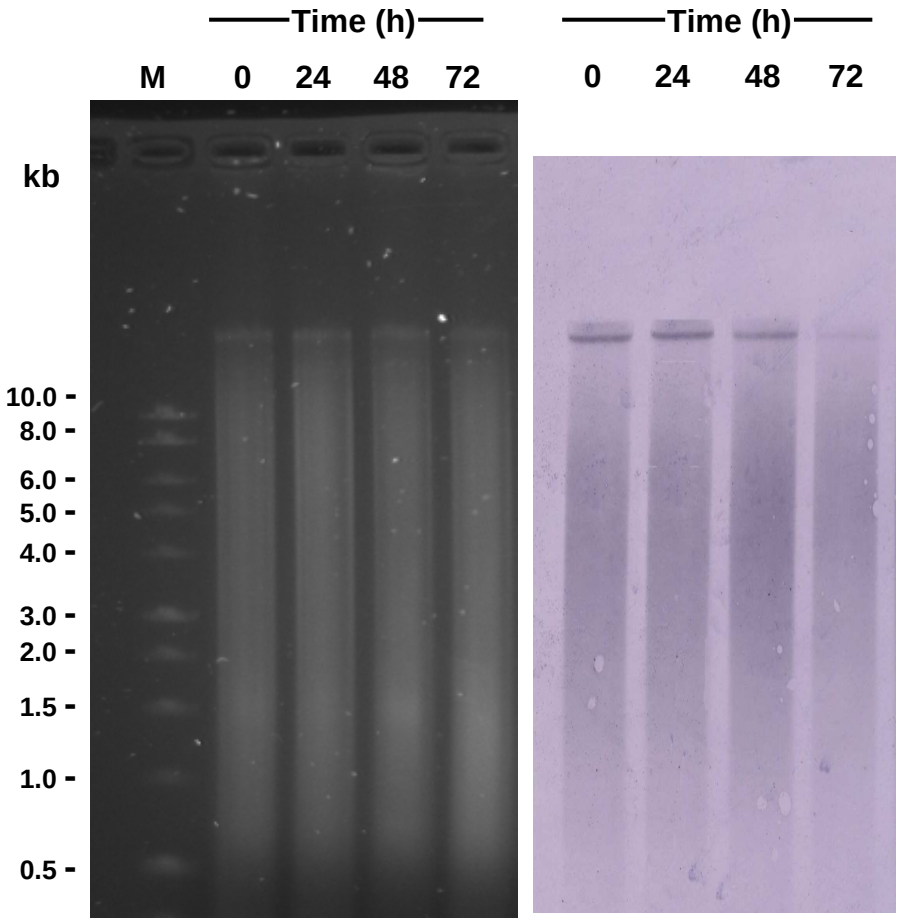
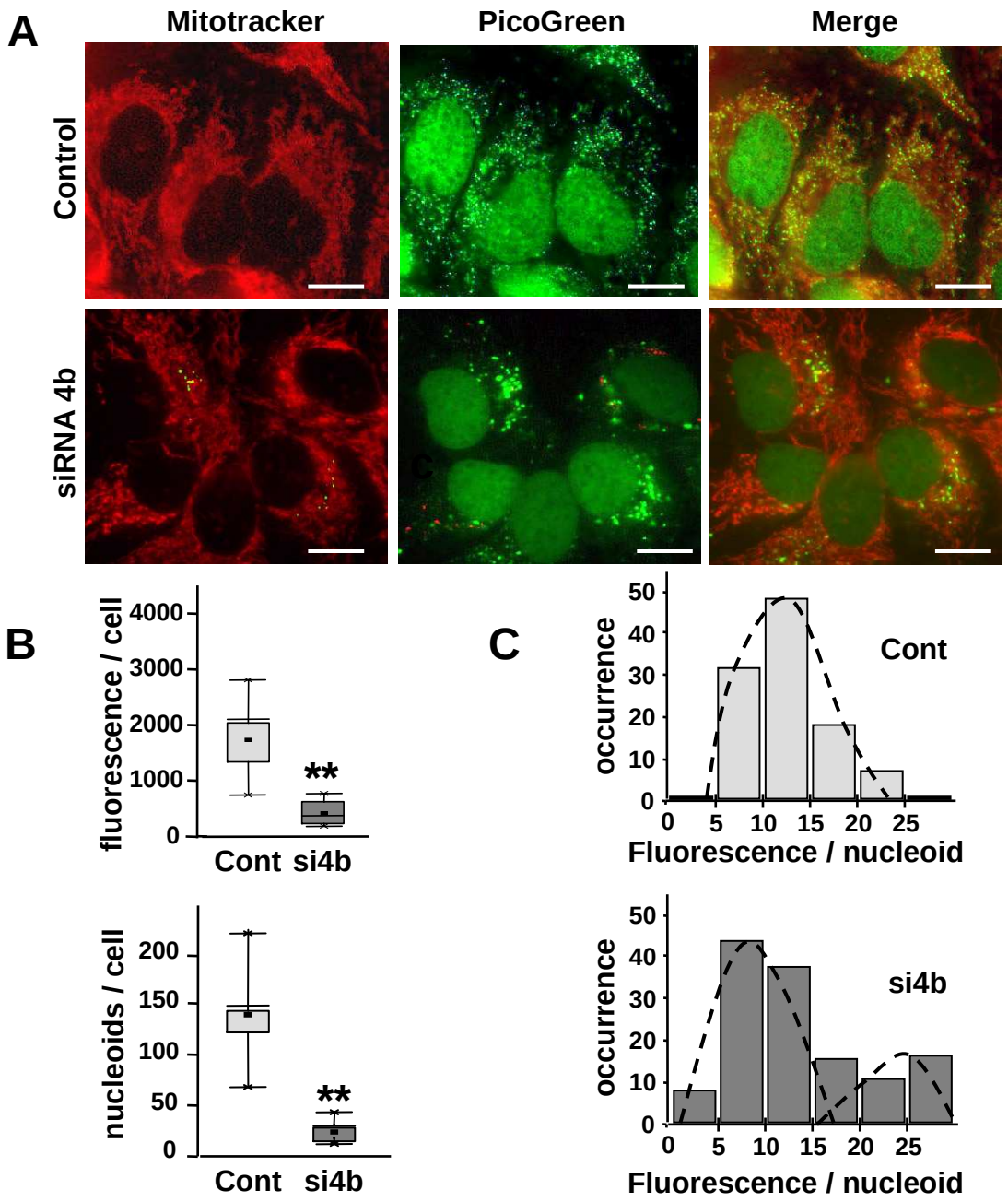


Legend: *Southern western blot of replicated DNA in exon4b silenced cells.*

Left: Total DNA was purified from cells transfected by the exon4b siRNA after 0, 24, 48 and 72 hours, then digested by Pvu2 and run on a 0.8% agarose gel together with a molecular marker (M)

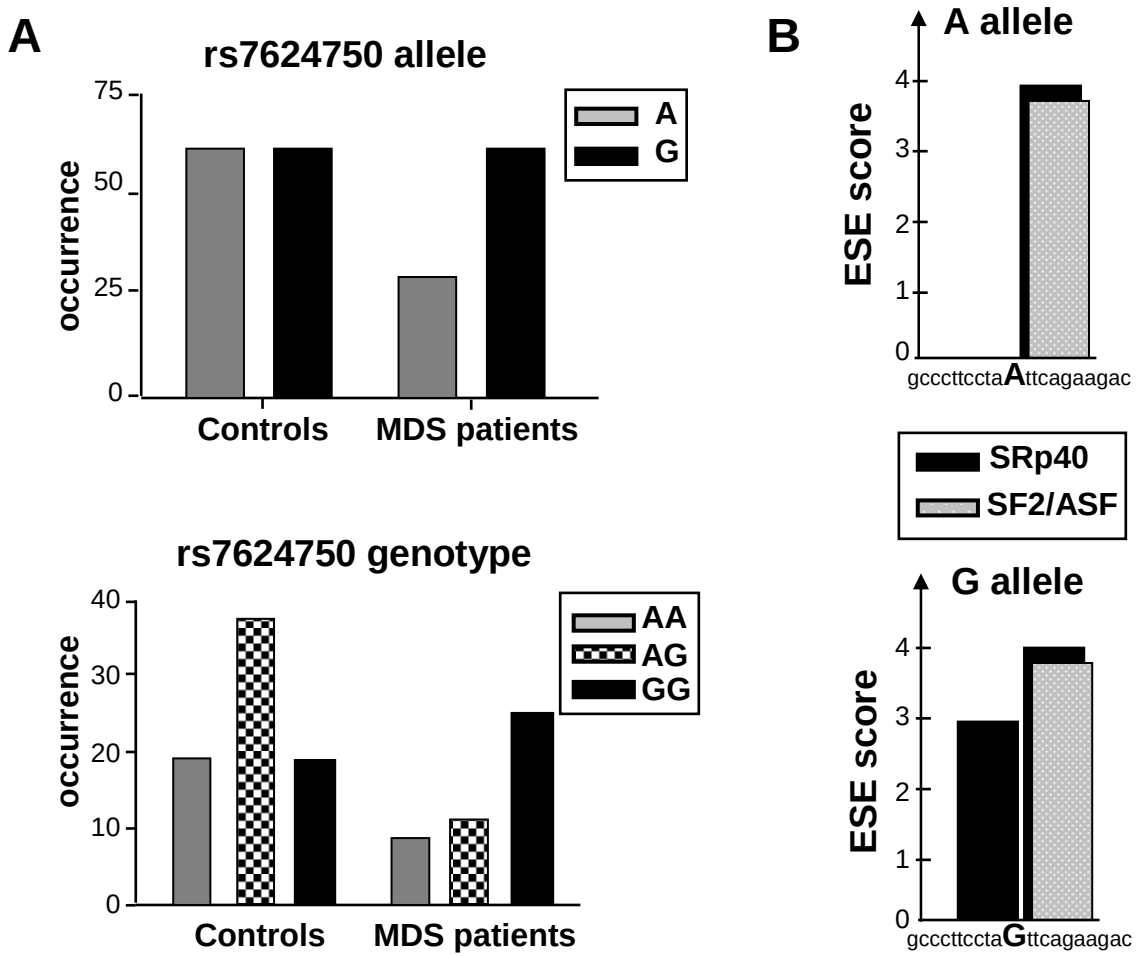
Right: After transfer on a nitrocellulose membrane, replicated DNA was revealed with an antiBrdU antibody.

Supplementary Figure 1



Legend: *Phenotype of HeLa cells silenced for OPA1-exon4b and stained with PicoGreen*.
HeLa cells were transfected with the exon4b siRNA (100nM), then after 72 hours, stained with the Pico-Green (3µl/ml, Invitrogen) and Mitotracker (100nM, Molecular Probes) dyes.
(A): Fluorescence images of control HeLa cells (top) and exon4b siRNA transfected cells (bottom).
(B): Quantifications of cytoplasmic PicoGreen fluorescence (top, relative units) and of the number of nucleoid per cell (bottom) in control (Cont) and exon4b siRNA transfected cells (si4b), disclose a decrease in mtDNA associated fluorescence (60%), and in the number of nucleoids (80%), in exon4b silenced cells. (n=15; Student t-test, ** denotes a P value inferior to 0.001)
(C): Distribution of the PicoGreen fluorescence per nucleoid (relative units) in control (Control, top) and exon4b siRNA transfected (si4b, bottom) cells (n=15).

Supplementary Figure 2



Legend: *OPA1 gene screening in Mitochondrial Depletion Syndromes*
A: Analyses of the rs7624750 allele (top) and genotype (bottom) occurrences in *OPA1* exon4 sequence from a cohort of 75 control DNAs (Controls) and from a cohort of 46 patients with mitochondrial depletion syndromes (MDS patients) illustrate the significant higher frequency of G allele (P-value= 0.0074) and GG genotype (P-value: 0,0029) in MDS patients (Statistics were performed using the chi-squared test).
B: Prediction of exon splicing enhancer motif (ESE score) in the sequence with the A allele (top) and with the G allele (bottom), reveals the presence of an additional SRp40 consensus sequence in the G allele.

Supplementary Figure 3