Retinal production from β-carotene by recombinant human
β-carotene 15,15'-monooxygenase

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β-Carotene 15,15'-monooxygenase, cleaves β-carotene into two molecules of retinal, catalyzes the first step in vitamin A synthesis.\(^1\) The β-carotene 15,15'-monooxygenase gene from human kidney adenocarcinoma was cloned into pET 15b plasmid and then expressed \textit{Escherichia coli} BL21.\(^{2,3,4}\) β-carotene as a substrate was prepared by an emulsion method\(^5\) and incubated with the enzyme at 37°C for 30 min in 50mM tricine buffer (pH 8.0) for the production of retinal as a product. We established the analytical method of the substrate and the product. β-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
4. T. Michael, R., Susan, G., Todd, D., Shirley, Y., Barbara, W., Elisabeth, G., Francis,