEMMRNQDLALSNLESIPGGYNALRRMYTDIQEPMLNAA QE QFGGNPFASVGSSSSGEGTQPSRTENRDLPNPWA PPPATQSSATSTTTSTGSGSGNSSNATGNTVAAAANYVASIFSTPGMQSLLQ QITENPQLIQNMLSA PYMRSM MQSLSQNPDLAAQ MMLNSPLFTA NPQLQ EQMRPQLPAFLQQM QNPDLSA MSNPRAMQALMQIQQLQLTLATEAPGLIPSFPGVGVGLGTAIGPVGVPVTPIGPIGPV PFTPIGPIGPVIGTGPAA PPGSTGSGGPTGPTVSSAAPSETTSPTSESGPNQQFIQQMV QZLAAHAAEQSPNRSVTRDQQLLEQLNAMGFLNREANLQAL IATGGDINAAIERLLGSGQPS*				
✓ <b>Donor Template SNV -&gt; REV</b>	1725 .. 1824	100 bp	teal	⊢	misc_feature
✓ <b>PAM</b>	1754 .. 1756	3 bp	yellow	⊢	misc_feature
✓ <b>Protospacer Sequence</b>	1757 .. 1776	20 bp	red	⊢	misc_feature
✓ <b>SNV</b>	1763 .. 1763	1 bp	orange	⊢	misc_feature
/note	= REV = C SNV = A				

Primer	Length	Binding Sites	Tm	Date Added
✓ <b>PCR Forward</b> /sequence = AGATGCAGAATCCAGACACACTATC 44% GC / 7628.0 Da	25-mer	1554 .. 1578	58°C	Jun 30, 2022
✓ <b>Sanger Sequencing Primer</b> /sequence = AGCCATGTCAAACCCAAGAG 50% GC / 6104.0 Da	20-mer	1579 .. 1598	57°C	Jun 30, 2022
✓ <b>Donor Template SNV -&gt; REV</b> /sequence = CCAGGGGGGGCTGCAGGGCCAGTGGGTCTATGGGCCAATGGGGCTATGGGGTAAAAAGGGACTATAGGGCCTATGGGGCTATGGGGTACTGGGC 66% GC / 31,361.3 Da	100-mer	1725 .. 1824	84°C	Jun 30, 2022
✓ <b>gRNA Protospacer</b> /sequence = ATGGGGTAAAAAGTACTAT 40% GC / 6245.2 Da	20-mer	1757 .. 1776	44°C	Jun 30, 2022
✓ <b>PCR Reverse</b> /sequence = GGTACAGAAATGTGATTACGATGGC 44% GC / 7770.1 Da	25-mer	2113 .. 2137	58°C	Jun 30, 2022