Molecular oxygen can act as a collisional quencher of the singlet excited state of chlorophyll $a$. This effect is well described for chlorophyll $a$ in various solvents but not for chlorophyll $a$ in the antenna complexes of photosynthetic organisms. We studied the chlorophyll fluorescence decay of *Chlorella vulgaris* cells under different oxygen concentrations but did not find any evidence for quenching by oxygen.