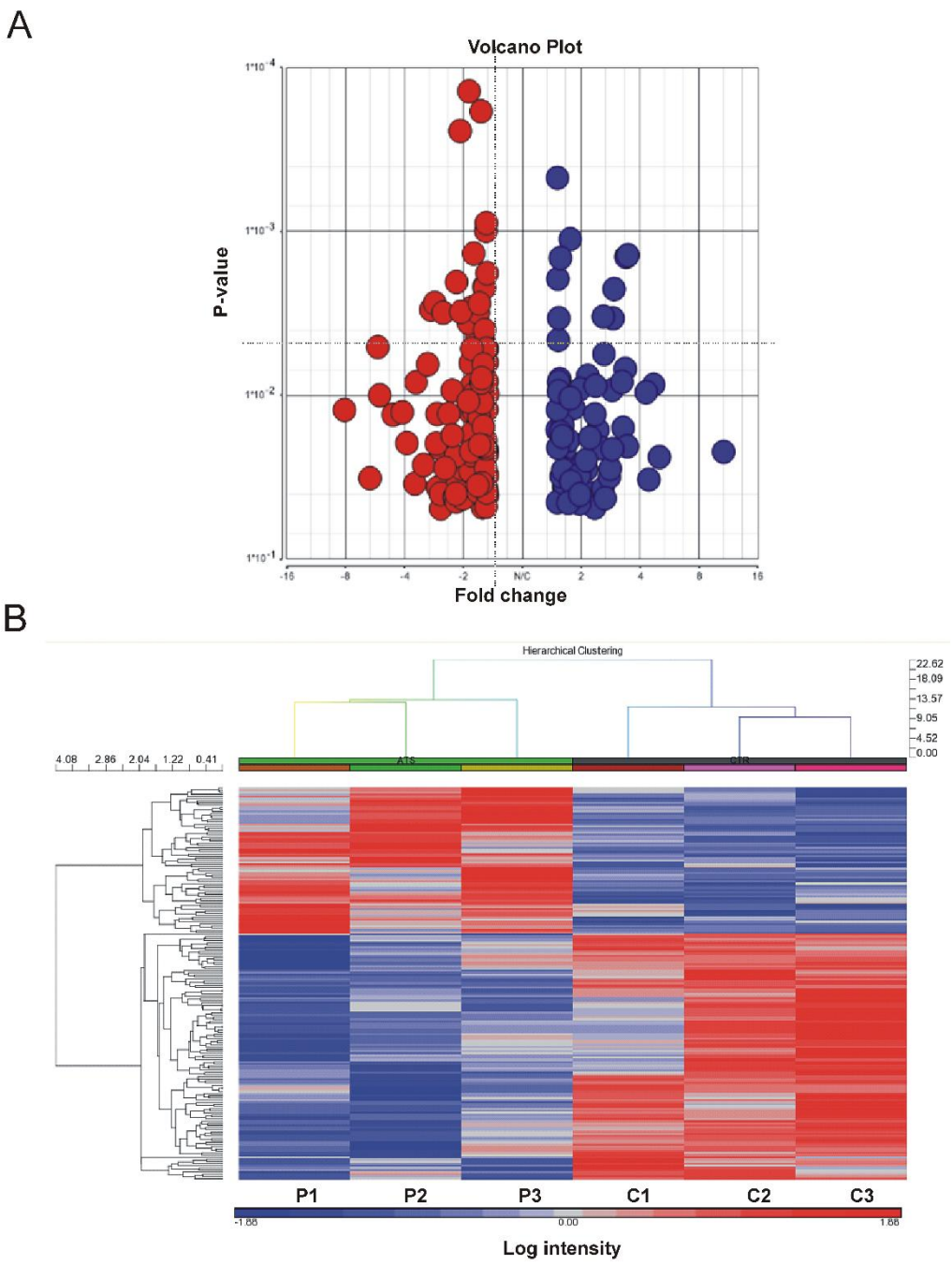
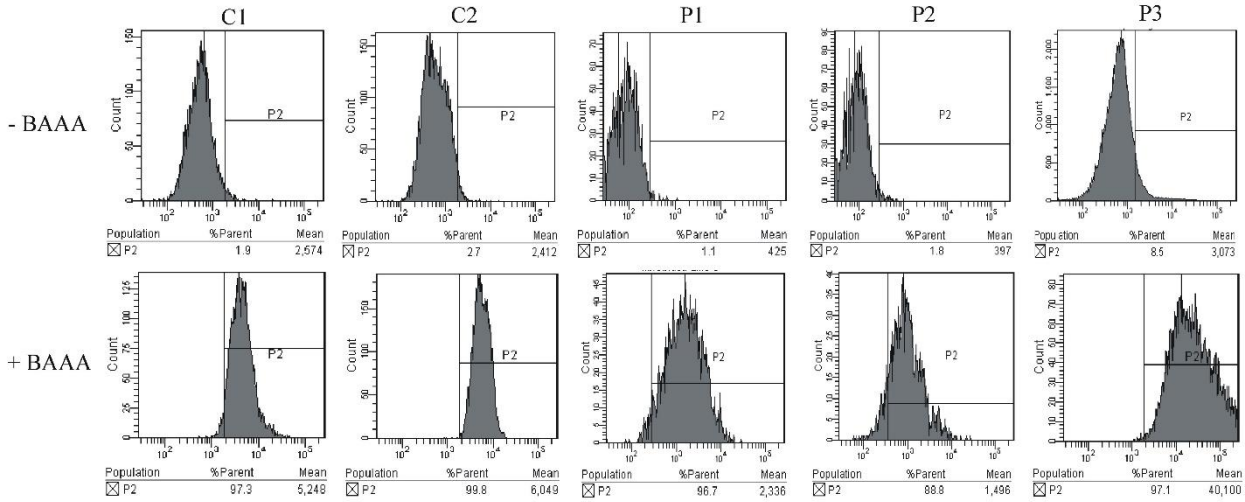
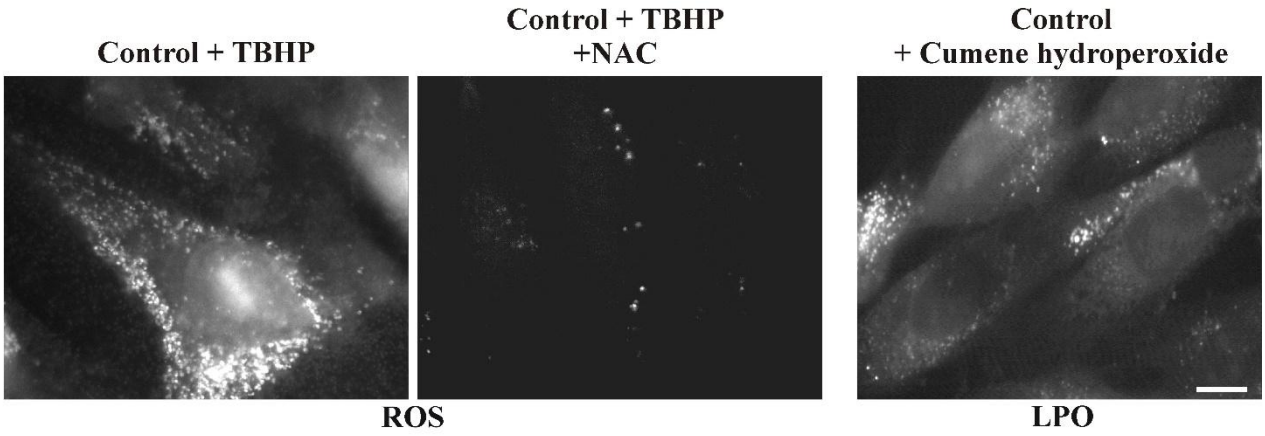


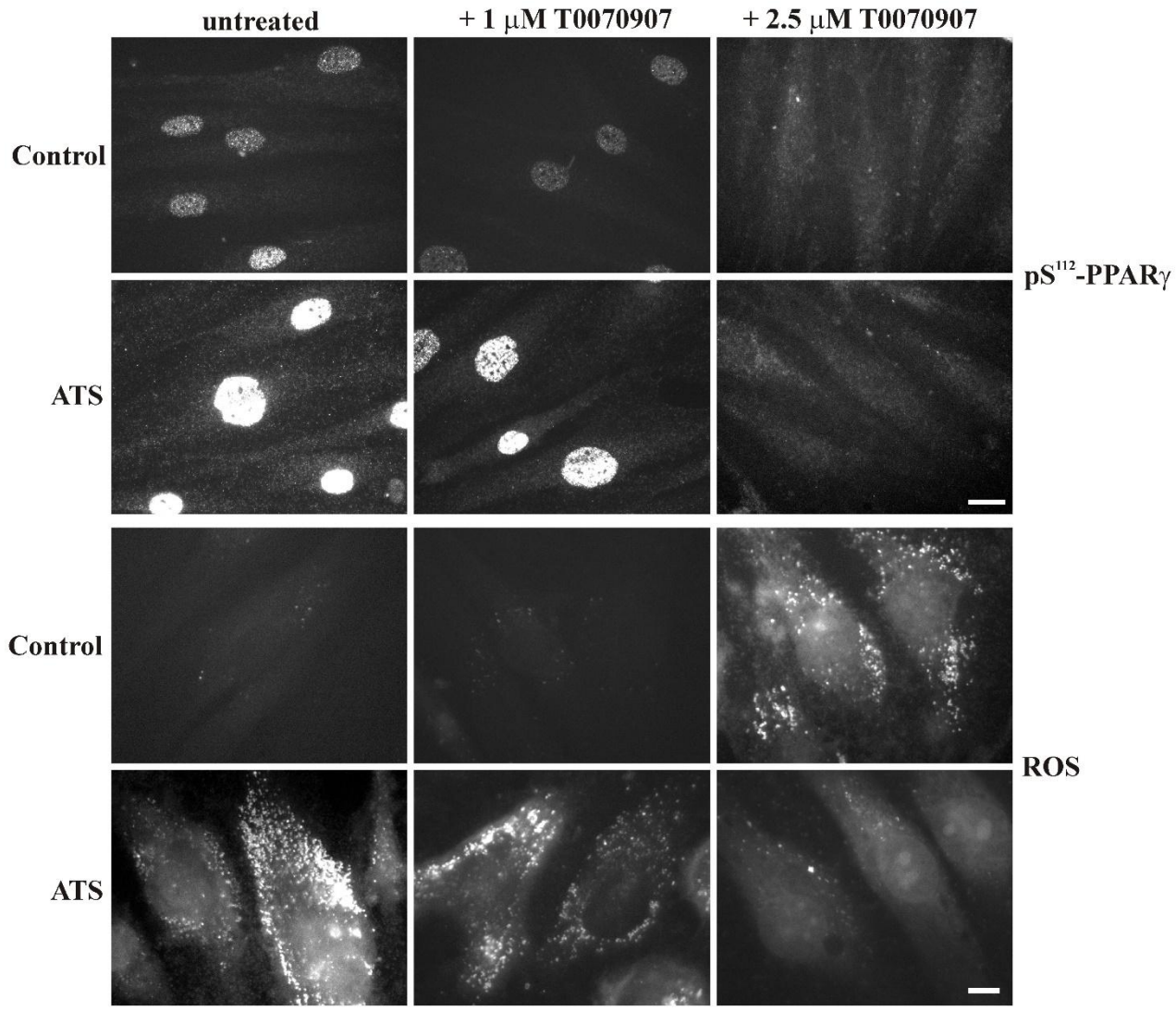
Supplementary Figure S1. Transcriptome-wide expression profiling of ATS fibroblasts. A) The volcano plot depicts all statistically significant DEGs identified in GLUT10-deficient cells. The fold-change of DEGs on the x-axis *vs* the statistical significance (P-value < 0.05) on the y-axis is shown; the up-regulated genes are reported in blue, and the down-regulated genes are in red. **B)** Hierarchical clustering of the 217 DEGs identified in patients' skin fibroblasts. Although fibroblasts from only 3 control subjects and 3 ATS patients were investigated, this analysis showed the presence of two distinct clusters of transcripts that clearly distinguish the patients from the controls, indicating that a remarkable low variability within each group is present, allowing for statistical significance in our findings. The red color represents high gene expression, and blue represents low gene expression. P: patient; C: control.



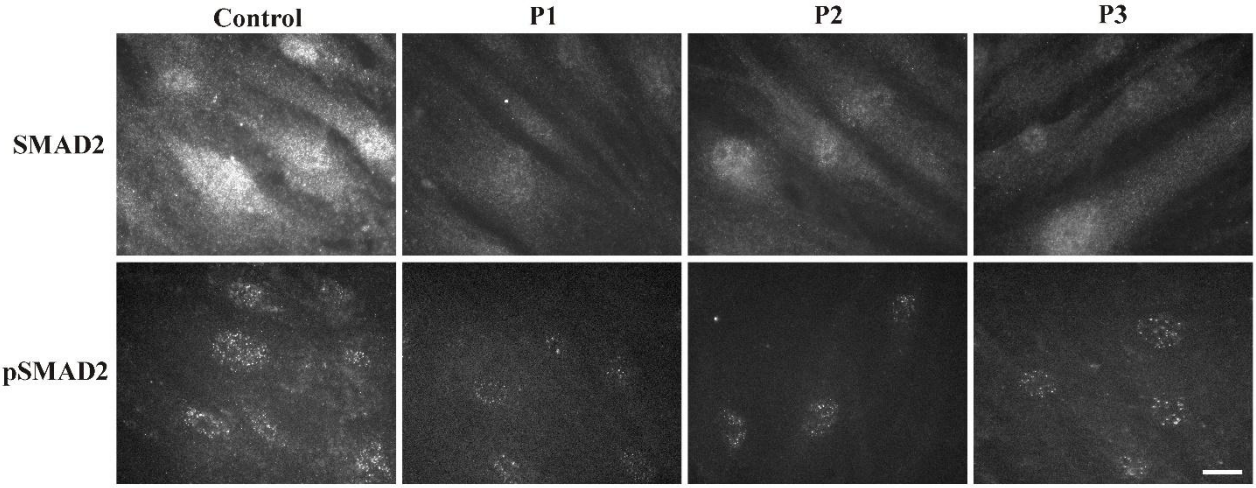
Supplementary Figure S2. Evaluation of ALDH activity in the control and ATS fibroblasts. FACscan analysis of ALDH activity in the two control (C1 and C2) and three ATS fibroblasts (P1, P2, and P3); the Bodipy-conjugated aminoacetate developed in BAAA-treated (+ BAAA) *vs* untreated (-BAAA) cells was used for the measurements. The experiments were repeated three times. Representative images are shown.



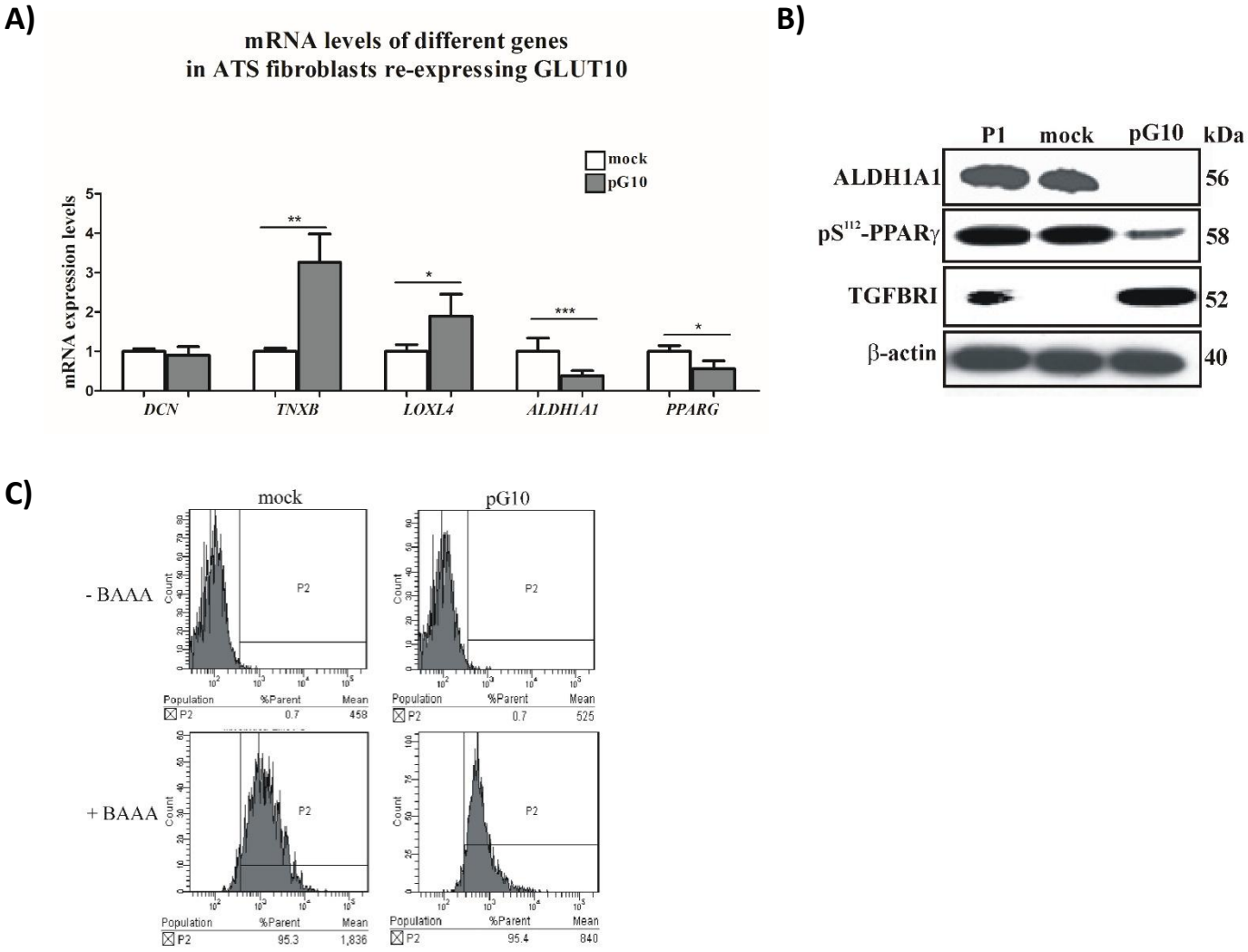
Supplementary Figure S3. Induction of ROS and LPO by pro-oxidant agents in control fibroblasts. Cells were treated with the pro-oxidant compounds TBHP, inducing the ROS production, or cumene hydroperoxide, inducing the LPO process, the latter was measured by standard protocol after the addition of the LAA substrate. As negative control of the ROS synthesis, a mixture of TBHP and antioxidant N-acetylcysteine (NAC) was used. Scale bar, 8 μm. The experiments were repeated three times. Representative images are shown.



Supplementary Figure S4. **The effect of PPARγ inhibition on ROS production in the control and ATS fibroblasts.** Microscopy analysis of pS^{112}-PPARγ, and ROS after PPARγ inhibition using the antagonist T0070907. The control and ATS cells were grown for 48 h, treated O.N. with 1 and 2.5 μM of T0070907 and tested for pS^{112}-PPARγ and for ROS levels. The experiments were repeated three times. The images are representative of two control and the three ATS cell strains. Scale bar, 8.8 μm for pS^{112}-PPARγ; 4.5 μm for ROS.



Supplementary Figure S5. In ATS fibroblasts the TGFβ signalling is SMAD2-independent. IF for SMAD2 and its phosphorylated form (pSMAD2) in control and ATS fibroblasts. Scale bar, 10 µm. The experiments were repeated three times. A representative image of the two control (C1 and C2) and three ATS cell strains (P1, P2, and P3) is shown.



Supplementary Figure S6. A) qPCR analysis of *DCN*, *TNXB*, *LOXL4*, *ALDH1A1* and *PPARG* in pG10 transfected ATS fibroblasts. The relative mRNA expression levels were determined with the $2^{-(\Delta\Delta Ct)}$ method and normalized with geometric mean of five housekeeping genes (*HPRT, GAPDH, CYC1, ATP5B,* and *RPLP0*). The bars represent the mean ratio of target gene expression in pG10- *vs* mock-transfected ATS fibroblasts. qPCR was performed in triplicate, and the data are expressed as mean ratio ± SEM. Statistical significance was determined using Student's t test (*p< 0.05, ** p<0.01, *** p<0.001) **B) Expression of ALDH1A1, pS^{112}-PPARγ and TGFBRI after stable expression of GLUT10.** WB of 50 µg of cell extracts from untransfected and mock- and pG10-transfected ATS fibroblasts immunoreacted with the anti-ALDH1A1 mAb and anti-pS^{112}-PPARγ Ab to detect bands at 56 and 58 kDa, respectively. WB of 50 µg of cell membrane-bound proteins extracted from untransfected and mock- and pG10-transfected ATS fibroblasts immunoreacted with the anti-TGFBRI Ab, detecting a 52 kDa band. Loading control: β-actin. **C**) **Evaluation of ALDH activity in transfected ATS fibroblasts.** FACscan analysis of ALDH activity in mock- and pG10-transfected ATS cells; the Bodipy-conjugated aminoacetate developed in BAAA-treated (+ BAAA) *vs* untreated (-BAAA) cells was used for the measurements. The experiments were repeated three times. Representative images are shown.