

## Retinal production from $\beta$ -carotene by recombinant human $\beta$ -carotene 15,15'-monooxygenase

Yeong Su Kim, Su Jong Um, Deok-Kun Oh<sup>1</sup>

Department of Bioscience and Biotechnology, Sejong University,

Seoul 143-747, Korea

Tel: +82-2-3408-3767, Fax: +82-2-3408-3911

$\beta$ -Carotene 15,15'-monooxygenase, cleaves  $\beta$ -carotene into two molecules of retinal, catalyzes the first step in vitamin A synthesis.<sup>1)</sup> The  $\beta$ -carotene 15,15'-monooxygenase gene from human kidney adenocarcinoma was cloned into pET 15b plasmid and then expressed *Escherichia coli* BL21.<sup>2,3,4)</sup>  $\beta$ -carotene as a substrate was prepared by an emulsion method<sup>5)</sup> and incubated with the enzyme at 37°C for 30 min in 50mM tricine buffer(pH8.0) for the production of retinal as a product. We established the analytical method of the substrate and the product.  $\beta$ -Carotene and retinal were identified by HPLC with zobax sil column using N-hexane : tert-butyl methyl ether (97 : 3) as mobile phase with a flow rate of 2ml/min at 460nm and 371nm, respectively.

### Reference

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