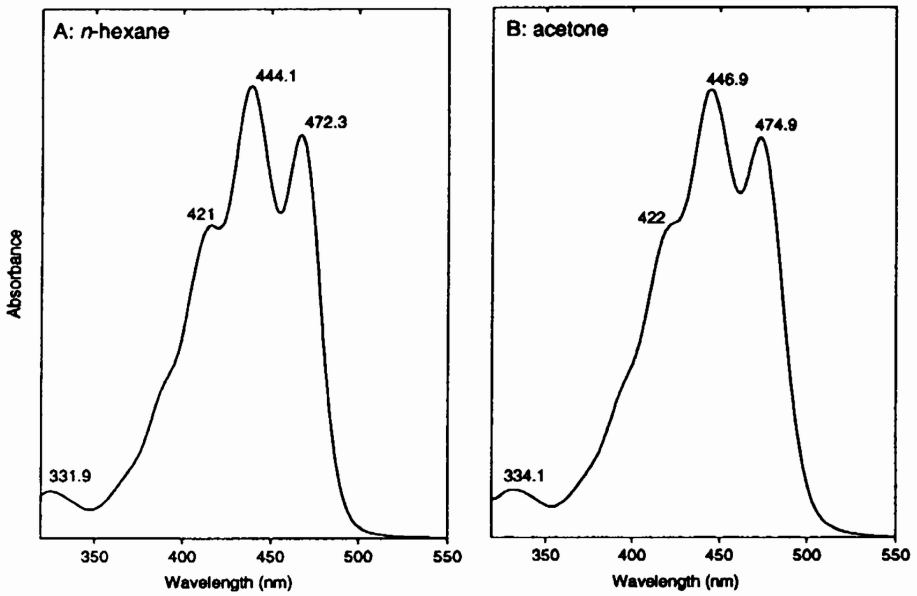
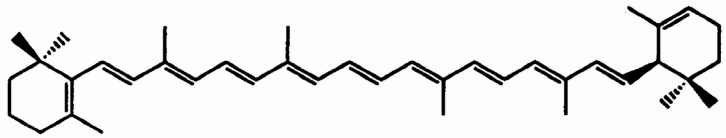
# β, ε-carotene

**HPLC peak 51**

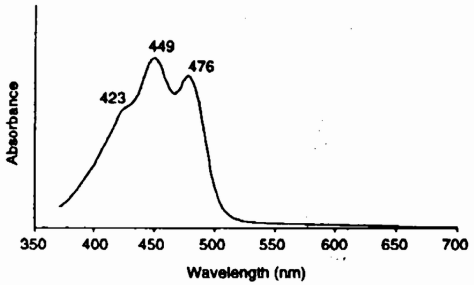
## Standard spectrum in reference solvents




## Molecular structure

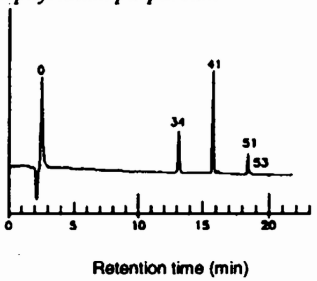


## Diode array spectrum in SCOR eluant




## HPLC: β, ε-carotene, peak 51

*Porphyridium purpureum*




# β,ε-Carotene

| Property | | Data |
|---|---|---|
| **Name:** | (Trivial) | **α-Carotene** |
| | (IUPAC) | (6'*R*)-β,ε-carotene |
| **SCOR abbreviation:** | | βε-car |
| **Occurrence:** | | Minor or trace pigment in green algae, cryptomonads, red algae |
| **Colour:** | | Yellow |
| **Molecular formula:** | | $C_{40}H_{56}$ |
| **Molecular weight:** | | 536.88 |
| **Specific extinction coefficient:** $E^{1\%}_{1\,cm}$ (100 ml $g^{-1}$ $cm^{-1}$) | | 2700 (at 448 nm in acetone) Hiyama *et al.* (1969)<br>2800 (at 444 nm in petroleum ether) Davies (1976) |
| **Molar extinction coefficient:** ε (l $mol^{-1}$ $cm^{-1}$) | | 145 x $10^3$ (at 448 nm in acetone)<br>150 x $10^3$ (at 444 nm in petroleum ether)<br>Calculated from $E^{1\%}_{1\,cm}$ above |

**UV-vis spectra:**

| Solvent | Maxima (nm) I | II | III | Band ratio %III:II | Reference |
|---|---|---|---|---|---|
| Acetone | 424 | 448 | 476 | | Hiyama *et al.* (1969) |
| Acetone | (422) | 447 | 475 | 53 | SCOR WG 78 data |
| Hexane | 421 | 444 | 472 | 62 | SCOR WG 78 data |
| Hexane | 420 | 442 | 472 | | Valadon & Mummery (1967) |
| HPLC Eluant | (423) | 447 | 474 | 58 | SCOR WG 78: Mantoura & Llewellyn (1983) method |
| HPLC Eluant | (423) | 449 | 476 | 47 | SCOR WG 78: Wright *et al.* (1991) method |

| | |
|---|---|
| **Alteration products:** | *Cis*-isomers |
| **Culture from which SCOR data were obtained:** | *Porphyridium purpureum* (red alga), *Chroomonas salina* (cryptomonad) |
| **Additional reference(s):** | Goodwin (1980) |