

5'
3'

CACATGTGAACATTAGGATGGGTATATCTTATACAGTAGAATAAGGAAGAGGTTTGCATCAGAAGTCCCCTTTAAAAAATGCA
GTGTACACTTGTAATCCTACCCATATAGAATATGTCATCTTATTCTTCTCCAAACGTAGTCTTGAGGGGAAAAATTTTTTTACGT

85

LRRK2

LRRK2-201

GATTTTCACTATGACTGCAATAAAATTCCTGAAGATTCTGTGGAGTAATTAAGTTGAAACTCCATGAAAGTTCTTCTCATTAGCA
CTAAAAGTGATACTGACGTTATTTTAAGGACTTCTAAGACACCTCATTAATTCAACTTTGAGGTACTTTCAAGAAGAGTAATCGT

170

LRRK2

LRRK2-201

TAGTTATAAATATGATAATTTAAGTAAAAATTAAGTTAATTTGAGCCACTCAAAGTTACTTTTTAAAGACAGATTTAAATGTCAA
ATCAATATTTATACTATTAATTCATTTTTAATTCATTAATAACTCGGTGAGTTTCAATGAAAATTTCTGTCTAAATTTTACAGTT

255

LRRK2

LRRK2-201

TAAAATGATAATTTAAATTTCCGATTAACCTAAAAAAGAAGTGCCATCATTTTTATTTATGCCAATAAATTGAAATATAATGTCA
ATTTTACTATTAATTTAAAGGCTAATTGGATTTTTCTTCACGGTAGTAAAAATAAATACGGTTATTTAACTTTATATTACAGT

340

LRRK2

LRRK2-201

TTTTATCACTAAGGTTTAAAGGAAATGAAATCTCTAAATAATCAAGTGAAACCAAGAGCAACTTGTCTGACAGCTATTAGCAAAA
AAAATAGTGATTCCAAATTTCTTTACTTTAGAGATTTATTAGTTCACCTTTGGTTCTCGTTGAACAGACTGTCGATAATCGTTTT

425

LRRK2

LRRK2-201

ATAAATAGGAGTATTCACCTTCATGAATCAAGGCAAGGGCCGGAATAATTTTCATGGTGCAGAAGCTCTAATGAGCCCACCCACTC
TATTTATCCTCATAAGTGGAAGTACTTAGTTCGGTCCCGGCCCTTATTAAGTACCACGTCTTCGAGATTACTCGGGTGGGTGAG

510

LRRK2

LRRK2-201

TATGCGCCCCGAGCTGTTAGGTCCTAACTTATTAATAAAGGTACCATTAAGGCAGGGAGAAGTTTACAAGACTCATTAACT
ATACGCGGGGCTCGACAATCCAGTGATTTGAATAATTTTTTCCATGGTAATTCCGTCCCTCTTCAAATGTTCTGAGTAAATTGA

595

LRRK2

LRRK2-201

GTATGATAAAAAGAGATATGAAAGAGACCTATTCAATTAATCAGGTGGAACATTAATAAAGCTTACATGGCAATTTAACCTTGATAA
CATACTATTTTCTCTATACTTTCTCTGGATAAGTTAATTAGTCCACCTTGTAATTTTTCGAATGTACCGTTAAATTGGAACATT

680

LRRK2

LRRK2-201

AAATACATGGGAGAAATACAAAGGAATTTGGAAAATCTCTTTCTTGAATAAGGCATCAGTTAGCTATTCAGGTTATGAGGTTG
TTTATGTACCCTCTTTATGTTTCTTAAACCTTTTAAGAGAAAAGGAACCTTATTCCGTAGTCAATCGATAAGTCCAATACTCCAAC

765

LRRK2

LRRK2-201

AAGGAATGTTAGGAGCTCTTTTAAAGGTGATAAAGTCAAGATAATGTTGCAGATTTTATTCTTATGTAACAAACCCCTCGAAAC
TTCCTTACAATCCTCGAGAAAATTTCCACTATTTTCAAGTTCTATTACAACGTCTAAAATAAGAATACATTGTTTGGGGGAGCTTTG

850

LRRK2

LRRK2-201

TTGGAGGCTTAAAAATGTGAACAATTTATCATTCTCTCGTTCTTCTGTGGCTTGACTGGGCTCAGCTGCGTGGTTCTGCTCCACATG
AACCTCCGAATTTTACACTTGTTAAATAGTAAAGAGCAAGAAGACACCGAACTGACCCGAGTCGACGCACCAAGACGAGGTGTAC

935

LRRK2

LRRK2-201

GTATTGGCAAGGGTTATTCACCTTGGCTTCATTCATTAAACTGAGCTGGAAAGTGAAGAAAGGTACATGCATGTTTTTGGAGTAT
CATAACCGTTCCCAATAAGTGAACCGAAGTAAGTAATTTGACTCGACCTTTCACGTTCTTCCATGTACGTACAAAAACCTCATA

1020

LRRK2

LRRK2-201

TGGTGCTTCTCCATGTGGCCTATCATATGGCTAAGTTGGGCTTCTCTCGTGGCACCAGGTGATCACAGAATAATTAGACATCTTTCAT
ACCACGAAGAGGTACACCGGATAGTATACCGATTCAACCCGAAGGAGCACCGTGCCACTAGTGTCTTATTAATCTGTAGAAAGTA

1105

LRRK2

LRRK2-201

GGTGGCTGGTTACCAAGAGAAATGAAGCAGATTTTTTCTGTCTCTTAAAGGCTAGGCCAAGGACTGGCAAAAAATATTAATTCTG
CCACCGACCAATGGTTCTCTTTACTTTCGTCTAAAAAAGACAGGAGAATTTCCGATCCGGTTCCTGACCGTTTTTATAATTAAGAC

1190

LRRK2

LRRK2-201

CTACATTCTAGTAACCAGAGCAACCACAAACCTAGCTCAGATTAAGGGGAAGGAAAAGAGACTCTATATGAATAGCACCTATGT
GATGTAAGATCATTGGTCTCGTTGGTGTGGGATCGAGTCTAATTTCCCTTCTCTTCTGAGATATACTTATCGTGGATACA

1275

LRRK2

LRRK2-201

ATAGGGATGGAAATGATGTGTCCATCTTTGGAACTTCCACTATAAATAGTGGTAGCACGCTATAGATCCACTAGGAAAATCAAG
TATCCCTACCTTTACTACACAGGTAGAAAACCTTTGAAGGTGATATTTATCACCATCGTGCGATATCTAGGTGATCCTTTTAGTTC

1360

LRRK2

LRRK2-201

CACAAACTCTTTAAAAAATAAGTGTATCTTAGTAAAATAGATTAGAATAACTAGATAATAATGGCTAACATACATGAGGTTAATA
GTGTTTGAGAAATTTTTTATTACATAGAATCATTATCTAATCTTATTGATCTATTATTACCGATTGTATGTAATCCTCAATTAT

1445

LRRK2

LRRK2-201

TGTGCTTTTCAAAGATTAGCTCATGTAATTTCTCACAGCAACCTTTCAAATGGTACTTTATTAGCCCCTATGATACAGATGAAGA
ACACGAAAAGTTTCTAATCGAGTACATTAAGAGTGTGCTTGGAAAGGTTTACCATGAAATAATCGGGGATACTATGTCTACTTCT

1530

LRRK2

LRRK2-201

AATTGATTGACAGAGAGGTTGAATAATTTATCCAACGGTACACATTCAGGAAGAGGTAGAGTTAGAATTTCAAACCAAGTAGTTT
TTAACTAACTGTCTCTCCAACCTTATTAATAGGTTGCCATGTGTAAGTCTTCTCCATCTCAATCTTAAAGTTTGGTTCATCAAA

1615

LRRK2

LRRK2-201

GACTCCAGGGCCTATGAGTTTATACATTCATAGGGCTGATATTTCAAATGAGAGAAGAGAAGTAATAAATAAACATATAATATGTT
CTGAGGTCCCGGATACTCAAATATGTAAGTATCCCGACTATAAGTTTACTCTTCTCTTCTTCTTATTATTTGTATATTATACAA

1700

LRRK2

LRRK2-201

GAGTGGTACAGAGTGCTACAAAGAAAAATATGAAGTGCAGTTGGAGATGAATTGTCAAAAAAGGTCTTAGCACTTAAAAAACACTA
CTCACCATGTCTCACGATGTTTCTTTTATACTTCACGTCAACCTCTACTTAACAGTTTTTTTCCAGAATCGTGAATTTTTTGTGAT

1785

LRRK2

LRRK2-201

AAACAGCAAACAATTCTCTTTACCACCTAAACTGTAAGAGCGATCTGGAATTGCTATAAAGTACACAACATGGGAGAAGTCTTAA
TTTGTGCGTTTGTAAAGAGAAATGGTGGATTTGACATTCTCGCTAGACCTTAACGATATTTTCATGTGTTGTACCCTCTTCAGAATT

1870

LRRK2

LRRK2-201

ACAACAGTTTTTATTATTTATAGGCCCATTTGCACACTGTCATTAAATACCAATATGTTCAATCAACCATGCATTCATTGATTCAA
TGTTGTCAAAAAATAATAAATATCCGGGTAACGTGTGACAGTAATTTATGTTTATACAAGTTAGTTGGTACGTAAGTAACTAAGTT

1955

LRRK2

LRRK2-201

TAAATACTGTACATACAAAAATAGAAATACAGAAATGGGTAAGACAAGTCCTTGGGCCTAAGGACTTTATAACCTGGTATTTCACT
ATTTATGACATGTATGTTTTATCTTTATGTCTTTACCCATTCTGTTTCAGGAACCCGGATTCTGAAATATTGGACCATAAAGTGA

2040

LRRK2

LRRK2-201

CAACTACATGATAGCATAAATAATGTTTGCTTCTGTTTAAGTATTCCTTAAACATTATAGATCTCCCAAAGAAAAATTAATACAA
GTTGATGTACTATCGTATTTATTACAAACGAAGACAAATTCATAAGGAATTTGTAATATCTAGAGGGTCTTTTTAATTTATGTT

2125

LRRK2

LRRK2-201

ACCTCTTTTTAAAGTGAATTTGACAAAGCAAAATAAATTGGAATATATAGATAAATATGCTAAAAATTTGTCATATGTACTTTGCG
TGGAGAAAAATTTCACTTAAACTGTTTCGTTTTATTTAACCTTATATATCTATTTATACGATTTTAAACAGTATACATGAAACGC

2210

LRRK2

LRRK2-201

TACTTTACATGTGTTATTTTATTCTCAGGGCAATCTAAGACAGTCACTTTTTATTATCTCATTATATAGAGAAGAAAGCTGTGCAG
ATGAAATGTACACAATAAAGTAAGAGTCCCGTTAGATTCTGTGTCAGTGAAAAATAATAGAGTAAAAATATCTCTTTTCGACACGTC

2295

LRRK2

LRRK2-201

TAAAGAAATCAAATACCTTTCCCAAGGTTACAGAGCTAGTAGTAGAGCCTGGATTTGAATCTGGGTTCTGACTGATTTTTAACTG
ATTTCTTTAGTTTATGGAAGGGTTCCAATGTCTCGATCATCATCTCGGACCTAAACTTAGACCCAAGACTGACTAAAAATTGAC

2380

LRRK2

LRRK2-201

CCATGACAAGGATCAAAGCTCAAAGTGTGATCTCTGTGTTAGAAACATCGGGGTTGCTCTTTAAAAAAGCCGATTCTCAGGCCTC
GGTACTGTTCTAGTTTTCGAGTTTCACACTAGAGACACAATCTTTGTAGCCCCAACGAGAAATTTTTTTCGGCTAAGAGTCCGGAG

2465

LRRK2

LRRK2-201

AACCCAGACCTACTGACCCAGACACTGCAAGTAGAATCCATCAAATGCAGTAGTTACTTTGAGAATCATGAAACTCTGCTACAC
TTGGGTCTGGATGACTGGGTCTGTGACGTTTCATCTTAGGTAGTTTTACGTCATCAATGAAACTCTTAGTACTTTGAGACGATGTG

2550

LRRK2

LRRK2-201

AGTCTGTCTTCCTATTCATGGGAAGTCCTCTCCTAGTATATAAAATGTGAAGTAATATTTCTATTTCAAACCTGTATTGATAACTGT
TCAGACAGAAGGATAAGTACCTTCAGGAGAGGATCATATATTTTACACTTCATTATAAAGATAAAGTTTGGACATAACTATTGACA

2635

LRRK2

LRRK2-201

CTGGAAGATAATTTTCCTGGGAATATATTATTGATGAGACTGCAAAACAGATGTGAGGTATTGGATTGATCTTTCCATTGTAGCT
GACCTTCTATTAAGGACCTTATATAAATACTACTCTGACGTTTTGTCTACACTCCATAACCTAACTAGAAAAGGTAACATCGA

2720

LRRK2

LRRK2-201

AGGGAAATACTGATGTTTCATTGTTTCAGTGAAGTTC AATGATTTTCTATCCGAATTAAC TCCCTTAATTTAACAAATTTTTTTTTT
TCCCTTTATGACTACAAGTAACAAAGTCACTTCAAGTTACTAAAGGATAGGCTTAATTGAGGGAATTAATTGTTAAAAA

2805

LRRK2

LRRK2-201

TTTTTTGAGAGTGAATGCCCTCTGGGCTTCTAGGCCACATGGTTGCTAGAGAAATTAGGTA CTGTGTTGCACTTGAAAACTA
AAAAACTCTCACTTACGGGGAGACCCGAAGATCCGGTGTACCAACGATCTCTTTAATCCATGACACAACGTGAAC TTTTGTGAT

2890

LRRK2

LRRK2-201

AAATCTTTCTGACTACTTTCACTGAGCAAAGAGACATAAAATGCTTTAAATTTGCAACATTT CAGAAAAATAAATTTTAGTGATTA
TTTAGAAAGACTGATGAAAGTGACTCGTTTTCTCTGTATTTTACGAAATTTAAACGTTGTAAAGTCTTTTATTTAAATCACTAAT

2975

LRRK2

LRRK2-201

TTTATGACTCGAATCTTTT CAGATTTTGACAGTGAAAGTGGAAAGTTGTCCAAAACACCTAAGGGCATTATTTTCGCGTAGAGATG
AAATACTGAGCTTAGAAAAGTCTAAAACGTCACTTTTACCTTCCAACAGGTTTTGTGGGATTCCCGTAATAAAGCGCATCTCTAC

3060

LRRK2

LRRK2-201

1610 I L T V K V E G C P K H P K G I I S R R D 1630
ENSE00003521951
LRRK2-201

TGGAAAAATTTCTTTCAAAAAAAGGAAATTTCCAAAAGAACTACATGTCACAGTATTTTAAAGTCTCTAGAAAAATTCAGATTGC
ACCTTTTTAAAGAAAGTTTTTTTTTCTTTAAAGGTTTTCTTGATGTACAGTGTCAATAAATTCGAGGATCTTTTTAAGGTCTAACG

3145

LRRK2

LRRK2-201

V E K F L S K K R K F P K N Y M S Q Y F K L L E K F Q I A
ENSE00003521951
LRRK2-201

TTTGCCAATAGGAGAAGAATATTTGCTGGTTCCAAGCAGGTAAGAAAACCTTAAAAAATTAATTGCTACATGGAAATTC ACTAT
AAACGGTTATCCTCTTCTTATAAACGACCAAGGTTTCGTCCATTTCTTTTGAATTTTTTAATTAACGATGTACCTTTAAGTGATA

3230

LRRK2

LRRK2-201

1660 L P I G E E Y L L V P S S 1670
ENSE00003521951
LRRK2-201

CTATTCTTTTAATTGTCAAACCTAACTGCTAGTCTATAATAGATGTATTAATAAAATAAATATATTTTTGCTTCTAGTGTAACCTCC
GATAAGAAAATTAACAGTTTGATTGACATCAGATATTATCTACATAATTTATTTTATTTATATAAAACGAAGATCACATTTGGAGG

3315

LRRK2

LRRK2-201

LRRK2-201

TACTGACATGTATCATTATTTTTGGAATAAACATTGCATCTGACACTTTAACAATATAGTAAATCACTTACTTTATGTGTATAG
ATGACTGTACATAGTAAATAAACCTTATTTTGTAAACGTAGACTGTGAAATTGTTATATCATTTAGTGAATGAAATACACATATC

3400

LRRK2

LRRK2-201

LRRK2-201

TTACTAGTTGGCTTATCACTGTTGAAATTATTTAAGAAAGGTAAATAGTGGAGATTAATGTGTGTGTGTGTCTGTGTTTTGTGTAT
AATGATCAACCGAATAGTGACAACCTTAATAAATTCTTTCCATTTATCACCTCTAATTACACACACACACAGACACAAACACATA

3485

LRRK2

LRRK2-201

LRRK2-201

GTGTGTGTTCTTAAACAACACTGAGAGAGTTTATTAAGCAAGTTCTGAGAAGATAGTGAGTTTTCAACAGAATTTTAAAAGCATT
CACACACAAGAATTTGTTGTGACTCTCTCAAATAATTCGTTCAAGACTCTTCTATCACTCAAAAGTTGTCTTAAAATTTTCGTAA

3570

LRRK2

LRRK2-201

LRRK2-201

TATGGCATCACAATGGATGCCTATGTTTTAGCCTATACTATGGAAATTTTCCTACTGCTCTAAGCAACTGGGAAATTTATAAAG
ATACCGTAGTGTTACCTACGGATACAAAATCGGATATGATACCTTTAAAAAGGATGACGAGATTGTTGACCTTTAAATATTTTC

3655

LRRK2

LRRK2-201

LRRK2-201

TAATATGATGTTGAAATGTGCAAATTACATTGATTGATGGATGCAGCCAATTTTAAAAATAAATATACACTTTTTTTCTAGGACA
ATTATACTACAACCTTTACACGTTTAATGTAACCTAACTACCTACGTCGGTTAAAATTTTTATTTATATGTGAAAAAAGATCCTGT

3740

LRRK2

LRRK2-201

LRRK2-201

TGTATTTTTTCAGGATTTATATAAGATTACATTTGTCTATGCATAACTAATTGTAATAATTTATGTATTAGTGACACAGGGATTACC
ACATAAAAAGTCCTAAATATATTCTAATGTAACAGATACGTATTGATTAACATTATTTAAATACATAATCACGTGTCCCTAATGG

3825

LRRK2

LRRK2-201

LRRK2-201

PCR Forward
TTTTTCCTACTGCTCTAAGCAACTG

GAAAAATATTTTCATGCATCTACATCTGAGCATGCATTTGAATTGGTTATTGACCACTGAATTTTTGGTGTAGGAAAAATATGTAGT
CTTTTATAAAGTACGTAGATGTAGACTCGTACGTAAACTTAACCAATAACTGGTGACTTAAAAACCACATCCTTTTTTATACATCA

3910

LRRK2

LRRK2-201

LRRK2-201

GAAACAATGTTACAAAAAGATTACAATTGTTTGGGAATGATTACCTTCATTGACTTTAAGCAGTAAATCATTGCTCAACAAGGT
CTTTGTTACAATGTTTTCTAATGTTAACAAACCTTACTAATGGAAGTAACTGAAATTCGTCATTTTAGTAAACGAGTTGTTCCA

3995

LRRK2

LRRK2-201

LRRK2-201

Donor Template SNV -> REV

CTGTGATAGAGCTTCCCCATT

TGGGTGTTTTGTGAGGCTGTATAACCATAGTGTCTCTTTTGCCTTTAGTTTGTCTGACCACAGGCCTGTGATAGAGCTTCCCCATT
ACCCACAAAACACTCCGACATATTGGTATCACAGGAAAACGGAATCAAACAGACTGGTGTCCGGACACTATCTCGAAGGGGTAA

4080

LRRK2

LRRK2-201

1675 1680
L S D H R P V I E L P H

ENSE00003579735

LRRK2-201

Donor Template SNV -> REV

Donor Template SNV -> REV

GTGAGAACTCTGAAATTATCATCCGACTATATGAAATGCCTTATTTTCCAATGGGATTTTGGTCAAGATTAATCAATCG
GTGAGAACTCTGAAATTATCATCCGACTATATGAAATGCCTTATTTTCCAATGGGATTTTGGTCAAGATTAATCAATCGATTACT
CACTCTTGAGACTTTAATAGTAGGCTGATATACTTTACGGAATAAAAGGTTACCCTAAAACAGTTCTAATTAGTTAGCTAATGA

4165

LRRK2

LRRK2-201

1685 1690 1695 1700 1705 1710
C E N S E I I I R L Y E M P Y F P M G F W S R L I N R L L

ENSE00003579735

LRRK2-201

Donor Template SNV -> REV

gRNA Protospacer

PAM

SNV

AAAAGGTTACCCTAAAAC

gRNA Protospacer

TGAGATTTACCTTACATGCTTTTCAGGGAGAGGTAAGTATCTAATGAAGACTTATTAGATTTTTAGAGACTATTAATTTAGACTT
ACTCTAAAAGTGGAAATGTACGAAAAGTCCCTCTCCATTATAGACTTCTCTGAATAATCTAAAAATCTCTGATAATTAATCTGAA

4250

LRRK2

LRRK2-201

1715 1720
E I S P Y M L S G R

ENSE00003579735

LRRK2-201

ATTAATTTTTAGAGAAATTAGGGAGATGGCATATGAAAAGTAATATGCCATTTTCTCAGAGTTTACTTGTGGAAAGGCAGCTGA
TAATTAATAAATCTCTTTAATCCCTCTACCGTATACTTTTTATTATACGGTAAAAGAGTCTCAAATGAACAAACCTTCCGTCGACT

4335

LRRK2

LRRK2-201

LRRK2-201

GAACAAACCTTCCGTCGACT
Sanger Sequencing Primer

AGAATTAGAAAATAAGCTCATAAAACCTTGGAGTAGGCAATCTAAAGACACACAAGCACATATAACCTCATCTAATTTGTCAGGA
TCTTAATCTTTTATTTCGAGTATTTTGGAACTCATCCGTTAGATTTCTGTGTGTTTCGTGTATATTGGAGTAGATTAAACAGTCCT

4420

LRRK2

LRRK2-201

LRRK2-201

AGAAAATTCCTTAGGTGCTCACTCAGATCTTGACTGTGATTACATTGTAGGGACTGTAATTATCTCTTTTTCTGTTGCACAGCCAC
TCTTTTAAGGAATCCACGAGTGAGTCTAGAACTGACACTAATGTAACATCCCTGACATTAATAGAGAAAAGACAACGTGTCGGTG

4505

LRRK2

LRRK2-201

LRRK2-201

TAAGACATTTACAAAAAAGAGCAAATCCGGTGTTTATAATGCTAACTCTTTCTTCTAAAAATAAATAGAGACATTTTGGTACTCC
ATTCTGTAATGTTTTTTCTCGTTTAGGCCACAAATATTACGATTGAGAAAGAAGATTTTATTTATCTCTGTAACCATGAGG

4590

LRRK2

LRRK2-201

LRRK2-201

CTCGTTTAGGCCACAAATATTACGA
PCR Reverse

AAAGGGAAAATATCATTTTGGGGATTAAAATTAGCTTTACACAGGTGTTACTGGTTTCCAAAATAAACCTTACCTTGATTGGAAT
TTTCCCTTTTATAGTAAAACCCCTAATTTAATCGAAATGTGTCCACAATGACCAAAGGTTTTATTTGGAATGGAACCTAACCTTA

4675

LRRK2

LRRK2-201

LRRK2-201

TAATCAACATATAGGTAGTTACATTGCATTA AAAAGTTTCAGAAAGTTTTGCGTTTAGCATGATCAAAAACCTTCTTTTTAAAAATT
ATTAGTTGTATATCCATCAATGTAACGTAATTTTCAAGTCTTTCAAACGCAAAATCGTACTAGTTTTTGAAGAAAAATTTTTAA

4760

LRRK2

LRRK2-201

LRRK2-201

ATGAGGATTTATTTATGATTTTCTTTCTTCATCTGTCGAGCATATTA AACTGCTTAACAGCATCAACCTGAAATGGATCTTAATG
TACTCCTAAATAAATACTAAAAGAAAGAAGTAGACAGCTCGTATAATTTGACGAATTGTCGTAGTTGGACTTTACCTAGAATTAC

4845

LRRK2

LRRK2-201

LRRK2-201

TGCAGGGGATTTAACTCTTTTTATTGTAAAGTTGTGGATAAAAATATTTAATAGATATGGATGAGGACTCATATCAGTAACAACCC
ACGTCCCCTAAATTGAGAAAAATAACATTTCAACACCTATTTTTATAAATTATCTATACCTACTCCTGAGTATAGTCATTGTTGGG

4930

LRRK2

LRRK2-201

LRRK2-201

AATACTTTATTTCAAATGAATAGATCTGTATTACAATCACTTGTGTTGTGTGCAGTAGATTTTTTCCCTTTAACTTAGGAAGCA
TTATGAAATAAAGTTTTACTTATCTAGACATAATGTTAGTGAACACAACACACGTCATCTAAAAAAGGGAAATTGAATCCTTCGT

5015

LRRK2

LRRK2-201

LRRK2-201

GTTAATAATTAATGGCTCCATTTTTTGAACGAGCACTTCGCCCAAACAGAATGTATTGGCGACAAGGCATTTACTTAAATTGGT
CAATTATTAATTACCGAGGTAATAAATCTTGCTCGTGAAGCGGGTTTGTCTTACATAACCGCTGTTCCGTAAATGAATTTAACCA

5100

LRRK2

LRRK2-201

E R A L R P N R M Y W R Q G I Y L N W
ENSE00003635411

LRRK2-201

CTCCTGAAGCTTATTGTCTGGTAGGATCTGAAGTCTTAGACAATCATCCAGAGAGTTTCTTAAAAATTACAGTTCCTTCTTGTAG
GAGGACTTCGAATAACAGACCATCCTAGACTTCAGAATCTGTTAGTAGGTCTCTCAAAGAATTTTTAATGTCAAGGAAGAACATC

5185

LRRK2

LRRK2-201

S P E A Y C L V G S E V L D N H P E S F L K I T V P S C R
ENSE00003635411

LRRK2-201

AAAAGGTAAGGAAATCAATTTGAATGTTTTCAATTGCAACACTAAAGAAATTTAACTTAAAAAAAAAAAAAAAAAACTTTACCTTAAA
TTTTCCATTCTTTAGTTAAACTTACAAAAGTTAACGTTGTGATTTCTTTAAATTTGAATTTTTTTTTTTTTTTTGAATGGAATTT

5270

LRRK2

LRRK2-201

K
ENSE...

LRRK2-201

GCTTTGCGACAGTATGAGGTTTAGACAAGGTGTTGAGCTCTGTTTTGAATCATGTAGGCTGTATTCTTTTGGGCCAAGTTGTGGA
CGAAACGCTGTCATACTCCAAATCTGTTCCACAACCTCGAGACAAAACCTTAGTACATCCGACATAAGAAAACCCGGTTCAACACCT

5355

LRRK2

LRRK2-201

G C I L L G Q V V D
ENSE00003568150

LRRK2-201

CCACATTGATTCTCTCATGGAAGAATGGTTTTCTGGGTTGCTGGAGATTGATATTTGTGGTGAAGGAGAAAACCTCTGTTGAAGAAA
GGTGTAACCTAAGAGAGTACCTTCTTACCAAAGGACCCAACGACCTCTAACTATAAACACCACTTCTCTTTGAGACAACCTTCTTT

5440

LRRK2

LRRK2-201

H I D S L M E W F P G L L E I D I C G E G T L L K K
ENSE00003568150

LRRK2-201

TGGGCATTATATAGTTTTAATGATGGTGAAGAACATCAAAAAATCTTACTTGATGACTTGATGAAGAAAGCAGAGGAAGGTATGT
ACCCGTAATATATCAAAAATTACTACCACCTTCTTGTAGTTTTTTAGAAATGAACTACTGAACTACTTCTTTTCGTCTCCTTCCATACA

5525

LRRK2

LRRK2-201

W A L Y S F N D G E E H Q K I L L D D L M K K A E E

ENSE00003568150

LRRK2-201

TTTGATACAACCTTACAAATGCTTTTTAAGTGATCCTTCAATACTTATGAAGTGACTTTTTAATAAATGTAAATATTCTTATCCATAA
AAACTATGTTGAATGTTTACGAAAATTCCTAGGAAGTTATGAATACTTCACTGAAAATTATTTACATTTATAAGAATAGGTATT

5610

LRRK2

LRRK2-201

LRRK2-201

GGGATGAGTTGAAAAATAGTATATTCAATTATAGGGACAGTTCAGAAAACCTGAATTATATTTATTACCAATAAAAATCTTGTATTC
CCCTACTCAACTTTTTATCATATAAGTTAATATCCCTGTCAAGTCTTTTTGACTTAATATAAATAATGGTTATTTTTAGAACATAAG

5695

LRRK2

LRRK2-201

LRRK2-201

TAGATTCAGAAAATGTTGATTTGAGGGTTTGAATGCTGGCTTATTGAGCAACATAACCTCATCTGTGAAACCGGAATACCAACCA
ATCTAAGTCTTTTTACAACATAAACTCCCAAACCTTACGACCGAATAACTCGTTGTATTGGAGTAGACACTTTGGCCTTATGGTTGGT

5780

LRRK2

LRRK2-201

LRRK2-201

CATCTATCTCATAGAAGTGTATAAAGATTCAAATAGACAATACATGGACCTAATTTACCAACATGTCTGCCATATAATAACAGC
GTAGATAGAGTATCTTGACAATATTTCTAAGTTTATCTGTTATGTACCTGGATTAAATGGTTGTACAGACGGTATATTATTGTCG

5865

LRRK2

LRRK2-201

LRRK2-201

TGCAGCTTCATGAATGTGGCAAAAGCAGAGAGTAGATAACTTTCTAGTCAGATGTCTGGTAGTCTGCAGCAGTTCAGAATTCTAC
ACGTCGAAGTACTTACACCGTTTTTCGTCTCTCATCTATTGAAAGATCAGTCTACAGACCATCAGACGTCGTCAAGTCTTAAGATG

5950

LRRK2

LRRK2-201

LRRK2-201

AAGTGAACGTAGGAATAAGTTTTTAAAATTTCCAAGTAGATAGATACTAAGTGAATCTTTAAAATGTTCTCAAATTTCTTAGAGAA
TTCACTTGCATCCTTATTCAAAAATTTTAAAGTTTCATCTATCTATGATTCACCTTAGAAAATTTTACAAGAGTTTTAAAGGATCTCTT

6035

LRRK2

LRRK2-201

LRRK2-201

ATATAGGATTGGTTAGAAAAGGGAGGGATTAGAAATTATAGAAAATATTCCATTATTTTTTTCACATCAAAAACCACAAATTTATGTA
TATATCCTAACCAATCTTTCCCTCCCTAATCTTTAATATCTTTTATAAGGTAATAAAAAAGTGTAGTTTTGGTGTTTAAATACAT

6120

LRRK2

LRRK2-201

LRRK2-201

TCTCCTTAAATGTTGTTTTTATTTAAAAAATGTTTTATTACTTCTCAGGAGATCTCTTAGTAAATCCAGATCAACCAAGGCTCAC
AGAGGAATTTACAACAAAAATAAATTTTTTACAAAATAATGAAGAGTCCTCTAGAGAATCATTTAGGTCTAGTTGGTTCCGAGTG

6205

LRRK2

LRRK2-201

G D L L V N P D Q P R L T
ENSE00003468154

LRRK2-201

CATTCCAATATCTCAGATTGCCCTGACTTGATTTTTGGCTGACCTGCCTAGAAATATTATGTTGAATAATGATGAGTTGGAATTT
GTAAGGTTATAGAGTCTAACGGGGACTGAACTAAAACCGACTGGACGGATCTTTATAATACAACCTTATTACTACTCAACCTTAAA

6290

LRRK2

LRRK2-201

I P I S Q I A P D L I L A D L P R N I M L N N D E L E F
ENSE00003468154

LRRK2-201

GAACAAGCTCCAGAGTTTCTCCTAGGTAATTCTTTTTGTTAATTTGAGAATAAAAAATTAGGATGTAATTTTTCTCCTTATAATTTA
CTTGTTTCGAGGTCTCAAAGAGGATCCATTAAGAAAAACAATTAACCTCTTATTTTTAATCCTACATTAAGAGGAATATTAAT

6375

LRRK2

LRRK2-201

E Q A P E F L L G N S F C
ENSE00003468154

LRRK2-201

GAAAATAGATTTTCATAATTATATTGTCATAGATTTTACTGTCTTCATATATTTGTTATAATTTTTGTATTTGGAATGATATATTT
CTTTTATCTAAAGTATTAATATAACAGTATCTAAAATGACAGAAGTATATAAACAATATTA AAAACATAAACCTTACTATATAAA

6460

LRRK2

LRRK2-201

TAAAGGAATATAATATTACAGATCTGGAATTTGTTTTGCACATAATCATGTAGACTAGGATCAAGATGAGGATGAGATTATCATG
ATTTCTTATATTATAATGTCTAGACCTTAAACAAAACGTGTATTAGTACATCTGATCCTAGTTCTACTCTACTCTAATAGTAC

6545

LRRK2

LRRK2-201

GAAGCAGAAATATTTATGAAATATATCTTTGTATTTGCCTTAATTGCCAGGGATATGGGAGGCCAAATAAGACAGTTTTTCAGGTGA
CTTCGTCTTTATAAACTTTATATAGAAACATAAACGGAATTAACGGTCCCTATACCCTCCGTTTATTCTGTCAAAAAGTCCACT

6630

LRRK2

LRRK2-201

GTAAAGTGAAGCAGCCATATTTTATAAAAATGACAGAATAGGTAAAGGAAGCACACCTCAGTGTAGCCATAGCAGGGGTTTTATGA
CAATTCACTTCGTCGGTATAAAAATTTTTACTGTCTTATCCATTTCTTCGTGTGGAGTACATCGGTATCGTCCCCAAAATACT

6715

LRRK2

LRRK2-201

CTCAGTGTGACAATGCTGAATTCTCATAGAAATATTCATTAAGCCTTGAAATTAAGTCAAAAAGTGTACATGGTGACATACT
GAGTCACACTGTTACGACTTAAGAGTATCTTTATAAGTAATTTTCGGAACCTTAATTTTCAGTTTTTACAATGTACCACTGTATGA

6800

LRRK2

LRRK2-201

CAAATACTTTTTTTTTTTTTTTTTGATATGCTGAACAATTTACATTTCTTGGTTCCGTGAATTCATCAGTGATTTTTCAGTAGAGT
GTTTATGAAAAAAAAAAAAAAAAAACTATACGACTTGTAAATGTAAAGAACCAAGGCACCTAAGTTAGTCACTAAAAAGTCATCTCA

6885

LRRK2

LRRK2-201

ATGATGGAAATCATTGAATTCATGTAGCATGTTTAGGTGCTCATTGAGAAAAGGTGAAGTCATGGTAACCATGTTTCAATATTCT
TACTACCTTTAGTAACTTAAGTACATCGTACAAATCCACGAGTAACCTTTTTCCACTTCAGTACCATTGGTACAAAAGTTATAAGA

6970

LRRK2

LRRK2-201

CATTTGTATCTTGACTTCCTGCACATGGATTTTTGGGCCTAAAAGATGTTTTTAAAACATGCTCATACTTCAGAAGATGAAAA
GTAAACATAGAAGTGAAGGACGTGTACCTAAAAACCCGGATTTCTACAAAAATTTGTACGAGTATGTGAAGTCTTCTACTTTTT

7055

LRRK2

LRRK2-201

GTGTATGCATTATAACTACTTTGGGAAAGAAACAGTCAACATATGTTACTGTATGTCATTCTGTAGATTACATGTGTGGTTTCTC
CACATACGTAATATTGATGAAACCTTTCTTTGTCAGTTGTATACAATGACATACAGTAAGACATCTAATGTACACACCAAAGAG

7140

LRRK2

LRRK2-201

ATGTCTCTCAGAATAAAAGCTAATGTCTTTACAAGACCTGCGATGCTGTGATCTGTCTGGCTCCTCGGTTATCATTTTTAAAAA
TACAGAGAGTCTTATTTTCGATTACAGAAATGTTCTGGACGCTACGACACTAGACAGACCGAGGAGCCAATAGTAAAAATTTTTT

7225

LRRK2

LRRK2-201

AGATATACTTTGTACAAATTTTTTAATTGACAAGTAAAAATTGTATATATTTATGGTGTACAACATGATGTTTTGATATATGTA
TCTATATGAAACATGTTTTAAAAAAATTAAGTCTTTTAAACATATATAAATACCACATGTTGTACTACAAAACATATATACAT

7310

LRRK2

LRRK2-201

TATGTTGTGGAATGGAGAAGTTTTAGCTATTTAACATATACATTATCTCAAATATTTATGTGGTGAGAAGTATTAATCTACTCT
ATACAACACCTTACCTCTTCAAATCGATAAATTGTATATGTAATAGAGTTTATAAATACACCACTCTTGATAATTTTAGATGAGA

7395

LRRK2

LRRK2-201

CATAGCAATTTACAAGTATACAGTATGTTATTATTAAGTGTAGGCTGACATACTCAAGTTTTAAACATTCCTGAGAGTCATTGGG
GTATCGTTAAATGTTTCATATGTCATACAATAATAATTGACATCCGACTGTATGAGTTCAAATTTGTAAGGACTCTCAGTAACCC

7480

LRRK2

LRRK2-201

ACAACATGAAATGCATTAGATTGATTTAATATAAAGCATTTGAAGACAATTTGACCTTACTTTGTTTGTAGTTTTGTTGTTGTT
TGTTGATACTTTACGTAATCTAACTAAATTATTTTCGTAAACTTCTGTTAAACTGGAATGAAACAAATCAAAAAACAACAACAA

7565

LRRK2

LRRK2-201

GTGTGTATACATTTAATTTTAAATCAAATTACCCAGAAATAATGCCTAAGATCTGTTCAGTCAGGACATAATATTATTAGCAAAAA
CACACATATGTAAATTTAAATTTAGTTTAAATGGGGTCTTTATTACGGATTCTAGACAGTCAGTCCTGTATTATAATAATCGTTTTT

7650

LRRK2

LRRK2-201

GTTGTCCAAAATTTGAGACATGATATTTAAAGCTAAATAAACTCCTTTATACCCCTCTTATTGGCATTGATTGGGAAGTTTAGGT
CAACAGGTTTTAAACTCTGTACTATAAAATTTGATTTATTTGAGGAAATATGGGGAGAATAACCGTAACTAACCTTCAAATCCA

7735

LRRK2

LRRK2-201

TGAATTTAAATGCTTTGGAAGTCAGGAAGTTAATGTATTAGTAATAGTGGGTAAACATAAAATGCTGAATTGTCTTGCTGAATC
ACTTAAATTTACGAAACCTTGAGTCCTTCAATTACATAATCATTATCACCAATTGTATTTTACGACTTAACAGGAACGACTTAG

7820

LRRK2

LRRK2-201

CTACATCTTAACCCAGACTTCAAGGTATACAGGAAAGTACCAGACATGGTGCATCCTTCTCTGAAGAAATCCCAAACGTTCAG
GATGTAGAATTGGGGTCTGAAGTTCATATGTCCTTTTCATGGTCTGTACCACGTAGGAAGGAGACTTCTTTAGGGTTTGACAGTC

7905

LRRK2

LRRK2-201

ACACAGATCCCTAAAATATTTCTTTTTCTGCATTAAAATGTGTTTCAGATGAATGGACACGTTTTGAGTAGTGTATGTGGAAAC
TGTGTCTAGGGATTTTATAAAGAAAAAGGACGTAATTTTACACAAAGTCTACTTACCTGTGCAAAACTCATCACATACACCTTTG

7990

LRRK2

LRRK2-201

GTCATTTACAAAGTCTGTTTAGTTGGCCAGGTGTAGTAGCTCACTCCTGTAATCCCAGCACTTTGGGAGGCCGAGGTGGGTGTAT
CAGTAAATGTTTCAGACAAATCAACCGGTCCACATCATCGAGTGAGGACATTAGGGTCTGTGAAACCTCCGGCTCCACCCACATA

8075

LRRK2

LRRK2-201

CACGAGGTCAGGAGTTGAAGACCAGCCTGACCAAGATGGTGAAACCTCATCTCTACTAAAAATACAAAAAATTAAGTGGGTGTG
GTGCTCCAGTCCTCAACTTCTGGTCCGACTGGTTCTACCACTTTGGAGTAGAGATGATTTTTATGTTTTTTAATTGACCCACAC

8160

LRRK2

LRRK2-201

GTGGTGGGCATCTGTAATCTCAGCTACTCGGGAGGCTGAGGCAGAGAATTGCTTGAACCTGGGAGGCCGAGGTTGCAAGTGAGCCG
CACCACCCGTAGACATTAGAGTCGATGAGCCCTCCGACTCCGTCTCTTAACGAACCTGGACCTCCGCTCCAACGTCACTCGGC

8245

LRRK2

LRRK2-201

AGGTTGTGCCACTGCACTCCAGCCTAGGCGACAGAGCGTCTCAAAACAAAAACAAAAACAAAAAAGCAAAGTCTGTTTAG
TCCAACACGGTGACGTGAGGTCGGATCCGCTGTCTCGCAGAGTTTTGTTTTGTTTTGTTTTTTGTTTTTTTTCGTTTCAGACAAATC

8330

LRRK2

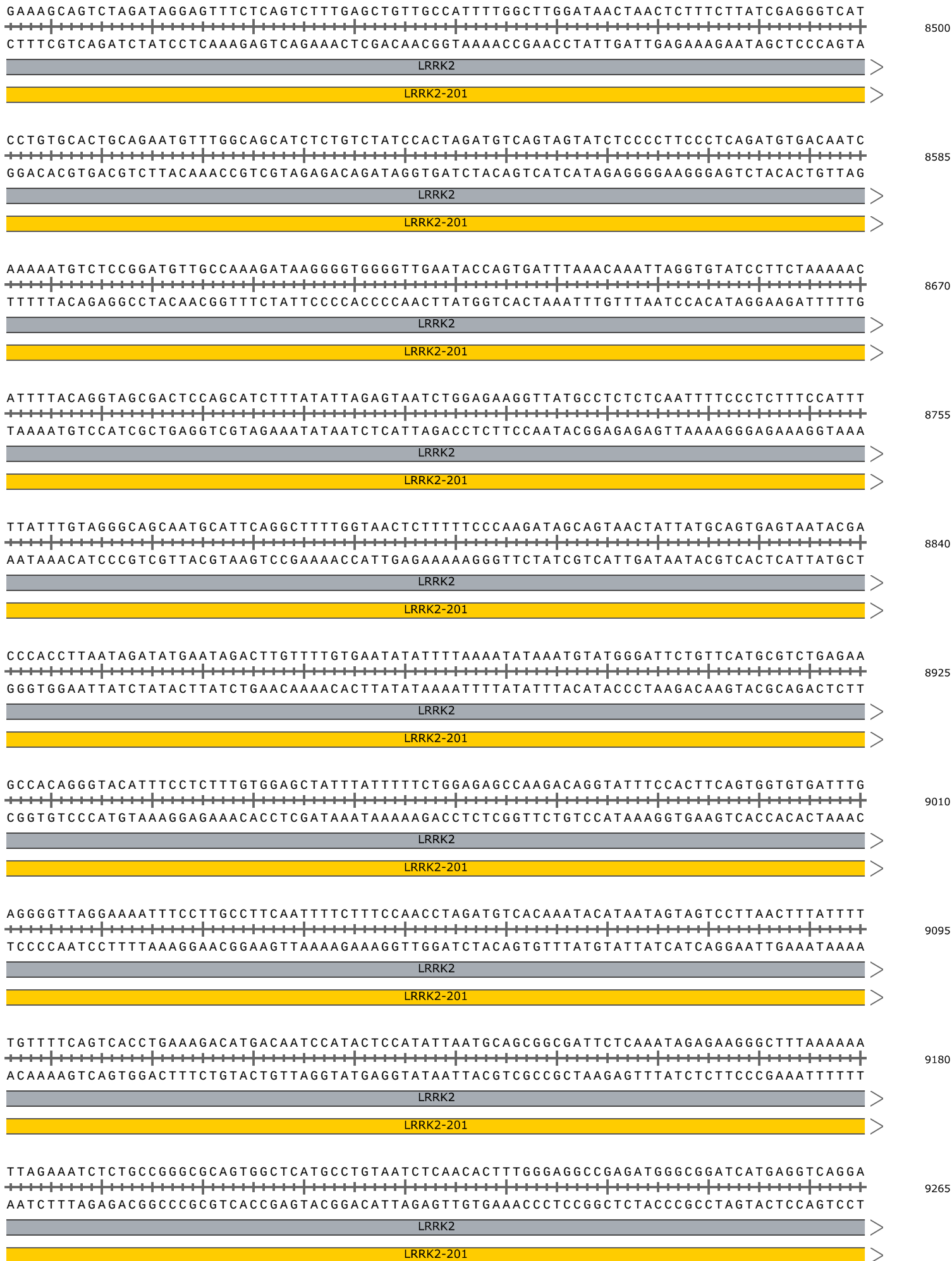
LRRK2-201

CTACCCATATAGGAAAATGTTTGTGATTACTCTCCCTTCTCTAGACCCATGTCCCATAAATCCATAAATCCCATGTTTCATTTACA
GATGGGTATATCCTTTTACAAACACTAATGAGAGGGAAGAGATCTGGGTACAGGGTATTTAGGTATTTAGGGTACAAGTAAATGT

8415

LRRK2

LRRK2-201



GATCGAGACCATCCTGGCTAACACGGTGAAACCCCATCTCTACTAAAAATACAAAAAATTAGCCAGGC GTGGTGGTGTGGGCGGC
CTAGCTCTGGTAGGACCGATTGTGCCACTTTGGGGTAGAGATGATTTTTTATGTTTTTTAATCGGTCCGCACCACCACACCCGCCG























LRRK2







LRRK2-201

TGTAGTCC 3'
+-----+ | 9358
ACATCAGG 5'

LRRK2

LRRK2-201

Feature	Location	Size			Type
LINC02471	1 .. 9358	9358 bp			gene
/note	= gene ENSG00000223914 lncRNA				
✓ LRRK2	1 .. 9358	9358 bp			gene
/note	= gene ENSG00000188906 Protein coding				
LINC02471-202	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000641941 lncRNA				
✓ LRRK2-201	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000298910				
LRRK2-204	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000430804 Nonsense mediated decay				
LRRK2-206	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000479187 Retained intron				
LRRK2-210	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000679360 Nonsense mediated decay				
LRRK2-211	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000679532 Nonsense mediated decay				
LRRK2-213	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000680018 Nonsense mediated decay				
LRRK2-215	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000680422 Nonsense mediated decay				
LRRK2-216	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000680425 Nonsense mediated decay				
LRRK2-217	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000680453 Nonsense mediated decay				
LRRK2-218	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000680790				
LRRK2-219	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000681136 protein_coding_CDS_not_defined				
LRRK2-220	1 .. 9358	9358 bp			prim_transcript
/note	= primary transcript ENST00000681696				
LRRK2-207	1 .. 3071	3071 bp			prim_transcript
/note	= primary transcript ENST00000481256 protein_coding_CDS_not_defined				
✓ LRRK2-201	2997 .. 6315	3319 bp			CDS
▶ 5 segments = 829 bp					
/note	= coding sequence ENSP00000298910				
/translation	= ILTVKVEGCPKHPKGIISRRDVEKFLSKRKFPPKNYMSQYFKLLEKFQIALPIGEEYLLVPSS,,LSDHRPVIELPHCENSEIIRLYEMPYPFMGF WSRLINRLLLEISPYMLSGR,,ERALRPNRMWRQGIYLNWSPEAYCLVGSEVLDNHPESFLKITYPSCRK,,GCILLGQVVDHIDSLMEEWFPGLL EIDICGEGETLLKKWALYSFNDGEEHQKILLDDLMKKAEE,,GDLLVNPDPRLTIPISQIAPDLILADLPRNIMLNNDLEFEQAPEFLL 276 amino acids = 32.1 kDa				

Feature	Location	Size		Type
LRRK2-218	2997 .. 6315	3319 bp	 →	CDS
▶ 5 segments = 829 bp				
/note	= coding sequence ENSP00000505335			
/translation	= ILTVKVEGCPKHPKGIISRRDVEKFLSKKRKFPKNYMSQYFKLLEKFQIALPIGEEYLLVPSS,,LSDHRPVIELPHCENSEIIIRLYEMPYPFMGF WSRLINRLLLEISPYMLSGR,,ERALRPNRMYWRQGIYLNWSPEAYCLVGSEVLDNHPESFLKITVPSCRK,,GCILLGQVVDHIDSLMEEWFPGLL EIDICGEGETLLKKWALYSFNDGEEHQKILLDDLKKAEE,,GDLLVNPDQPRLTIPISQIAPDLILADLPRNIMLNNDLEFEQAPEFLL 276 amino acids = 32.1 kDa			
LRRK2-220	2997 .. 6315	3319 bp	 →	CDS
▶ 5 segments = 829 bp				
/note	= coding sequence ENSP00000505871			
/translation	= ILTVKVEGCPKHPKGIISRRDVEKFLSKKRKFPKNYMSQYFKLLEKFQIALPIGEEYLLVPSS,,LSDHRPVIELPHCENSEIIIRLYEMPYPFMGF WSRLINRLLLEISPYMLSGR,,ERALRPNRMYWRQGIYLNWSPEAYCLVGSEVLDNHPESFLKITVPSCRK,,GCILLGQVVDHIDSLMEEWFPGLL EIDICGEGETLLKKWALYSFNDGEEHQKILLDDLKKAEE,,GDLLVNPDQPRLTIPISQIAPDLILADLPRNIMLNNDLEFEQAPEFLL 276 amino acids = 32.1 kDa			
✓ Donor Template SNV -> REV	4060 .. 4159	100 bp	 H	misc_feature
✓ PAM	4119 .. 4121	3 bp	 H	misc_feature
✓ gRNA Protospacer	4122 .. 4141	20 bp	 H	misc_feature
✓ SNV	4123 .. 4123	1 bp	 H	misc_feature
/note	= SNV = G REV = A			

Primer	Length	Binding Sites	Tm	Date Added
✓ PCR Forward	25-mer	3617 .. 3641	57°C	Oct 30, 2023
/sequence = TTTTCCTACTGCTCTAAGCAACTG 40% GC / 7558.0 Da				
✓ Donor Template SNV -> REV	100-mer	4060 .. 4159	71°C	Oct 30, 2023
/sequence = CTGTGATAGAGCTTCCCCATTGTGAGAACTCTGAAATTATCATCCGACTATATGAAATGCCTTATTTTCCAATGGGATTTTGGTCAAGA 37% GC / 8078.1 Da				
✓ gRNA Protospacer	20-mer	4124 .. 4141	47°C	Oct 30, 2023
/sequence = CAAAATCCCATTGGAAAACA 35% GC / 6087.1 Da				
✓ Sanger Sequencing Primer	20-mer	4316 .. 4335	58°C	Oct 30, 2023
/sequence = TCAGCTGCCTTCCAAACAAG 50% GC / 6046.0 Da				
✓ PCR Reverse	25-mer	4525 .. 4549	58°C	Oct 30, 2023
/sequence = AGCATTATAAACACCGGATTTGCTC 40% GC / 7625.0 Da				