

There are many reports about carotenoid-producing bacteria and carotenoid biosynthesis genes. In databases for *Pseudomonas* genome sequences, there are genes homologous to carotenoid biosynthesis genes, but the function of these genes in *Pseudomonas* has not been elucidated. In this study, we cloned the carotenoid biosynthesis genes from a *Pseudomonas* sp. strain, named Akiakane, which was isolated from the excrement of the Autumn Darter dragonfly. Using an *Escherichia coli* functional expression system, we confirmed that the *idi*, *crtE*, *crtB*, *crtI*, and *crtY* gene products of the Akiakane strain show predictable catalytic activities. A cluster of six genes was also found, which was comparable to other carotenoid-producing bacteria that belong to the α -Proteobacteria or γ -Proteobacteria class.

The carotenoid biosynthesis genes of a *Pseudomonas* sp. strain Akiakane isolated from the excrement of the Autumn Darter, were isolated and analyzed.