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**CAROTENOIDS LOCALISED IN THE CELL WALL
OF CHLORELLA AND SCENEDESMUS
(CHLOROPHYCEAE)***

**KAROTENOIDY ZLOKALIZOWANE W ŚCIANIE
KOMÓRKOWEJ GLONU CHLORELLA
I SCENEDESMUS (CHLOROPHYCEAE)****

Summary

Streszczenie

It has been found that *Chlorella fusca*, strain 211-8p and *Scenedesmus obliquus*, strain 633, capable of synthesising ketocarotenoids, produce rosy-fraise pigmented mother cell walls (CWM). The cell walls isolated from a homogenate (CWH) of green cells from these strains demonstrate a very similar pigmentation. These pigments have been identified as carotenoids. Their total concentration in *Chlorella* was CWM 167 ± 20 ; CWH 68 ± 3 $\mu\text{g/g}$ and in *Scenedesmus* CWM 166 ± 16 ; CWH 128 ± 5 $\mu\text{g/g}$ CW dry weight. The carotenoid composition of both types of cell wall CWH and CWM is very similar, both containing cantaxanthin, astaxanthin, a chemically unidentified ketocarotenoid and lutein. Ketocarotenoids are prevalent in the cell walls, making up some 80% of the total cell wall carotenoid content. The ketocarotenoids are but a small component in the carotenoid moiety of the whole cell. Echinenone was present in the cell walls of *Scenedesmus*, but not in *Chlorella*.

It is possible that the quantitative differences in the CWH and CWM carotenoid composition of these algae are due to CWM released into the nutrient solution coming into contact with air and light.

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The presence of carotenoids in the CWM, which have no internal cellulose and plasmolemma layer, confirms the supposition that they occur mainly in the outer, trilaminar layer of the complete CW, and that they are integral components of the cell walls of these algae.

The method of isolating CWH and CWM, as also the methods of identifying the carotenoids, are described in this paper. In addition, the literature dealing with algal cell wall pigments is reviewed.