Effect of quercetin on cigarette smoke extract (CSE)- or H2O2-stimulated generation of intracellular reactive oxygen species (ROS) in differentiating orbital fibroblasts from normal tissue samples during adipogenesis.

Confluent fibroblasts from normal patients were subjected to a differentiation protocol that included adipogenic supplements for 10 days, and then further stimulated with 2% CSE or 10 µM H2O2 for the first three days of adipogenesis. To determine the suppressive effect of quercetin on adipogenesis, quercetin (100 µM) was also added during the first three days of differentiation. ROS were measured by flow cytometry using 5-(and 6)-carboxy-2',7'-dichlorodihydrofluorescein diacetate (H2DCFDA) on day 10 of adipogenesis. The results are expressed as percentages of the untreated control values, and presented as means ± SD. The assays were performed at least three times in triplicate with cells from three different normal samples, and expressed as the differences between the quercetin-treated and -untreated cells (*P < 0.01).