Figure S1. Effect of Dex on BAT in male and female neonatal rats. (A) Body weight. (B) BAT weight. (C) BAT/body weight ratio. Numbers of rats in each group were indicated within bars. Data were expressed as mean ± SEM with statistics analyzed by student’s t-test (**p < 0.001).
Figure S2. Effect of Dex on total UCP1 protein. Total UCP1 protein levels was obtained from the data of quantified immunoblots (that yield the level of UCP1 protein per mg tissue protein) multiplied by the total protein content in the tissue. Con, n = 3; Dex, n = 3. Data were expressed as mean ± SEM with statistics analyzed by student’s t-test (**p < 0.001).
Figure S3. Effect of Dex on BAT mitochondrial biogenesis and electron transport chain. Expression of (A) mitochondrial biogenesis-related genes (n = 12) and (B) mitochondrial electron transport chain components (n = 10). mRNA levels were expressed relative to average expression in the control rats. Data were expressed as mean ± SEM with statistics analyzed by student’s t-test (*p < 0.05 and **p < 0.001).
Figure S4. Effect of Dex on BAT mitophagy. (A) Immunofluorescence image of colocalization of mitochondrial fission factor (MFF) (mitochondrial marker) and LC3. Scale bar: 5 μm. Intensity profile was calculated by ImageJ software. (B) Quantitative analysis. Data were expressed as mean ± SEM with statistics analyzed by one-way ANOVA (**p < 0.001).
Figure S5. Effect of Dex on BAT autophagy and co-treatment with CQ. (A) Original pictures with gross morphology in upper panels and H&E stain in lower panels in two sets of CQ co-treatment experiments. (B) Evaluation of body temperature with CQ by infrared thermo-imaging before the beginning of cold challenge (RT). Con, n = 4; Con + CQ, n = 4; Dex, n = 4; Dex + CQ, n = 5.
Figure S6. Daily temperature fluctuation during systemic corticosteroid treatment (treatment group) or treatment-naive controls (control group) at equivalent postnatal age. (A) Diurnal temperature variation. Expressed as box-plot showing median, 25th and 75th percentile, min and max values and calculated by Mann-Whitney U test (*p < 0.05). (B) Example of raw temperature records starting 3 days before corticosteroid treatment (or equivalent postnatal age in control) until 3 days after treatment ended in one case and two gestational age- and sex-matched controls. Temperature records during corticosteroid treatment were indicated as “medication period” and expressed as the scatter plot of each temperature record per day. Temperature records were incomplete after the medication period in controls because the patients were discharged from the hospital.
| Genes     | Forward               | Reverse               |
|-----------|-----------------------|-----------------------|
| Ucp1      | CATCATCAACTGTACAGAGAC| ATCTCGTTTTTACCACTCC  |
| Prdm16    | ATCTACAGCGAGGGTGAAAGGC| TCTCCGTACTGTTTCTATG  |
| Cidea     | GAATTTACAGCAAGACTCTG| ATCATGAAGTGTTGTTGTC  |
| Atrx      | CAACAGGTCCATAGGCTATG| CACTCTGAGCAAGATCAAG  |
| Atf2      | CCTCTGTGTGAGAACAACCT| CACATTGGAAACCTGTAATG |
| Cebp      | AAGACGCAATAAACGAGAT| GCTAATTACATGTGCACTC  |
| Cebpβ     | AATCACTTAAGATGTCTCG| AAAATACTCTACTATTGCTC  |
| Cebpδ     | AATGGTAGGTCTTTACG| AAATCTGTCGCCAAAAGTC  |
| Pparcg1α  | AGGTGTACAGCTATGAGAG| GTCTGAGTGCTTTTATACC  |
| Fasn      | TATTGGTCTCTGCAGACCTG| GCTGGCAGACGTCTCTTAG  |
| Acaca/ACC | GCCTCTTCTGACAAACGAG| GAACTGCCCCAACATCTGCT |
| Mxi/p/Chrebp| CGGGAGACTTTGTGATGACTATGTC| CATCCACATTGAAAGATCAAATAA |
| Nr1h3/LXRA| AGAGAGTTCAGATTCAAAAA| CTCTCTTCTGCGCCCTGGTTT |
| Srebfi    | CTTCCAGCCCTCAGATA| TGTGACTGCTCCAGTGAGA  |
| Leptin    | TACTGCTGTCGCTGAACGAAA| TGAAGCCGAAATGAAGTC  |
| Fabp4     | CCGCCGATTTCTCCAAAACT| GCCATCTAGGGTTATGAGC  |
| Elovie    | ACAATGAGCCGTCTGAGAACAA| GTTACTGATGCAGGAAAGTACG |
| Acsfl     | CTTCCTCTGCTGTTGGTGCA| AAGCTGCGCTCCTCTTTTCT |
| Cpt1α     | TGCACTACGGAGAGCAGAA| GGAACACTCCATGCTCAG  |
| Cpt1b     | TATTAAGAACAGAGCCAA| GTAGCAAGTCTGCTTTTCT |
| Cpt2      | GACCCAAAGAGAGCCGATG| GCAAGCTATCCGACTCTGCT |
| Acadl/LCAD| ATGGCAAAATACTGCGCATCTG| TGTCTTGCGATCAGCTTTCCA |
| Acadm/MCAD| GAGTGCTAAGGAATGTTG| AGAAAAGCAACTCCTTTGCGT |
| Ppara     | ATGCCCTAGAAGCTGCTGACA| GCAACTTTCAATGAGCTGA  |
| Tfmα      | GCCTTGGAAAACAAAAAGAC| CCCAAGCTTCACTTCATGTT |
| Esrα      | ATGGATGTGAGATCACCAGGC| CGCCCAGTCTGATCTGCTG |
| Ssbp1     | CCAGGAGAACTGAGCAAGATAC| TAGTCCACTTTGTCGTCACAATA |
| Polg2     | ACAGTCCTCTGAGTTTGAGTT| ACACCTCAATGCGCAAGGC |
| Nd1       | CACCCCTTATACACCTCAA| ATTTGTTCTGCGAGGTTGAT |
| Nd2       | AACCCAAAGCTACAGCCTCAA| GAATGTCGAGAAATGGTGT |
| Nd3       | TAAACTACACTTTCTCTATTCC| GCCAGTTGCTATTATGTGATG |
| Nd4       | TCCCCCTCTAAATTGCTCT| GAGGATGATGAAATGGTAGG |
| Nd41      | CTCCAAACTTACATCCTTACC| GCCTAAACACTGCTGGCTATC |
| Nd5       | ATCGGAGCCATCAACAGCT| GCAGTTATGAGTGGCGATT |
| Nd6       | AGCCGCTACATCTTATATG| CACCCAGGGCAACATAC |
| Cytb      | GGAGTTCCAAGATGCCTCG| CCACAAACATCACCAGCCTAG |
| mt-Cox1   | TCACAGTGGGGGGCCATACA| GGTCTGCTGCTATGCTATT |
| mt-Cox2   | GCTCTAAGGAGCCACATCACC| CGTAGGAGGAAGGCAAT |
| mt-Cox3   | TTCTTCTGTCGAGTTTTC| ATGGTTTGCGTCTGTCTCTA |
| mt-Atp6   | CGAACCTGAGCGCTTATA| GTAGCTCTCCAGATTAGA |
| mt-Atp8   | TGCCCAACTAGACACATCCA| TGTGGGGAATGAAAGAGG |
| Antigen                          | Host | Cat.       | Source     |
|---------------------------------|------|------------|------------|
| UCP1                            | Rabbit | ab209483  | Abcam      |
| PPARγ                           | Rabbit | #2443     | Cell Signaling |
| PGC-1                           | Mouse  | AB3242     | Millipore  |
| TRα/β                           | Rabbit | sc-772     | Santa Cruz |
| DIO2                            | Rabbit | ab77779    | Abcam      |
| Phospho-p38 MAPK (Thr180/Tyr182) | Rabbit | #9211     | Cell Signaling |
| p38 MAPK                        | Rabbit | #9212     | Cell Signaling |
| Phospho-ATF-2 (Thr71)           | Rabbit | #9221     | Cell Signaling |
| ATF-2                           | Rabbit | GTX11908   | GeneTex    |
| Phospho-CREB (Ser133)           | Rabbit | #9191     | Cell Signaling |
| CREB                            | Rabbit | sc-186     | Santa Cruz |
| Phospho-HSL (Ser565)            | Rabbit | #4137     | Cell Signaling |
| Phospho-HSL (Ser660)            | Rabbit | #4126     | Cell Signaling |
| HSL                             | Rabbit | #4107     | Cell Signaling |
| PLA2                            | Rabbit | GTX103717 | GeneTex    |
| Mitofusin 1 (MFN1)              | Mouse  | Ab57602    | Abcam      |
| Mitofusin 2 (MFN2)              | Rabbit | M6444     | Sigma      |
| OPA1                            | Mouse  | 612607     | BD         |
| Phospho-DRP1 (Ser616)           | Rabbit | #3455     | Cell Signaling |
| Phospho-DRP1 (Ser637)           | Rabbit | #4867     | Cell Signaling |
| DLP1(DRP1)                      | Mouse  | 611113     | BD         |
| FIS1                            | Rabbit | AXL-201-1037 | ENZO  |
| MFF                             | Goat   | sc-168593  | Santa Cruz |
| Phospho-MFF (Ser146)            | Rabbit | #49281    | Cell Signaling |
| MID49 (SMCR7)                   | Mouse  | sc-515759  | Santa Cruz |
| MID51 (SMCR7L)                  | Mouse  | sc-514135  | Santa Cruz |
| Porin                           | Rabbit | PC548      | Merck      |
| ATG5                            | Rabbit | GTX113309  | GeneTex    |
| ATG7                            | Rabbit | GTX32459   | GeneTex    |
| BECN1                           | Rabbit | #3738      | Cell Signaling |
| LC3B                            | Rabbit | #3868      | Cell Signaling |
| p62                             | Rabbit | PM045      | MBL        |
| α-tubulin                       | Mouse  | SI-T5168   | Sigma      |
| β-actin                         | Mouse  | A5441      | Sigma      |
| GAPDH                           | Mouse  | MAB374     | Millipore  |