Astaxanthin biosynthesis genes isolated from *Paracoccus* sp.

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Summary

Carotenoids have recently attracted greater attention, due to their beneficial effect on human health; the functions of lycopene and astaxanthin include strong quenching of singlet oxygen, involvement in cancer prevention, and enhancement of immune responses. Carotenoids such as beta-carotene, lycopene, and astaxanthin are yellow, orange, and red pigments that are widely distributed in nature.[1] Industrially, carotenoid pigments are utilized as food or feed supplements. Beta-carotene is also a precursor of vitamine A in mammals.[2] Especially, astaxanthin has also been exploited for industrial use, principally as an agent for pigmenting cultured fish and shellfish.

In this study, a carotenoid biosynthesis gene cluster involved in astaxanthin production was isolated from *Paracoccus* sp. strain. This gene cluster is composed of six genes identified as *crt W*, *crt Z*, *crtY*, *crtI*, *crtB* and *crtE*. The functions of these genes were evaluated by the method of chromatographic and spectroscopic analyses.

References

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