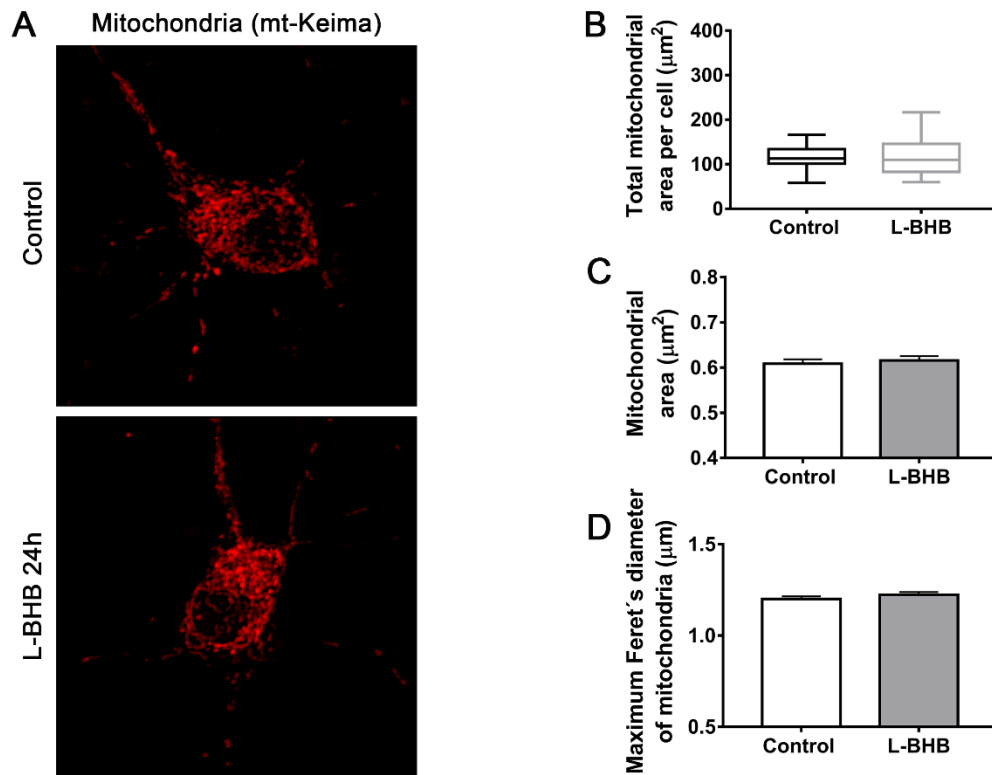
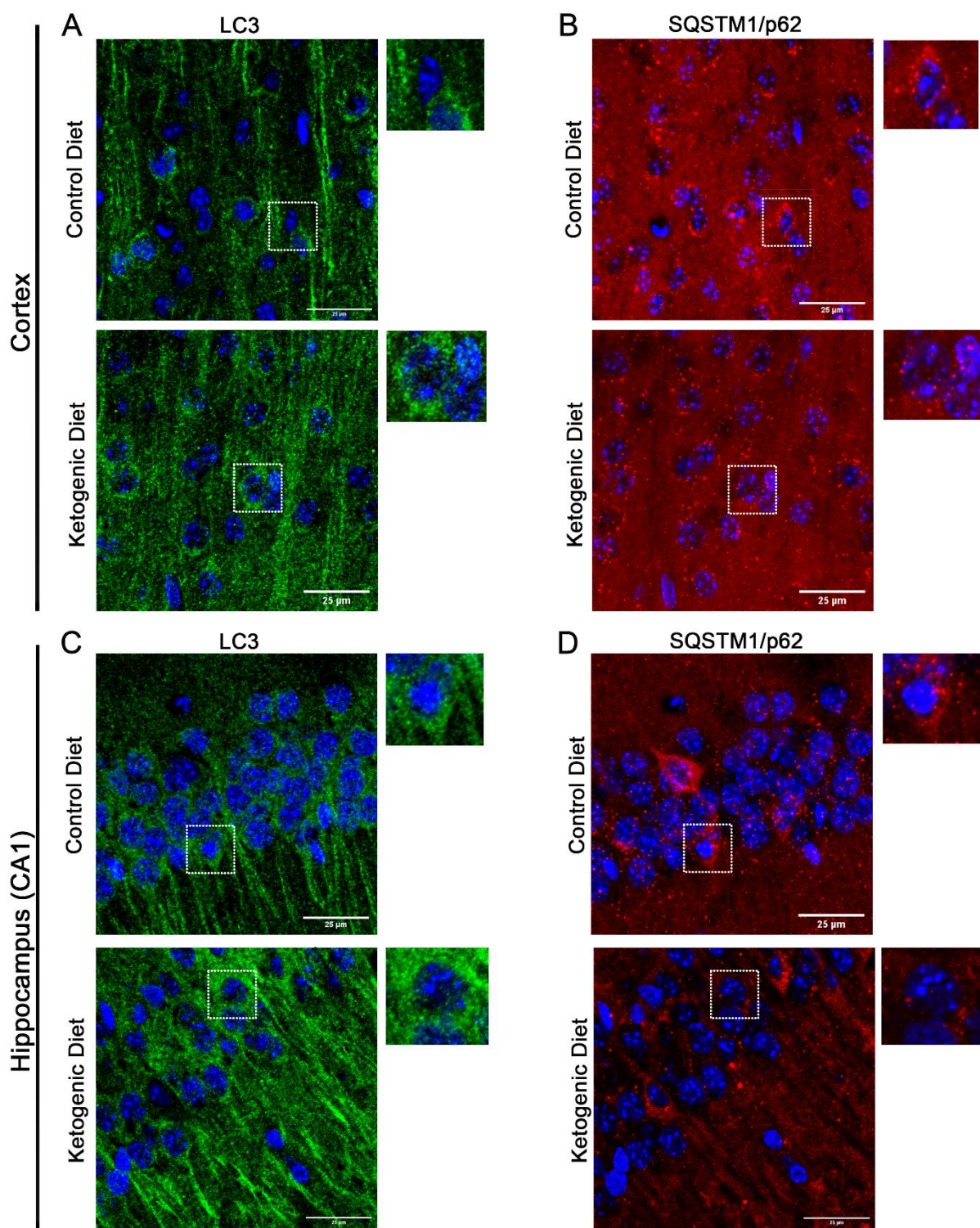


Supplementary Table S1. List of primers.

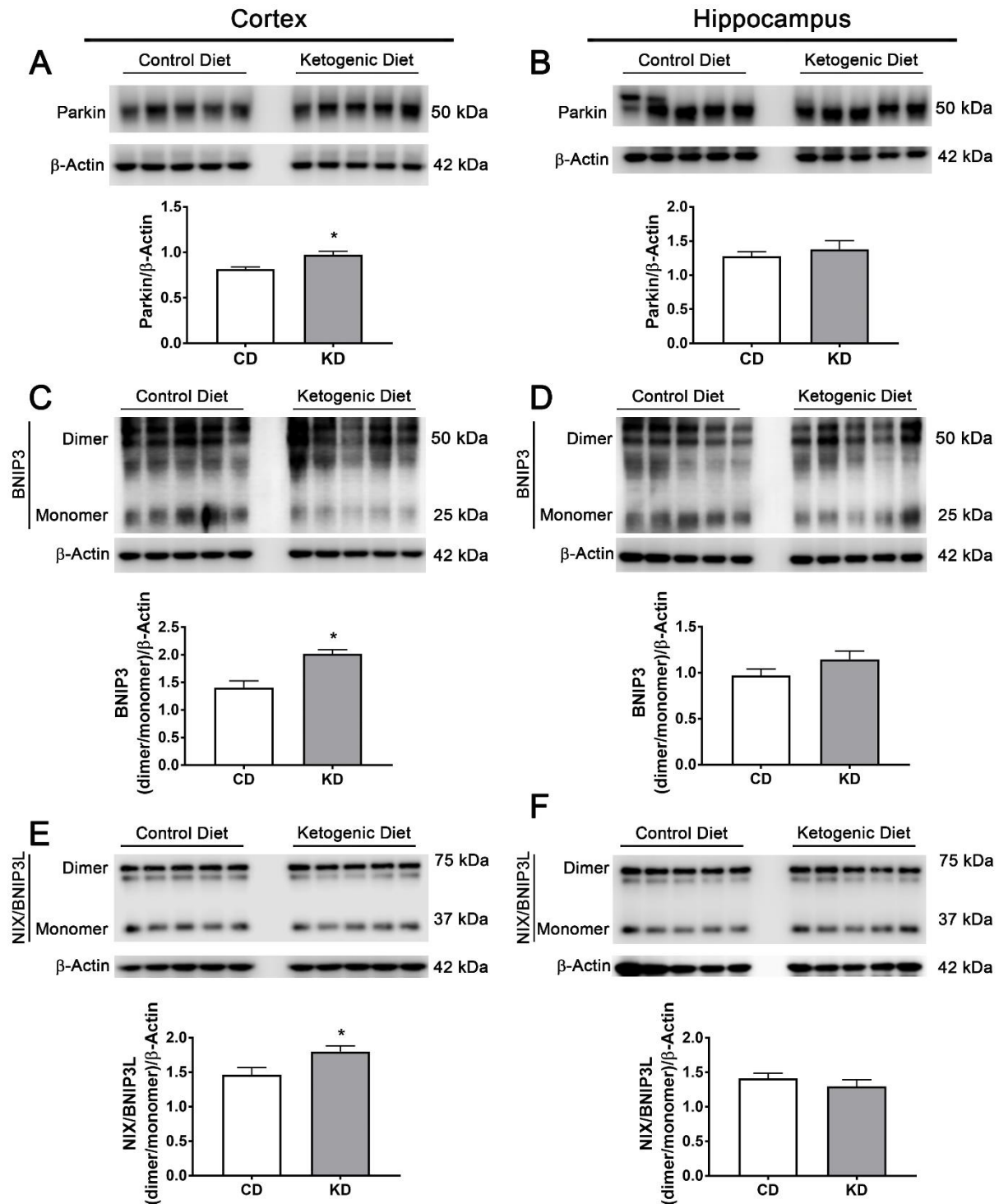
Gen	# of NCBI reference	Primers 5'-3' (forward and reverse)
<i>Lamp1</i>	NM_012857.2	CCACGTTTCAGCACCTCCA GACCCAAACCTGTCACCTTCTAC
<i>Lamp2</i>	XM_006257486.4	AGCCCAATGCCTAACACATC CTGCCCTCCCAATAACAAGA
<i>Ctsb</i>	NM_022597.2	AGGCTGGACGCAACTTCTAC ACTGTTCCCGTGCATCAAA
<i>Ctsd</i>	NM_134334.3	CCTGGGCGATGTCTTTATTG GCAAAGCCGACCCTATT
<i>Atg5</i>	NM_001014250.2	ATATGAAGGCACACCCCTGA GTGAGCCTCAACTGCATCCT
<i>Rab7</i>	NM_023950.4	GGCCTTCTACAGAGGTGCAG TCTTTGTGGCCACTTGTCTG
<i>Map1lc3a</i>	NM_199500.2	GACCGGCCTTTCAAGCAG CCTTGTAGCGCTCGATGAT
<i>Sqstm1</i>	NM_175843.5	CGCTTCAGCTTCTGCTTCAG GGCCATTGTCAGTTCCTCAT
<i>Pgc1α</i>	NM_031347.1	GTGCAGCCAAGACTCTGTATGG GTCCAGGTCATTACATCAAGTTC
<i>Tfam</i>	NM_031326.2	GAAAGCACAAATCAAGAGGAG CTGCTTTTCATCATGAGACAG
<i>Tuba1a</i>	NM_022298.1	GATCTGATGTATGCCAAGCG TCCACAGAATCCACACCAAC



Supplementary Figure S1. Effect of L-BHB on mitochondrial morphology. **A)** Representative micrographs of neurons transfected with mkeima-red-mito (mt-keima) and treated and no-treated with 5 mM L-BHB for 24 h. **B)** Quantification of total mitochondrial area per cell, **C)** individual mitochondrial area and **D)** maximum Feret's diameter of mitochondria. Box-plot data (**B**) are expressed as median (line), 25th and 75th percentiles (bound of box), minimum and maximum values (whiskers) from 23 cells of 3 independent experiments. Data of **C** and **D** are expressed as Mean \pm SEM from 3 independent experiments and were analyzed by one-way ANOVA followed by Fisher's post-hoc test. Data of **B** were analyzed by Kruskal-Wallis test followed by Dunn's post hoc test.



Supplementary Figure S2. Changes in autophagy markers in the brain of mice treated with control diet or ketogenic diet. Representative immunofluorescence of LC3 (A, C) and SQSTM1/p62 (B, D) in the cortex (A, B) and the hippocampus (C, D) of mice treated for 2 weeks with control diet (CD) or ketogenic diet (KD).



Supplementary Figure S3. Changes in mitophagy markers in the brain of mice treated with control diet or ketogenic diet. Representative Western blot and quantification of A and B) Parkin/ β -actin, C and D) BNIP3 (dimer/monomer)/ β -actin and E and F) NIX/BNIP3L (dimer/monomer)/ β -actin in the cortex (A, C, E) and the hippocampus (B, D, F) of mice treated for 2 weeks with control diet (CD) or ketogenic diet (KD). Data are expressed as Mean \pm SEM from 5 individuals per group. Data were analyzed by Student's *t*-test. **p*<0.05 vs control diet.