

Fig. S1. Naïve LUHMES cells express endogenous LRRK2. (A) Proliferating (d0) naïve LUHMES cells were lysed and different amounts of total protein lysate (5, 10, 15 and 50 µg) were loaded on the gel. Endogenous LRRK2 protein is visible by WB analysis of naïve LUHMES cell lysates when the total protein loaded is about 50 µg, if a short exposure time is used (e.g. 60 seconds). Recombinant LRRK2 protein (Rec LRRK2) was used as antibody control. Results are representative of two independent experiments. (B) Conditions as in (A), but exposure time increased to 5 minutes. Endogenous LRRK2 protein is visible by WB of naïve LUHMES cell lysates when the total protein loaded is higher than 5 µg, if a long exposure times is used (e.g. 5 minutes). Recombinant LRRK2 protein (Rec LRRK2) was used as antibody control. Results are representative of two independent experiments. (C-D) Differentiated (d7) naïve LUHMES cells were lysed and different amounts of total protein lysate (10 and 15 µg) were loaded on the gel. Endogenous LRRK2 expression is not visible at short exposure time, but detectable at long exposure times when the total protein lysate is ≤15 µg. Recombinant LRRK2 protein (Rec LRRK2) was used as antibody control. Results are representative of two independent experiments. The protein corresponding MW (in kDa) are indicated on the left sides of the images.

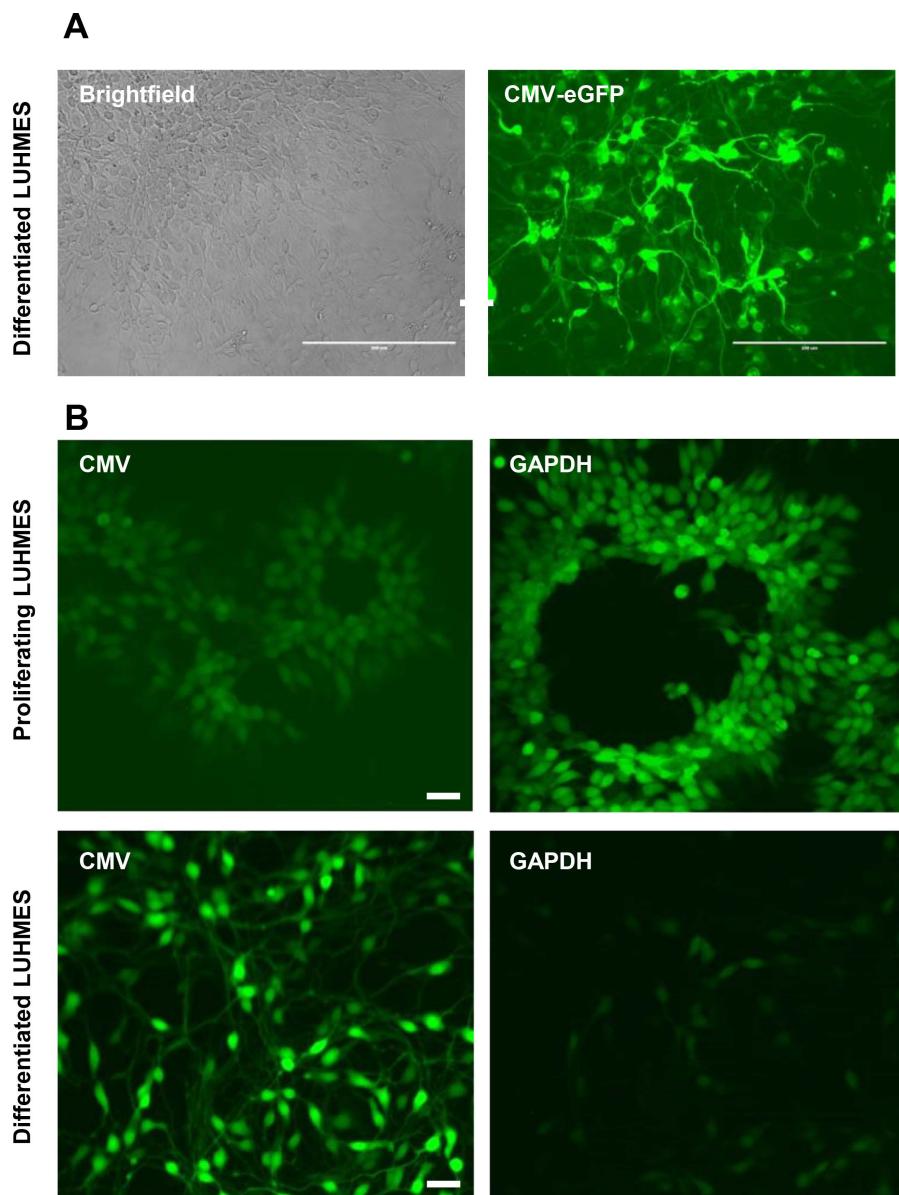


Fig. S2. Optimization of AMAXA nucleofection protocol in proliferating LUHMES cells using GFP-expressing plasmids. (A) Brightfield (left) and fluorescence (right) images of LUHMES cells nucleofected with a plasmid encoding for eGFP under the control of the CMV promoter before antibiotic selection. (B) Representative images of proliferating (upper panels) and differentiated (day 6; lower panels) naïve LUHMES cells nucleofected with plasmids encoding for eGFP under the control of the CMV and GAPDH promoters. Cells were selected with puromycin and then fixed and imaged. eGFP expression was stronger in proliferating cells when the GAPDH promoter was used, whereas the CMV promoter led to a higher eGFP expression in differentiated cells.

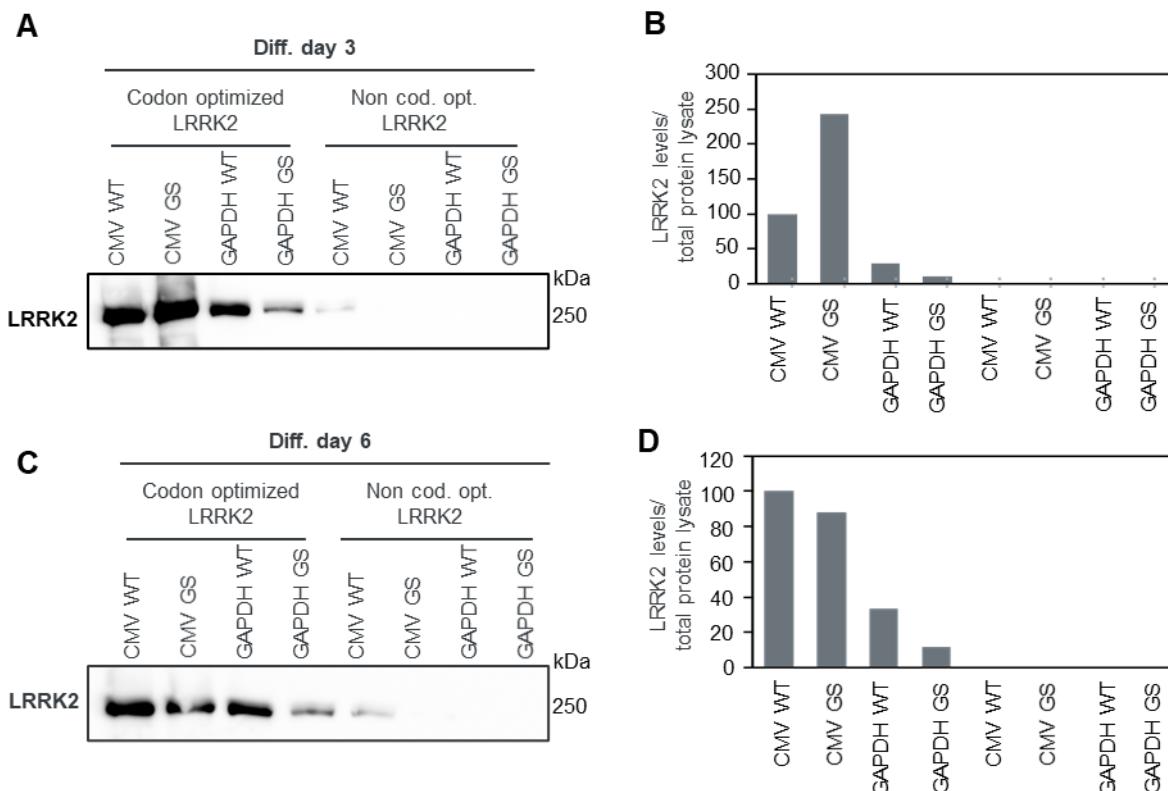


Fig. S3. Generation of LUHMES cells expressing codon-optimized WT and G2019S LRRK2. (A and C) WB analysis of LUHMES cells expressing codon optimized and non-codon optimized (non-cod. opt.) WT and G2019S (GS) LRRK2 under the control of the CMV and GAPDH promoters at days 3 (A) and 6 (C) of differentiation. Codon optimization of *LRRK2* DNA ensued robust LRRK2 protein expression. Results are representative of two independent experiments. The protein corresponding MW (in kDa) are indicated on the right side of the figures. (B and D) Densiometric analysis of LRRK2 levels normalized to total protein samples.

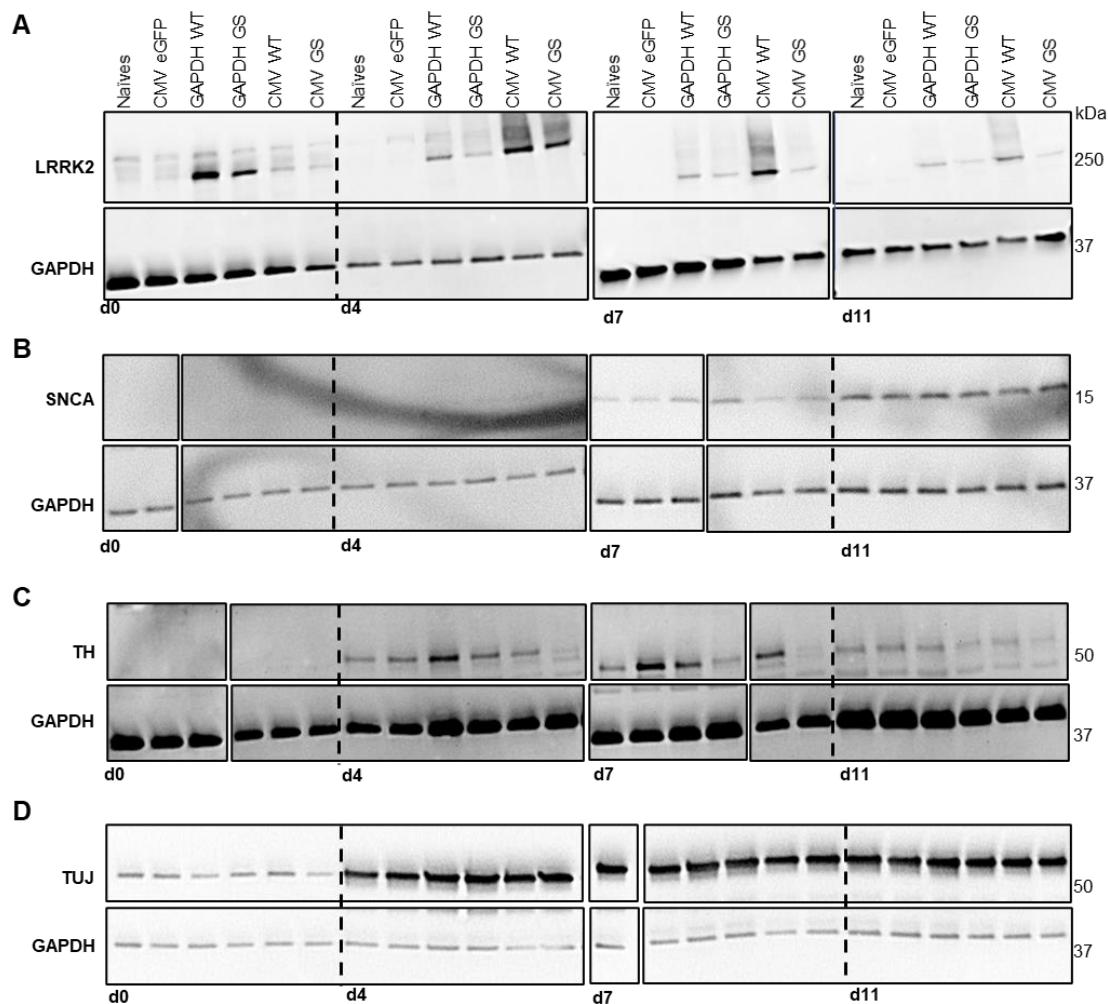


Fig. S4. Kinetics of LRRK2 and neuronal marker expression in differentiating LUHMES cells. (A - D) WB analysis of LRRK2 and different neuronal markers during an 11-day LUHMES cell differentiation period. The housekeeping gene GAPDH is used as loading control. The protein corresponding MW (in kDa) are indicated on the right side of the figure. (A) LRRK2 levels become more important during differentiation, if LRRK2 expression is under the *CMV* promoter. Also, LRRK2 levels decrease during LUHMES differentiation, with the mutant being more strongly affected. (B) Analysis of α -synuclein (SNCA) expression during LUHMES cell differentiation. SNCA levels are barely visible at differentiation day 4 at the exposure time chosen and increase to reach a plateau by day 7. (C) The dopaminergic marker tyrosine hydroxylase (TH) is present early during LUHMES cell differentiation (already at day 4) and remain constant during the entire differentiation period (day 11). Expression of this marker is reduced in the G2019S LRRK2 cells. (D) β III-tubulin (TUJ) is visible already in undifferentiated (day 0) LUHMES cells and its expression becomes stronger during differentiation, reaching a plateau by day 4.

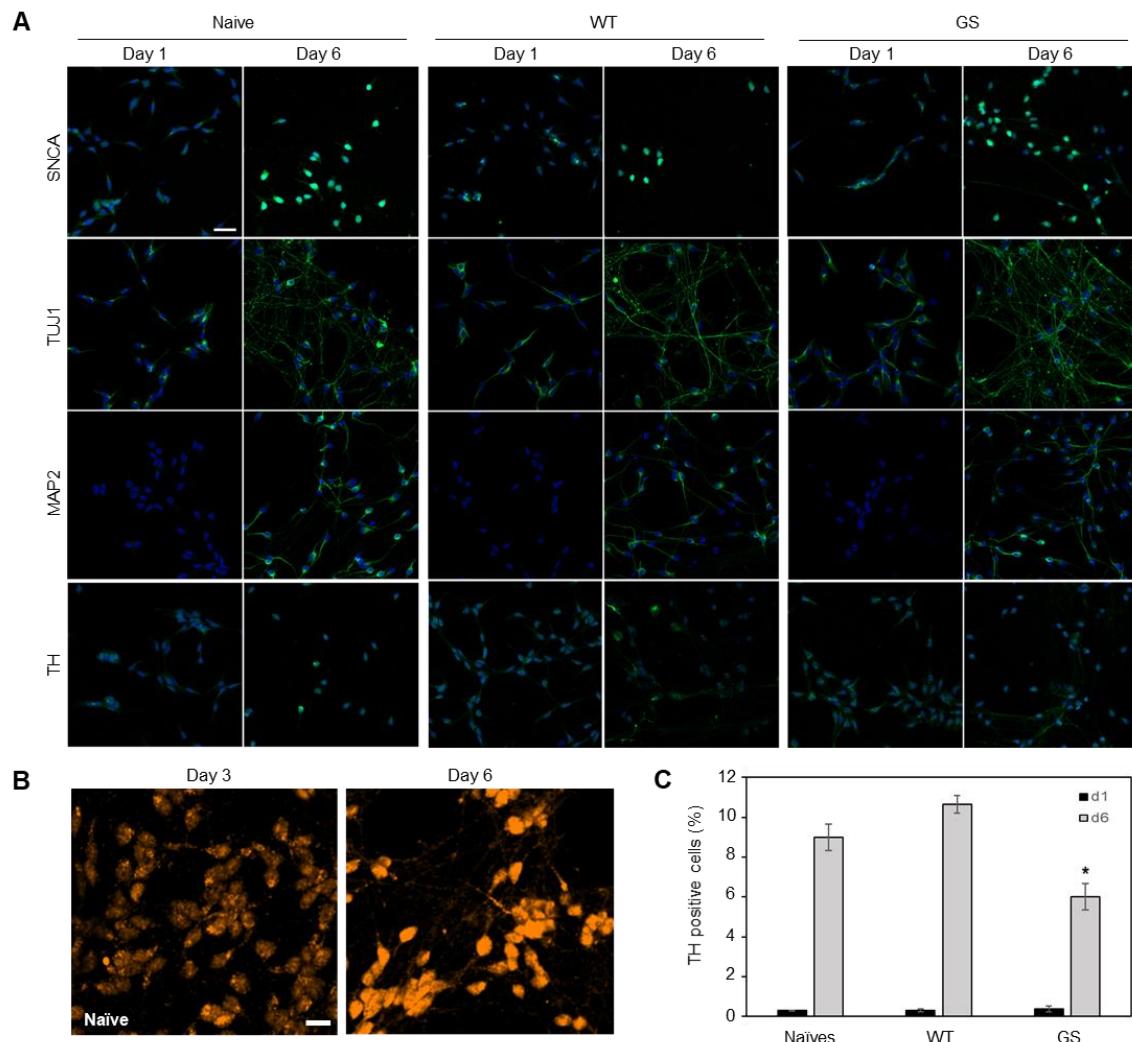


Fig. S5. Immunofluorescence analysis of neuronal markers in early and fully differentiated LUHMES cells. (A) Naïve LUHMES cells and LUHMES cell pools over-expressing codon-optimized WT and G2019S (GS) LRRK2 under the control of the *CMV* promoter, were differentiated for one (d1) or 6 days (d6). Cells were then fixed and stained with the neuronal markers α-synuclein (SNCA), β-III tubulin (TUJ1) microtubule-associated protein 2 (MAP2) and tyrosine hydroxylase (TH). Expression of SNCA, MAP2 and TH was visible in differentiated cells, whereas TUJ1 was present already in undifferentiated cells and its levels increased during differentiation. SNCA is mainly seen in the cell bodies at the exposure time chosen. A mouse monoclonal anti-α-synuclein (BD Transduction Laboratories, clone 42) was used. Hoechst 33342: blue; SNCA, TUJ1, MAP2 and TH: green. Scale bar represents 50 µm. (B) Representative images of differentiated [day 3 (d3) and day 6 (d6)] naïve LUHMES cells. Cells were fixed, permeabilized, and stained with a rabbit monoclonal anti-α-synuclein antibody (Invitrogen, clone 14H2L1). For direct comparison, both images were taken with the same exposure time. α-synuclein levels increased with differentiation times and α-synuclein was visible in the neurites at the late differentiation time. α-synuclein, orange. Scale

bar represents 20 μm . **(C)** Quantification of TH+ cells among the total number of Hoechst-stained cells from 6 to 8 images. GS = G2019S LRRK2. All data expressed as mean \pm SD from two separate experiments. Raw data were first analyzed using one-way ANOVA and then Tukey's post-test was performed to compare all treatment groups. Differences with $*P \leq 0.05$ were considered significantly different with $n \geq 6$ from two independent experiments.

,

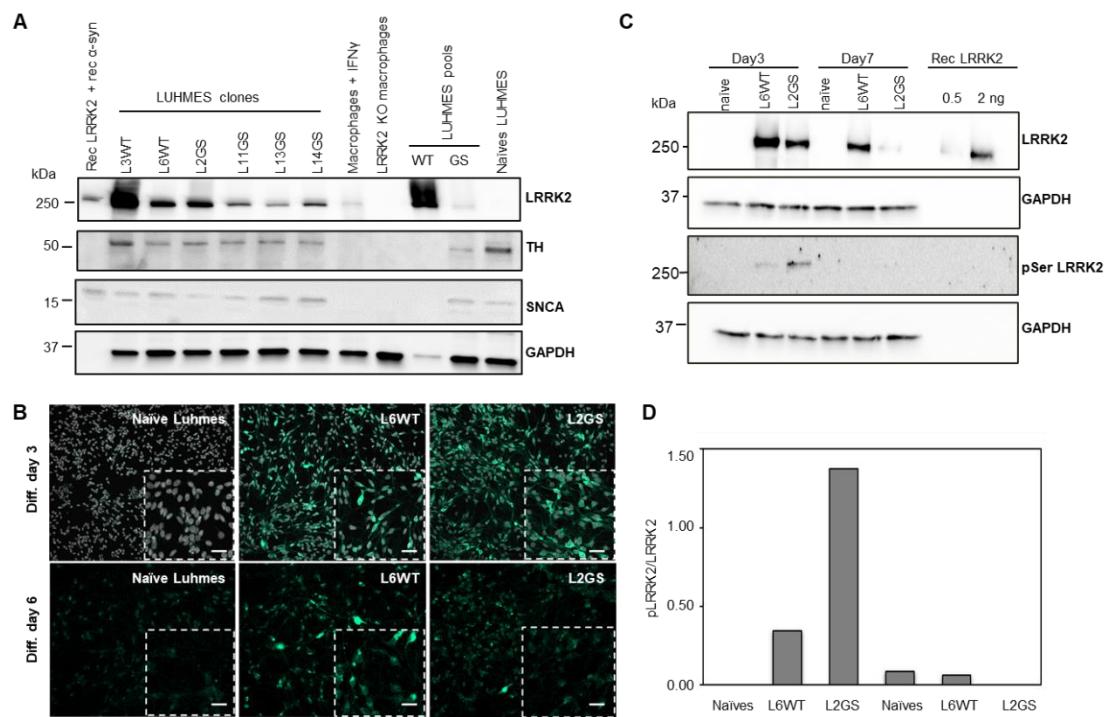


Fig. S6. Western Blot and immunofluorescence characterization of LUHMES cell clones expressing codon-optimized WT and G2019S LRRK2. (A) The levels of LRRK2 protein together with the dopaminergic markers tyrosine hydroxylase (TH) and α-synuclein (SNCA) were analyzed by WB in two WT (L3WT and L6WT) and four G2019S (L2GS, L11GS, L13GS, and L14GS) clones differentiated for 3 days. LRRK2 was clearly visible in all clones. L6WT and L2GS clones expressed similar LRRK2 levels at this differentiation time. LRRK2 expression in these clones was under the CMV promoter. All clones were able to normally differentiate in dopaminergic-like neurons as inferred by the expression of dopaminergic markers TH and SNCA. To validate the LRRK2 antibody, recombinant LRRK2 protein (Rec LRRK2), WT and naïve LUHMES pool lysates and macrophages treated with IFNγ were used as LRRK2 positive controls, whereas LRRK2 KO macrophages were used as LRRK2 negative control. Recombinant α-synuclein (rec α-syn) protein was used to validate the α-synuclein antibody. The housekeeping protein GAPDH was used as loading control. The position and size (in kDa) of molecular weight standards are indicated on the left side of the panel. The displayed experiment is representative of two independent experiments. Note that for the sample named “LUHMES pools – WT” TH and SNCA levels are not detected as we loaded a much lower total protein lysate for this sample (see GAPDH levels) in order to avoid a big smear from the LRRK2 band. (B) WT and G2019S LRRK2 expression was confirmed in LUHMES clones by IF analysis. Naïve, WT (L6WT) and G2019S (L2GS) LUHMES clones were differentiated for three and six days and then fixed, permeabilized and stained with the anti-LRRK2 NeuroMab clone N241A/34. Analogously to the WB results, LRRK2 was not detected

in naïve LUHMES cells, but was strongly and homogeneously expressed in the WT and G2019S clones. LRRK2 is shown in green; nuclei are shown without pseudocolor. For direct comparison, images were taken with the same exposure time. Scale bars represent 25 µm. Results representative of three independent experiments. **(C)** LRRK2 expression decreases with the differentiation of LUHMES. LUHMES cells were differentiated for 3 and 7 days and then collected for WB analysis of LRRK2 and Ser1292 phosphorylation. A robust expression of both WT and G2019S LRRK2 was visible at day 3 of differentiation, but LRRK2 levels were reduced at day 7 of differentiation, with the G2019S being more affected. LRRK2 Ser1292 phosphorylation was detected at day 3 of differentiation and was more pronounced for the mutant. Recombinant LRRK2 (rec LRRK2) was used as control. GAPDH was used to ensure equal loading. The position and size (in kDa) of molecular weight standards are indicated on the left side of the panel. The displayed experiment is representative of three independent experiments. **(D)** Densiometric analysis of pSer1292 LRRK2 shown in **(C)** normalized to total LRRK2 protein.

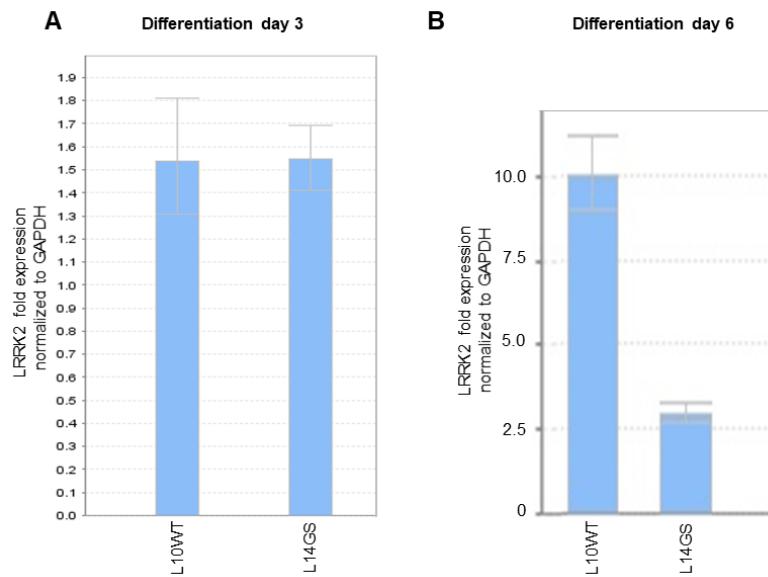
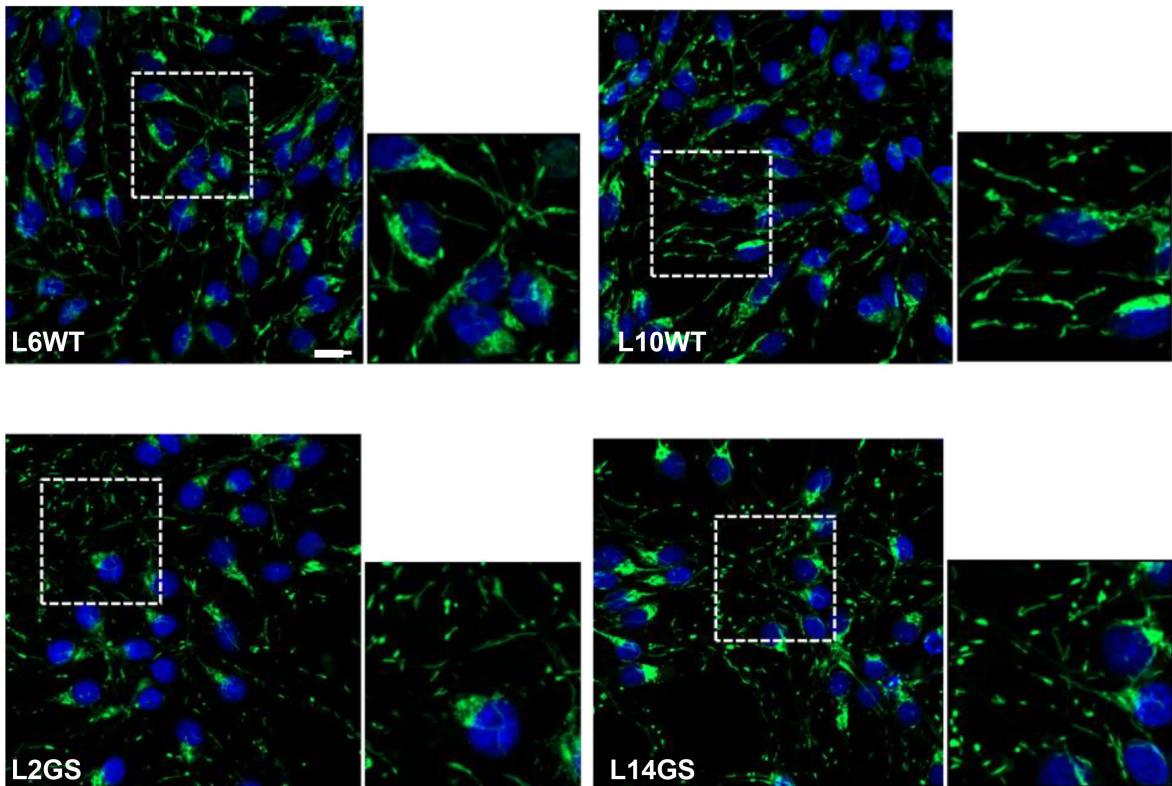
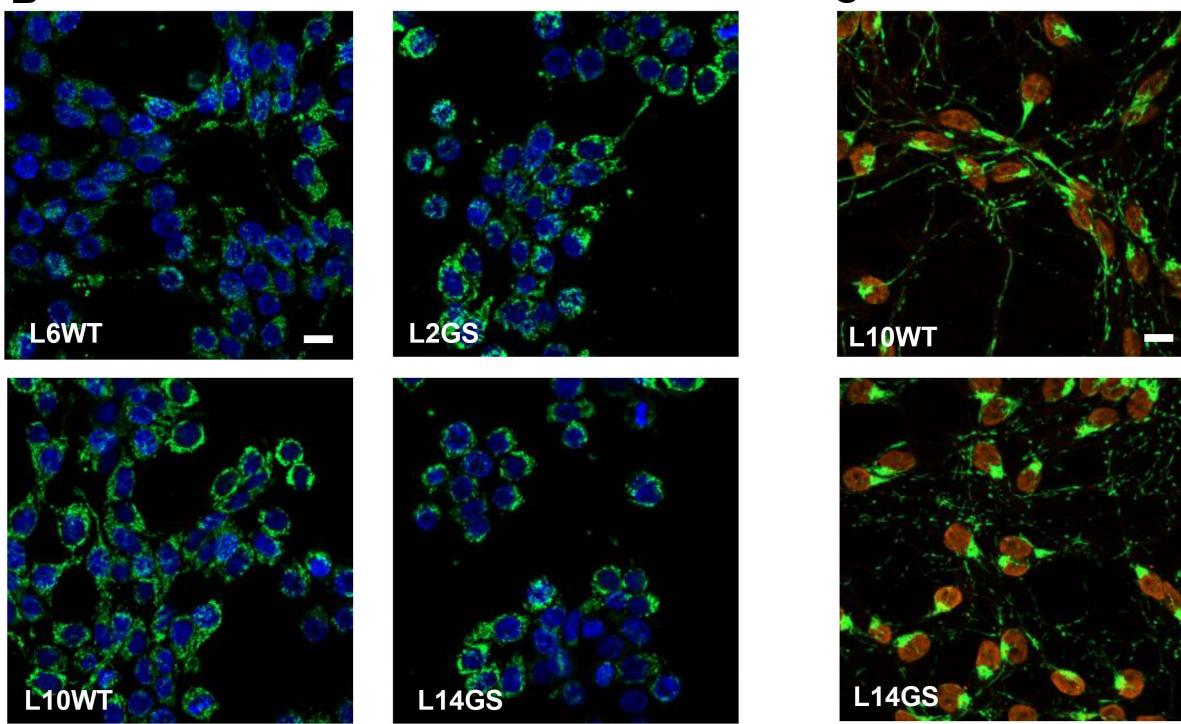


Fig. S7. Levels of *LRRK2* mRNA in differentiated LUHMES clones, as determined by RT-qPCR. (A) mRNA was extracted to quantify *LRRK2* and GAPDH mRNA using quantitative RT-PCR (qRT-PCR). *LRRK2* mRNA levels were measured in differentiated (day 3) LUHMES clones L10WT and L14GS and were found to be equivalent at this time point. *LRRK2* fold mRNA expression was normalized to *GAPDH* levels. The displayed experiment is representative of three independent experiments. Bars show mean \pm SD. (B) mRNA levels of G2019S *LRRK2* decreased at day 6 of differentiation. *LRRK2* fold mRNA expression was normalized to *GAPDH* levels. The displayed experiment is representative of three independent experiments. Bars show mean \pm SD.

A



B



C

Fig. S8. LRRK2 G2019S causes mitochondrial fragmentation in LUHMES cells. **(A)** MitoTracker Green staining of two WT (L6WT and L10WT) and two G2019S (L2GS and L14GS) clones at day 3 of differentiation confirms the data obtained with TOM20 staining: G2019S-expressing clones present a higher mitochondrial fragmentation than WT clones. MitoTracker, green; Hoechst 33342: blue. Scale bar represents 10 μ m. The displayed experiment is representative of three independent experiments. **(B)** MitoTracker Green staining of two couples of undifferentiated WT and G2019S clones, as indicated in panel A, show that mitochondria are clumped around the nuclei and no clear difference in mitochondrial morphology is detected. MitoTracker, green; Hoechst 33342: blue. Scale bar represents 10 μ m. The displayed experiment is representative of three independent experiments. **(C)** WGA 11 and TOM20 staining of day 3 differentiated WT and G2019S clones. MitoTracker, green; WGA: orange. Scale bar represents 10 μ m. The displayed experiment is representative of three independent experiments.

Table S1. List of plasmids used to transfect LUHMES cells.

Construct #	Plasmid name	Resistance	Stock conc ($\mu\text{g}/\mu\text{l}$)	$\mu\text{g}/\text{assay}$
1	CMV cod opt WT	Puromycin	0,173	0,3114
2	CMV cod opt GS	Puromycin	0,172	0,3096
3	GAPDH cod opt WT	Puromycin	0,148	0,2664
4	GAPDH cod opt GS	Puromycin	0,176	0,3168
5	CMV eGFP	Puromycin	0,108	0,1944
6	GAPDH eGFP	Puromycin	0,124	0,2232
7	Transposase	NA	2,27	0,5

cod opt = codon optimized; NA = not applicable

*§cod opt, codon optimized; *NA, not applicable*

Table S2. WT vs G2019S codon optimized LRRK2 DNA sequences.

Score	Expect	Identities	Gaps	Strand
13995 bits(7578)	0.0	7582/7584(99%)	0/7584(0%)	Plus/Plus
Query 1	ATGGCCAGCGGCTCCTGCCAGGGCTGCGAGGAAGATGAGGAAACCTGAAGAAACTGATC	60		
Sbjct 1	ATGGCCAGCGGCTCCTGCCAGGGCTGCGAGGAAGATGAGGAAACCTGAAGAAACTGATC	60		
Query 61	GTGCGGCTGAACAACGTGCAGGAAGGCAAGCAGATCGAGACACTGGTGCAGATCCTGGAA	120		
Sbjct 61	GTGCGGCTGAACAACGTGCAGGAAGGCAAGCAGATCGAGACACTGGTGCAGATCCTGGAA	120		
Query 121	GATCTGCTGGTGTTCACCTACAGCGAGCACGCCAGCAAGCTGTTCCAGGGCAAGAACATC	180		
Sbjct 121	GATCTGCTGGTGTTCACCTACAGCGAGCACGCCAGCAAGCTGTTCCAGGGCAAGAACATC	180		
Query 181	CACGTCCCCCTGCTGATTGTGCTGGACAGCTACATGCCAGCAAGCTGTTCCAGGGCAAGAACATC	240		
Sbjct 181	CACGTCCCCCTGCTGATTGTGCTGGACAGCTACATGCCAGCAAGCTGTTCCAGGGCAAGAACATC	240		
Query 241	GGATGGTCCCTGCTGTCAAGCTGATCGAAGTGTGCCCGGCACCATGCAGAGCCTGATG	300		
Sbjct 241	GGATGGTCCCTGCTGTCAAGCTGATCGAAGTGTGCCCGGCACCATGCAGAGCCTGATG	300		
Query 301	GGACCTCAGGACGTGGCAACGACTGGGAGGTGCTGGAGTGACCACTGATCCTGAAG	360		
Sbjct 301	GGACCTCAGGACGTGGCAACGACTGGGAGGTGCTGGAGTGACCACTGATCCTGAAG	360		
Query 361	ATGCTGACCGTGACAACGCCAGCGTAACCTGAGCGTGATGCCCTGAAAACCTGGAC	420		
Sbjct 361	ATGCTGACCGTGACAACGCCAGCGTAACCTGAGCGTGATGCCCTGAAAACCTGGAC	420		
Query 421	CTGCTGCTGACCAGCGGCAAGATCACACTGCTGATTCTGGACGAGGAATCCGACATCTTC	480		
Sbjct 421	CTGCTGCTGACCAGCGGCAAGATCACACTGCTGATTCTGGACGAGGAATCCGACATCTTC	480		
Query 481	ATGCTGATCTCGACGCCATGCACAGCTTCCCCGCCAACGACGGAGGTGAGAAGCTGGC	540		
Sbjct 481	ATGCTGATCTCGACGCCATGCACAGCTTCCCCGCCAACGACGGAGGTGAGAAGCTGGC	540		
Query 541	TGTAAAGCCCTGCACGTGCTGTTGAGCGGGTGTCCAGGAACAGCTGACCGAGTTCGTG	600		
Sbjct 541	TGTAAAGCCCTGCACGTGCTGTTGAGCGGGTGTCCAGGAACAGCTGACCGAGTTCGTG	600		
Query 601	GAAAACAAGGACTACATGATCCTGCTGAGCGCCCTGACCAACTCAAGGATGAGGAAGAG	660		
Sbjct 601	GAAAACAAGGACTACATGATCCTGCTGAGCGCCCTGACCAACTCAAGGATGAGGAAGAG	660		
Query 661	ATCGTGCTGCATGTGCTGCACTGCCGCACAGCCTGGCCATCCCTGCAACAACGTGGAA	720		
Sbjct 661	ATCGTGCTGCATGTGCTGCACTGCCGCACAGCCTGGCCATCCCTGCAACAACGTGGAA	720		
Query 721	GTGCTGATGAGCGGCAACGTGCGGTGCTACAACATCGTGGTGGAAAGCCATGAAGGCC	780		

Sbjct 721	GTGCTGATGAGCGGCCAACGTGCGGTGCTACAAACATCGTGGTCCAAGGCCATGAAGGCCTTT	780
Query 781	CCCATGAGCGAGCGGATCCAGGAAGTGTCCCTGCTGCCCTGCTGCATGGCTGACCCTGGC	840
Sbjct 781	CCCATGAGCGAGCGGATCCAGGAAGTGTCCCTGCTGCCCTGCTGCATGGCTGACCCTGGC	840
Query 841	AACTTCTTCAACATCCTGGTCTGAATGAGGTGCACGAGTTGTCGTGAAGGCCGTGCAG	900
Sbjct 841	AACTTCTTCAACATCCTGGTCTGAATGAGGTGCACGAGTTGTCGTGAAGGCCGTGCAG	900
Query 901	CAGTACCCCGAGAATGCCGCCCTGCAGATCAGGCCCTGTCTGTCTGCCCTGCTGACC	960
Sbjct 901	CAGTACCCCGAGAATGCCGCCCTGCAGATCAGGCCCTGTCTGTCTGCCCTGCTGACC	960
Query 961	GAAACCATAATTCTGAACCAGGACCTGGAAGAGAAGAACGAGAACCCAGGAAAACGACGAC	1020
Sbjct 961	GAAACCATAATTCTGAACCAGGACCTGGAAGAGAAGAACGAGAACCCAGGAAAACGACGAC	1020
Query 1021	GAGGGCGAAGAGGATAAGCTGTTCTGGCTGGAAGCCTGCTACAAGGCCCTGACCTGGCAC	1080
Sbjct 1021	GAGGGCGAAGAGGATAAGCTGTTCTGGCTGGAAGCCTGCTACAAGGCCCTGACCTGGCAC	1080
Query 1081	CGGAAGAACAAACATGTGCAGGAAGGCCCTGCTGGCCCTGAACAATCTGCTGATGTAC	1140
Sbjct 1081	CGGAAGAACAAACATGTGCAGGAAGGCCCTGCTGGCCCTGAACAATCTGCTGATGTAC	1140
Query 1141	CAGAACTCCCTGCACGAGAACATGGCAGGACGGGCCACTTCCTGCCACCGGGAA	1200
Sbjct 1141	CAGAACTCCCTGCACGAGAACATGGCAGGACGGGCCACTTCCTGCCACCGGGAA	1200
Query 1201	GTGATGCTGAGCATGCTGATGCACCTCCAGCTCAAAGAGGTGTTCCAGGCCAGGCCAAC	1260
Sbjct 1201	GTGATGCTGAGCATGCTGATGCACCTCCAGCTCAAAGAGGTGTTCCAGGCCAGGCCAAC	1260
Query 1261	GCCCTGAGTACCCCTGCTGGAACAGAACGTGAACCTTCGAAAATCCTGCTGTCCAAGGGC	1320
Sbjct 1261	GCCCTGAGTACCCCTGCTGGAACAGAACGTGAACCTTCGAAAATCCTGCTGTCCAAGGGC	1320
Query 1321	ATCCACCTGAACGTGCTGGAACTGATGCAGAACATCCACAGCCCCGAGGTGGCGAG	1380
Sbjct 1321	ATCCACCTGAACGTGCTGGAACTGATGCAGAACATCCACAGCCCCGAGGTGGCGAG	1380
Query 1381	AGCGGATGCAAAATGCTGAACCACCTGTTGAGGGCAGCAACACCAGCCTGGACATCATG	1440
Sbjct 1381	AGCGGATGCAAAATGCTGAACCACCTGTTGAGGGCAGCAACACCAGCCTGGACATCATG	1440
Query 1441	GCCGCCGTGGTGCCCAAGATCCTGACAGTGTGAAAGCGGCACGAGACAAGCCTGCCGTG	1500
Sbjct 1441	GCCGCCGTGGTGCCCAAGATCCTGACAGTGTGAAAGCGGCACGAGACAAGCCTGCCGTG	1500
Query 1501	CAGCTGGAAGCTCTGAGAGGCCATCCTGCACCTCATCGTGCCGGCATGCCGAGGAAAGC	1560
Sbjct 1501	CAGCTGGAAGCTCTGAGAGGCCATCCTGCACCTCATCGTGCCGGCATGCCGAGGAAAGC	1560
Query 1561	AGAGAGGACACCGAGTTCCACCAAGCTGAACATGGTCAAGAACAGCAGTGCTCAAGAAC	1620

Sbjct 1561	AGAGAGGACACCGAGTCCACCACAAGCTGAACATGGTCAAGAAGCAGTGCTCAAGAAC 1620
Query 1621	GACATTACAAGCTGGTCTGCCGCCCTGAATGGTCATCGCAACCCGGCATCCAG 1680
Sbjct 1621	GACATTACAAGCTGGTCTGCCGCCCTGAATGGTCATCGCAACCCGGCATCCAG 1680
Query 1681	AAATGTGGCCTGAAAGTGATCAGCAGCATCGCACCTCCCCGACGCCCTGGAAATGCTG 1740
Sbjct 1681	AAATGTGGCCTGAAAGTGATCAGCAGCATCGCACCTCCCCGACGCCCTGGAAATGCTG 1740
Query 1741	TCTCTGGAAGGCGCCATGGACAGCGTGCACACACTGCAGATGTACCCGACGATCAG 1800
Sbjct 1741	TCTCTGGAAGGCGCCATGGACAGCGTGCACACACTGCAGATGTACCCGACGATCAG 1800
Query 1801	GAAATCCAGTGCCTGGCCTGTCCTGATCGGCTACCTGATCACCAAGAAAAACGTGTT 1860
Sbjct 1801	GAAATCCAGTGCCTGGCCTGTCCTGATCGGCTACCTGATCACCAAGAAAAACGTGTT 1860
Query 1861	ATCGGGACCGGCCATCTGCTGCCAAGATTCTGGTGTCCAGCCTGTACCGGTTCAAGGAC 1920
Sbjct 1861	ATCGGGACCGGCCATCTGCTGCCAAGATTCTGGTGTCCAGCCTGTACCGGTTCAAGGAC 1920
Query 1921	GTGGCCGAAATCCAGACCAAGGGCTTCCAGACCATCCTGGCTATCCTGAAGCTGTCCGCC 1980
Sbjct 1921	GTGGCCGAAATCCAGACCAAGGGCTTCCAGACCATCCTGGCTATCCTGAAGCTGTCCGCC 1980
Query 1981	AGCTTCTCCAAGCTGGTGCATCACAGCTCGACCTCGTATCTTACCCAGATGAGC 2040
Sbjct 1981	AGCTTCTCCAAGCTGGTGCATCACAGCTCGACCTCGTATCTTACCCAGATGAGC 2040
Query 2041	AGCAACATCATGGAACAGAACAGGACCAAGCAGTTCTGAACCTGTGCTGCAAGTGCTCGCC 2100
Sbjct 2041	AGCAACATCATGGAACAGAACAGGACCAAGCAGTTCTGAACCTGTGCTGCAAGTGCTCGCC 2100
Query 2101	AAGGTGGCCATGGACGACTACCTGAAGAACGTGATGCTGGAACGGGCCTGCGACCAGAAC 2160
Sbjct 2101	AAGGTGGCCATGGACGACTACCTGAAGAACGTGATGCTGGAACGGGCCTGCGACCAGAAC 2160
Query 2161	AACAGCATCATGGTGAATGCTTGCTGCTGGCGCCACGCCAACAGGCCAAAGAG 2220
Sbjct 2161	AACAGCATCATGGTGAATGCTTGCTGCTGGCGCCACGCCAACAGGCCAAAGAG 2220
Query 2221	GGAAGCAGCCTGATGCCAAGTGTGCGAGAAAGAGTCCAGCCCTAACGCTGGTGGAACTG 2280
Sbjct 2221	GGAAGCAGCCTGATGCCAAGTGTGCGAGAAAGAGTCCAGCCCTAACGCTGGTGGAACTG 2280
Query 2281	CTGCTGAACTCCGGCAGCCCGAACAGGATGTGCGGAAGGCTCTGACCATCAGCATCGGC 2340
Sbjct 2281	CTGCTGAACTCCGGCAGCCCGAACAGGATGTGCGGAAGGCTCTGACCATCAGCATCGGC 2340
Query 2341	AAGGGCGACAGCCAGATCATCTCTGCTGCTGCCAGACTGGCCCTGGATGTGGCAAC 2400
Sbjct 2341	AAGGGCGACAGCCAGATCATCTCTGCTGCTGCCAGACTGGCCCTGGATGTGGCAAC 2400
Query 2401	AACTCTATCTGCCTGGCGGCTCTGTATCGAAAGGTGGAACCCAGCTGGCTGGCCCCC 2460

Sbjct 2401	AACTCTATCTGCCTGGCGGCTCTGTATCGAAAGGTGGAACCCAGCTGGCTGGCCCC 2460
Query 2461	CTGTTCCCTGACAAGACCAGAACCTGCCAAGCAGACCAATATGCCAGCACCCCTGGCC 2520
Sbjct 2461	CTGTTCCCTGACAAGACCAGAACCTGCCAAGCAGACCAATATGCCAGCACCCCTGGCC 2520
Query 2521	CGGATGGTCATCAGATAACCAGATGAAGTCCGCCGTGGAAGAGGGCACCGCTCTGGCTCC 2580
Sbjct 2521	CGGATGGTCATCAGATAACCAGATGAAGTCCGCCGTGGAAGAGGGCACCGCTCTGGCTCC 2580
Query 2581	GATGGCAACTTCAGCGAGGACGTGCTGAGCAAGTTCGACGAGTGGACCTTCATCCCCGAC 2640
Sbjct 2581	GATGGCAACTTCAGCGAGGACGTGCTGAGCAAGTTCGACGAGTGGACCTTCATCCCCGAC 2640
Query 2641	AGCAGCATGGACTCCGTGTTGCCAGAGCGACGACCTGGATAGCGAGGGCTCTGAGGGC 2700
Sbjct 2641	AGCAGCATGGACTCCGTGTTGCCAGAGCGACGACCTGGATAGCGAGGGCTCTGAGGGC 2700
Query 2701	AGCTTCCTCGTAAGAAGAAGTCCAACCTCCATCAGCGTGGCGAGTTCTACCGGACGCC 2760
Sbjct 2701	AGCTTCCTCGTAAGAAGAAGTCCAACCTCCATCAGCGTGGCGAGTTCTACCGGACGCC 2760
Query 2761	GTGCTGCAGAGATGCAGCCCCAATCTGCAGCGGACAGCAACAGCCTGGCCCCATCTTC 2820
Sbjct 2761	GTGCTGCAGAGATGCAGCCCCAATCTGCAGCGGACAGCAACAGCCTGGCCCCATCTTC 2820
Query 2821	GACCACGAGGATCTGCTGAAGCGGAAGAGAAAGATCCTGTCCAGCGACGACAGCCTGCGG 2880
Sbjct 2821	GACCACGAGGATCTGCTGAAGCGGAAGAGAAAGATCCTGTCCAGCGACGACAGCCTGCGG 2880
Query 2881	TCTAGCAAGCTGCAGAGCCACATGAGACACAGCGACAGCATCAGCTCCCTGCCAGCGAG 2940
Sbjct 2881	TCTAGCAAGCTGCAGAGCCACATGAGACACAGCGACAGCATCAGCTCCCTGCCAGCGAG 2940
Query 2941	AGAGAGTACATCACAAGCCTGGATCTGAGCGCCAATGAGCTGCGGGACATCGATGCCCTG 3000
Sbjct 2941	AGAGAGTACATCACAAGCCTGGATCTGAGCGCCAATGAGCTGCGGGACATCGATGCCCTG 3000
Query 3001	AGCCAGAAATGCTGCATCAGCGTGCACCTGGAACATCTGGAAAAACTGGAACGTGACCAAG 3060
Sbjct 3001	AGCCAGAAATGCTGCATCAGCGTGCACCTGGAACATCTGGAAAAACTGGAACGTGACCAAG 3060
Query 3061	AACGCACTGACCAGCTCCCTCAGCAGCTGTGCGAGACTCTGAAGTCCCTGACCCATCTG 3120
Sbjct 3061	AACGCACTGACCAGCTCCCTCAGCAGCTGTGCGAGACTCTGAAGTCCCTGACCCATCTG 3120
Query 3121	GATCTGCATAGCAACAAGTTCACATCCTCCCCAGCTACCTGCTGAAGATGAGCTGTATC 3180
Sbjct 3121	GATCTGCATAGCAACAAGTTCACATCCTCCCCAGCTACCTGCTGAAGATGAGCTGTATC 3180
Query 3181	GCCAACCTGGACGTGCCCCGGAACGACATCGGACCCAGCGTGGTGCTGGACCCATCCGTG 3240
Sbjct 3181	GCCAACCTGGACGTGCCCCGGAACGACATCGGACCCAGCGTGGTGCTGGACCCATCCGTG 3240
Query 3241	AAGTGCCCCACCCCTGAAGCAGTTAACCTGAGCTACAACCAGCTGAGCTTCGTGCCGAG 3300

Sbjct 3241	AAGTGCCCCACCCCTGAAGCAGTTAACCTGAGCTACAACCAGCTGAGCTTCGTGCCGAG	3300
Query 3301	AACCTGACCGACGTGGTGGAAAAGCTGGAACAGCTGATCCTGGAAGGCAACAAGATCAGC	3360
Sbjct 3301	AACCTGACCGACGTGGTGGAAAAGCTGGAACAGCTGATCCTGGAAGGCAACAAGATCAGC	3360
Query 3361	GGCATCTGTAGCCCCCTGAGACTGAAAGAGCTGAAGATTCTGAATCTGAGCAAGAACAC	3420
Sbjct 3361	GGCATCTGTAGCCCCCTGAGACTGAAAGAGCTGAAGATTCTGAATCTGAGCAAGAACAC	3420
Query 3421	ATCTCCAGCCTGAGCGAGAATTCCCTGGAAGCTTGCCTTGCCTTGCCTGAAAGCTTCAGCGCC	3480
Sbjct 3421	ATCTCCAGCCTGAGCGAGAATTCCCTGGAAGCTTGCCTTGCCTGAAAGCTTCAGCGCC	3480
Query 3481	CGGATGAACTTCCTGGCGCCATGCCTTCTGCCCCCAAGGTGGAAAGCTTCAGCGCC	3540
Sbjct 3481	CGGATGAACTTCCTGGCGCCATGCCTTCTGCCCCCAAGGTGGAAAGCTTCAGCGCC	3540
Query 3541	TCCCAGAACAGTTCTCCTGCATCCCCGAGGCCATCCTGAATCTGCCCCACCTGAGATCC	3600
Sbjct 3541	TCCCAGAACAGTTCTCCTGCATCCCCGAGGCCATCCTGAATCTGCCCCACCTGAGATCC	3600
Query 3601	CTGGATATGTCCTCCAACGACATCCAGTACCTGCCGGACCCGCCACTGGAAAAGCCTG	3660
Sbjct 3601	CTGGATATGTCCTCCAACGACATCCAGTACCTGCCGGACCCGCCACTGGAAAAGCCTG	3660
Query 3661	AACCTGAGAGAGCTGCTGTTAGCCACAACCAGATCTCCATTCTGGACCTGTCTGAGAAG	3720
Sbjct 3661	AACCTGAGAGAGCTGCTGTTAGCCACAACCAGATCTCCATTCTGGACCTGTCTGAGAAG	3720
Query 3721	GCCTACCTGTGGTCCC GG GTGGAAAAACTGCACCTGTCCCACAACAAGCTGAAAGAGATC	3780
Sbjct 3721	GCCTACCTGTGGTCCC GG GTGGAAAAACTGCACCTGTCCCACAACAAGCTGAAAGAGATC	3780
Query 3781	CCCCCCGAGATCGGCTGCCTGGAAAATCTGACCTCTCTGGATGTGTCCCTACAACCTGGAA	3840
Sbjct 3781	CCCCCCGAGATCGGCTGCCTGGAAAATCTGACCTCTCTGGATGTGTCCCTACAACCTGGAA	3840
Query 3841	CTGCGGAGCTCCCCAACGAGATGGGCAAGCTGTCTAACATCTGGACCTGCCCTGGAC	3900
Sbjct 3841	CTGCGGAGCTCCCCAACGAGATGGGCAAGCTGTCTAACATCTGGACCTGCCCTGGAC	3900
Query 3901	GAGCTGCACCTGAACCTCGACTTCAAGCACATCGGCTGCAAGGCCAAGGACATCATCCGG	3960
Sbjct 3901	GAGCTGCACCTGAACCTCGACTTCAAGCACATCGGCTGCAAGGCCAAGGACATCATCCGG	3960
Query 3961	TTTCTGCAGCAGAGGGCTGAAGAAAAGCCGTGCCCTACAAACAGAAATGAAGCTGATGATCGTG	4020
Sbjct 3961	TTTCTGCAGCAGAGGGCTGAAGAAAAGCCGTGCCCTACAAACAGAAATGAAGCTGATGATCGTG	4020
Query 4021	GGCAATACCGGCTCCGGCAAGACAACCCCTGCTGCAGCAGCTGATGAAGACCAAGAAATCC	4080
Sbjct 4021	GGCAATACCGGCTCCGGCAAGACAACCCCTGCTGCAGCAGCTGATGAAGACCAAGAAATCC	4080
Query 4081	GACCTGGCATGCAGTCCGCCACCGTGGGAATCGACGTGAAGGACTGGCCCATCCAGATC	4140

Sbjct 4081	GACCTGGGCATGCAGTCCGCCACCGTGGGAATCGACGTGAAGGACTGGCCCATCCAGATC	4140
Query 4141	CGGGACAAGCGGAAGCGGGATCTGGTGCTGAACGTGTGGACTTCGCCGGCAGAGAAGAG	4200
Sbjct 4141	CGGGACAAGCGGAAGCGGGATCTGGTGCTGAACGTGTGGACTTCGCCGGCAGAGAAGAG	4200
Query 4201	TTCTACAGCACCCACCCCCACTTCATGACCCAGCGGGCCCTGTATCTGGCCGTACGAC	4260
Sbjct 4201	TTCTACAGCACCCACCCCCACTTCATGACCCAGCGGGCCCTGTATCTGGCCGTACGAC	4260
Query 4261	CTGAGCAAGGCCAGGCCGAAGTGGACGCTATGAAGCCCTGGCTGTTAACATCAAGGCC	4320
Sbjct 4261	CTGAGCAAGGCCAGGCCGAAGTGGACGCTATGAAGCCCTGGCTGTTAACATCAAGGCC	4320
Query 4321	AGAGCCAGCAGCTCCCCGTGATCCTCGTGGAACACACACCTGGATGTCTGACGAGAAG	4380
Sbjct 4321	AGAGCCAGCAGCTCCCCGTGATCCTCGTGGAACACACACCTGGATGTCTGACGAGAAG	4380
Query 4381	CAGCGGAAGGCCTGCATGAGCAAGATTACCAAAGAACTGCTGAACAAGCGGGCTTCCCT	4440
Sbjct 4381	CAGCGGAAGGCCTGCATGAGCAAGATTACCAAAGAACTGCTGAACAAGCGGGCTTCCCT	4440
Query 4441	GCCATCCGGGACTACCACCTCGTGAACGCCACCGAAGAGAGCGACGCTCTGCCAAGCTG	4500
Sbjct 4441	GCCATCCGGGACTACCACCTCGTGAACGCCACCGAAGAGAGCGACGCTCTGCCAAGCTG	4500
Query 4501	AGAAAGACCATCATCAACGAGAGCCTGAATTCAAGATTGGACCAGCTGGCTGGC	4560
Sbjct 4501	AGAAAGACCATCATCAACGAGAGCCTGAATTCAAGATTGGACCAGCTGGCTGGC	4560
Query 4561	CAGCTGATCCCCACTGCTACGTGGAACTGGAAAAATCATCCTGAGCGAACGCAAGAAC	4620
Sbjct 4561	CAGCTGATCCCCACTGCTACGTGGAACTGGAAAAATCATCCTGAGCGAACGCAAGAAC	4620
Query 4621	GTGCCCATCGAGTCCCTGTGATCGACCGGAAAAGACTGCTGCAGCTCGCGCGAGAAT	4680
Sbjct 4621	GTGCCCATCGAGTCCCTGTGATCGACCGGAAAAGACTGCTGCAGCTCGCGCGAGAAT	4680
Query 4681	CAGCTGCAGCTGGACGAGAACGAGCTGCCACGCCGTGCACTTCTAACGAAAGCGGC	4740
Sbjct 4681	CAGCTGCAGCTGGACGAGAACGAGCTGCCACGCCGTGCACTTCTAACGAAAGCGGC	4740
Query 4741	GTGCTGCTGCATTTCAAGACCCAGCCCTGCAGCTGTCTGACCTGTACTCGTGGAACCT	4800
Sbjct 4741	GTGCTGCTGCATTTCAAGACCCAGCCCTGCAGCTGTCTGACCTGTACTCGTGGAACCT	4800
Query 4801	AAGTGGCTGTGAAAATCATGCCAGATTCTGACCGTGAAGGTGGAAGGCTGCCCTAAG	4860
Sbjct 4801	AAGTGGCTGTGAAAATCATGCCAGATTCTGACCGTGAAGGTGGAAGGCTGCCCTAAG	4860
Query 4861	CACCTAAGGGCATCATCCAGACGGACGTGGAAAAGTTCTGTCCAAGAAGAGGAAG	4920
Sbjct 4861	CACCTAAGGGCATCATCCAGACGGACGTGGAAAAGTTCTGTCCAAGAAGAGGAAG	4920
Query 4921	TTCCCCAAGAACTATGACCCAGTACTCAAACGTGGAAAAATTCCAGATGCCCTG	4980

Sbjct 4921	TTCCCCAAGAACTATATGACCCAGTACTTCAAACTGCTGGAAAAATTCCAGATGCCCTG 4980
Query 4981	CCCATGGCGAGGAATACTGCTGGTGCCTAGCAGCCTGTCCGACCACAGACCCGTGATC 5040
Sbjct 4981	CCCATGGCGAGGAATACTGCTGGTGCCTAGCAGCCTGTCCGACCACAGACCCGTGATC 5040
Query 5041	GAACTGCCCACTGCGAGAACTCCGAGATCATCATCAGACTGTACGAGATGCCCTACTTC 5100
Sbjct 5041	GAACTGCCCACTGCGAGAACTCCGAGATCATCATCAGACTGTACGAGATGCCCTACTTC 5100
Query 5101	CCCATGGGCTTTGGAGCCGGCTGATCAATAGGCTGCTGGAAATCAGCCCACATGCTG 5160
Sbjct 5101	CCCATGGGCTTTGGAGCCGGCTGATCAATAGGCTGCTGGAAATCAGCCCACATGCTG 5160
Query 5161	AGCGGCAGAGAGAGAGGGCCCTGCGGCCAATAGAACATGTACTGGCGCAGGGCATCTG 5220
Sbjct 5161	AGCGGCAGAGAGAGAGGGCCCTGCGGCCAATAGAACATGTACTGGCGCAGGGCATCTG 5220
Query 5221	AACTGGTCCCCAGAGGCCTACTGCCTCGTGGCAGCGAAGTGCTGGATAACCACCCGAG 5280
Sbjct 5221	AACTGGTCCCCAGAGGCCTACTGCCTCGTGGCAGCGAAGTGCTGGATAACCACCCGAG 5280
Query 5281	AGCTTTCTGAAGATCACCGTCCCCAGCTGCCAGCTGCCGAAGGGCTGTATCCTGCTGGACAGGTG 5340
Sbjct 5281	AGCTTTCTGAAGATCACCGTCCCCAGCTGCCAGCTGCCGAAGGGCTGTATCCTGCTGGACAGGTG 5340
Query 5341	GTGGACCACATCGACTCCCTGATGGAAGAGTGTTCCCCGGCCTGCTGGAAATTGACATC 5400
Sbjct 5341	GTGGACCACATCGACTCCCTGATGGAAGAGTGTTCCCCGGCCTGCTGGAAATTGACATC 5400
Query 5401	TGCGGCAGGGCGAGACACTGCTGAAGAAGTGTTCCCCCTGTACAGCTAACGACGGCGAG5460
Sbjct 5401	TGCGGCAGGGCGAGACACTGCTGAAGAAGTGTTCCCCCTGTACAGCTAACGACGGCGAG5460
Query 5461	GAACACCAGAAAATTCTGCTGGACGACCTGATGAAGAACGCCGAAGAGGGCGACCTGCT 5520
Sbjct 5461	GAACACCAGAAAATTCTGCTGGACGACCTGATGAAGAACGCCGAAGAGGGCGACCTGCTC 5520
Query 5521	GTGAACCCGATCACCCAGACTGACCATCCCCATCTCCAGATTGCCCGACCTGATC 5580
Sbjct 5521	GTGAACCCGATCACCCAGACTGACCATCCCCATCTCCAGATTGCCCGACCTGATC 5580
Query 5581	CTGGCCGACCTGCCAGAAACATCATGCTGAACAATGACGAGCTGGAAATCGAGCAGGCC 5640
Sbjct 5581	CTGGCCGACCTGCCAGAAACATCATGCTGAACAATGACGAGCTGGAAATCGAGCAGGCC 5640
Query 5641	CCCGAGTTCTGCTGGGGATGGCAGCTTGGCAGCGTGTACAGAGCCCTATGAGGGG 5700
Sbjct 5641	CCCGAGTTCTGCTGGGGATGGCAGCTTGGCAGCGTGTACAGAGCCCTATGAGGGG 5700
Query 5701	GAAGAGGTGGCAGTGAAGATCTTAACAAGCACACCTCCCTGGCTGAGACAGGAA 5760
Sbjct 5701	GAAGAGGTGGCAGTGAAGATCTTAACAAGCACACCTCCCTGGCTGAGACAGGAA 5760
Query 5761	CTGGTGGTGTGCCATCTGCATCACCTAGCCTGATCAGCCTGCTGGCTGCCGGCATC 5820

Sbjct 5761	CTGGTGGTGCTGTGCCATCTGCATCACCCTAGCCTGATCAGCCTGCTGGCTGCCGGCATIC 5820
Query 5821	AGACCCCGGATGCTCGTATGGAACCTGGCCAGCAAGGGCTCCCTGGACAGACTGCTGCAG 5880
Sbjct 5821	AGACCCCGGATGCTCGTATGGAACCTGGCCAGCAAGGGCTCCCTGGACAGACTGCTGCAG 5880
Query 5881	CAGGACAAGGCCAGCCTGACCAGAACCTGCAGCACCGATTGCTCTGCACGTGGCAGAC 5940
Sbjct 5881	CAGGACAAGGCCAGCCTGACCAGAACCTGCAGCACCGATTGCTCTGCACGTGGCAGAC 5940
Query 5941	GGCCTGAGATACTGCACTCCGCCATGATCATCTACAGGGACCTGAAGCCCCACAATGTG 6000
Sbjct 5941	GGCCTGAGATACTGCACTCCGCCATGATCATCTACAGGGACCTGAAGCCCCACAATGTG 6000
Query 6001	CTGCTGTTTACCCGTACCCCAACGCCGCCATCATTGCCAAGATGCCGACTAC GGA ATC 6060
Sbjct 6001	CTGCTGTTTACCCGTACCCCAACGCCGCCATCATTGCCAAGATGCCGACTAC TCA ATC 6060
Query 6061	GCCCAGTACTGTTGCAGAATGGGCATCAAGACCTCCGAGGGCACCCCCGGCTTAGAGCC 6120
Sbjct 6061	GCCCAGTACTGTTGCAGAATGGGCATCAAGACCTCCGAGGGCACCCCCGGCTTAGAGCC 6120
Query 6121	CCTGAAGTGGCCAGAGGCAACGTGATCTATAATCAGCAGGCCACGTGACTCCTCGGA 6180
Sbjct 6121	CCTGAAGTGGCCAGAGGCAACGTGATCTATAATCAGCAGGCCACGTGACTCCTCGGA 6180
Query 6181	CTGCTGCTGTACGACATCCTGACCACCGCGGCAGAACATGTGGAAAGACTGAAGTCCCT 6240
Sbjct 6181	CTGCTGCTGTACGACATCCTGACCACCGCGGCAGAACATGTGGAAAGACTGAAGTCCCT 6240
Query 6241	AACGAGTCGATGAGCTGGAAATCCAGGGAAAGCTGCCGACCCGTGAAAGAGTATGGC 6300
Sbjct 6241	AACGAGTCGATGAGCTGGAAATCCAGGGAAAGCTGCCGACCCGTGAAAGAGTATGGC 6300
Query 6301	TGCGCCCCCTGGCCATGGTGGAAAAACTGATCAAGCAGTGCCTGAAAGAAAACCCCCAG 6360
Sbjct 6301	TGCGCCCCCTGGCCATGGTGGAAAAACTGATCAAGCAGTGCCTGAAAGAAAACCCCCAG 6360
Query 6361	GAACGGCCCACCAGCGCCAGGTGTTGATATCCTGAACAGCGCCGAGCTGTGCTGCCTG 6420
Sbjct 6361	GAACGGCCCACCAGCGCCAGGTGTTGATATCCTGAACAGCGCCGAGCTGTGCTGCCTG 6420
Query 6421	ACACGGCGGATTCTGCTGCCTAAGAATGTGATCGTGGATGCATGGTGGCCACACACCAC 6480
Sbjct 6421	ACACGGCGGATTCTGCTGCCTAAGAATGTGATCGTGGATGCATGGTGGCCACACACCAC 6480
Query 6481	AACAGCCGGAACGCCAGCATCTGGCTGGGATGCCACACCGATAGAGGCCAGCTGTCC 6540
Sbjct 6481	AACAGCCGGAACGCCAGCATCTGGCTGGGATGCCACACCGATAGAGGCCAGCTGTCC 6540
Query 6541	TTCCTGGACCTGAACACCGAGGGCTACACCAGCGAGGAAGTGGCCACTCCAGAACCTG 6600
Sbjct 6541	TTCCTGGACCTGAACACCGAGGGCTACACCAGCGAGGAAGTGGCCACTCCAGAACCTG 6600
Query 6601	TGTCTGGCACTGGTCATCTGCCGTGGAAAAAGAAAGCTGGATCGTGTCCGGCACCCAG 6660

Sbjct 6601	TGTCTGGCACTGGTGCATCTGCCCGTGAAAAAGAAAGCTGGATCGTGTCCGGCACCCAG 6660
Query 6661	AGCGGAACACTGCTCGTATCAACACCGAGGACGGCAAGAACGGCACACCCTGGAAAAG 6720
Sbjct 6661	AGCGGAACACTGCTCGTATCAACACCGAGGACGGCAAGAACGGCACACCCTGGAAAAG 6720
Query 6721	ATGACCGACAGCGTGACCTGCCGTACTGCAACTCCTCAGCAAGCAGAGCAAACAGAAA 6780
Sbjct 6721	ATGACCGACAGCGTGACCTGCCGTACTGCAACTCCTCAGCAAGCAGAGCAAACAGAAA 6780
Query 6781	AATTCCTGCTCGTGGCACCGCCAGGGCAAGCTGGCATCTTGAGGACAAGACCGTG 6840
Sbjct 6781	AATTCCTGCTCGTGGCACCGCCAGGGCAAGCTGGCATCTTGAGGACAAGACCGTG 6840
Query 6841	AAACTGAAGGGCGCTGCCCTCTGAAGATCCTGAACATCGAACGTGTCCACCCCCCTG 6900
Sbjct 6841	AAACTGAAGGGCGCTGCCCTCTGAAGATCCTGAACATCGAACGTGTCCACCCCCCTG 6900
Query 6901	ATGTGCCTGTCAGAGAGCACCAACAGCACCGAGAGAAACGTGATGTGGGCGGTGCGGC 6960
Sbjct 6901	ATGTGCCTGTCAGAGAGCACCAACAGCACCGAGAGAAACGTGATGTGGGCGGTGCGGC 6960
Query 6961	ACCAAGATTTCAGCTTCAGCAACGACTTCACCATCCAGAAGCTGATTGAGACACGGACC 7020
Sbjct 6961	ACCAAGATTTCAGCTTCAGCAACGACTTCACCATCCAGAAGCTGATTGAGACACGGACC 7020
Query 7021	TCCCAGCTGTTCTCCTACGCCCTTCAGCGACTCCAACATCATCACCGTGGTGGAT 7080
Sbjct 7021	TCCCAGCTGTTCTCCTACGCCCTTCAGCGACTCCAACATCATCACCGTGGTGGAT 7080
Query 7081	ACCGCCCTGTATATGCCAACGAGAACTCTCCAGTGGTGGAAAGTGTGGACAAGAAAACC 7140
Sbjct 7081	ACCGCCCTGTATATGCCAACGAGAACTCTCCAGTGGTGGAAAGTGTGGACAAGAAAACC 7140
Query 7141	GAGAAGCTGTGGACTGATCGACTGTGTGCATTCCTGAGAGAAAGTGACAGTGAAAGAG 7200
Sbjct 7141	GAGAAGCTGTGGACTGATCGACTGTGTGCATTCCTGAGAGAAAGTGACAGTGAAAGAG 7200
Query 7201	AACAAAGAAAGCAAGCACAAGATGTCCTACTCTGGCCCGTGAAAACACTGTGCCTGCAG 7260
Sbjct 7201	AACAAAGAAAGCAAGCACAAGATGTCCTACTCTGGCCCGTGAAAACACTGTGCCTGCAG 7260
Query 7261	AAAAACACAGCCCTGTGGATCGCACCGGCGGAGGACACATTCTGCTGCTGGATCTGTCC 7320
Sbjct 7261	AAAAACACAGCCCTGTGGATCGCACCGGCGGAGGACACATTCTGCTGCTGGATCTGTCC 7320
Query 7321	ACCCGCAGACTGATCAGAGTATCAACTTCTGCAATTCCGTCCCGTGATGACAGTGACA 7380
Sbjct 7321	ACCCGCAGACTGATCAGAGTATCAACTTCTGCAATTCCGTCCCGTGATGACAGTGACA 7380
Query 7381	GCACAGCTGGGAGCCTGAAAAATGTGATGCTGGTCTGGCTACAACCGCAAGAATACC 7440
Sbjct 7381	GCACAGCTGGGAGCCTGAAAAATGTGATGCTGGTCTGGCTACAACCGCAAGAATACC 7440
Query 7441	GAGGGAACCCAGAAGCAGAAAGAAATTCAAGAGCTGCCTGACTGTGTGGATATCAACCTG 7500

Sbjct 7441 GAGGGAAACCCAGAAGCAGAAAGAAATTCAAGAGCTGCCTGACTGTGGGATATCAACCTG 7500

Query 7501 CCACACGAAGTGCAGAACCTGGAAAAGCACATCGAAGTGCAGAAAGAACTGGCCGAGAAG 7560

Sbjct 7501 CCACACGAAGTGCAGAACCTGGAAAAGCACATCGAAGTGCAGAAAGAACTGGCCGAGAAG 7560

Query 7561 ATGCGGAGAACCGAGCGTGGATGA 7584

Sbjct 7561 ATGCGGAGAACCGAGCGTGGATGA 7584
