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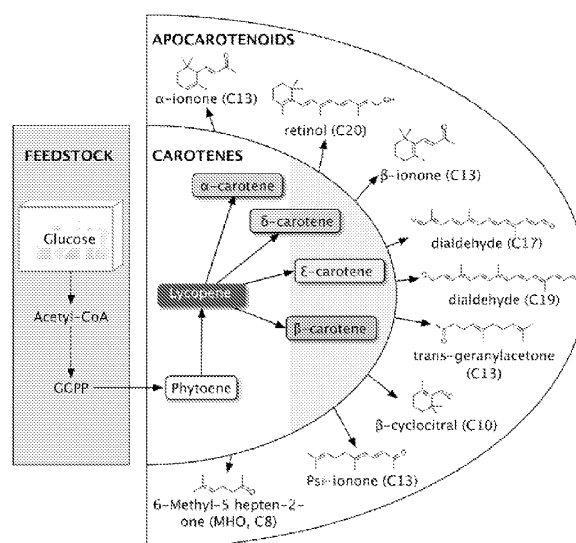
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(54) Title: PRODUCTION OF CAROTENOIDS AND APOCAROTENOIDS

FIG. 1



(57) Abstract: A method for producing a carotenoid and apocarotenoid is disclosed. The method comprises the step of expressing in a host cell an expression module comprising an expression vector having a coding region encoding at least one optimised carotenoid or apocarotenoid generating enzyme, the coding region being operably linked to a promoter. A host cell comprising an expression vector having a coding region encoding at least one optimised carotenoid or apocarotenoid generating enzyme, the coding region being operably linked to a promoter is also provided together with a kit. In particular, the carotenoid or apocarotenoid generating enzymes form an operon selected from: a. *AN50-LsLcyE* and *TrxA-Osmanthus fragrans CCD1* for the production of α -ionone; or b. *crtY* and *phCCD1* for the production of β -ionone; or c. *AN50-LsLcyE* for the production of γ -ionone; or d. *crtY* and *blh* for the production of retinal; or e. *crtY*, *blh* and *ybbO* for the production of retinol.

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