

FIG. 1

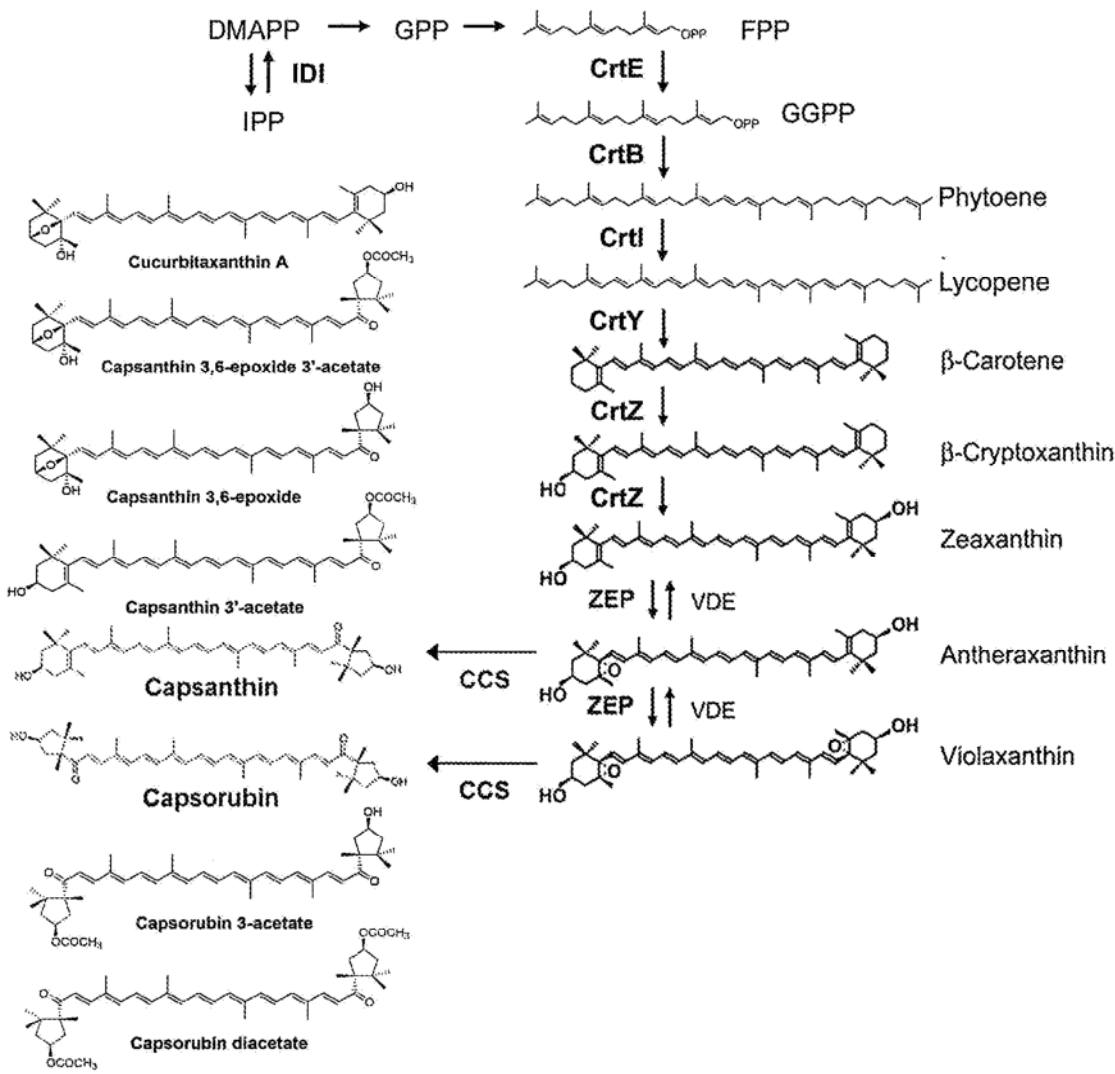
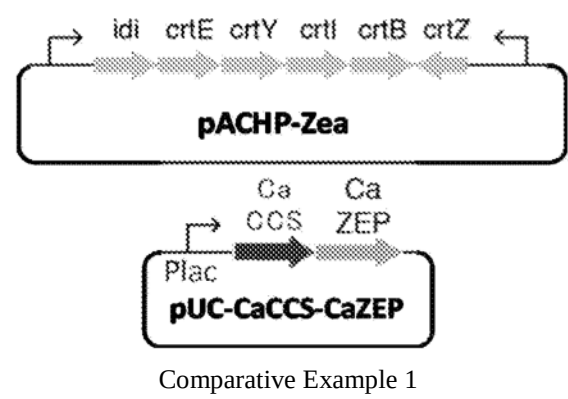


FIG. 2



The diagram illustrates the genetic constructs used in the study. At the top, the **pAC-HiEBIY-Z-CaZEP** plasmid is shown. It contains two **P_{tac}** promoters. The first promoter drives the expression of a gene cluster: **idi**, **crtE**, **crtB**, **crtI**, and **crtY**. The second promoter drives the expression of **crtZ** and **ZEP⁺**. A **Ca** label is positioned above the **ZEP⁺** gene. Below this, two comparative examples are shown, separated by the word "or".

- Comparative Example 2-1:** This construct features a **PBAD** promoter driving the expression of a **pUC-CaCCS** gene. Above the gene, the labels **Ca** and **CCS** are present, along with the coordinates **41-498** indicating a specific region of the gene.
- Comparative Example 2-2:** This construct features a **PBAD** promoter driving the expression of a **pUC-LI CCS** gene. Above the gene, the labels **LI** and **CCS** are present, along with the coordinates **41-498**.

pAC-HiEBIY-Z-CaZEP* (p15A, CmR)

Ca
Ptac → idi crtE crtB crtI crtY → Ptac → crtZ ZEP* →

Ca
CCS 41-496
Para →

Ca
CCS 22-474
Para →

Comparative Example 2-1

Comparative Example 2-2

Absorbance at 475 nm (Normalized)

Time (min)

1 Violaxanthin

2 Antheraxanthin

3 Zeaxanthin

4 β-carotene

Capsanthin

Example 1

FIG. 6

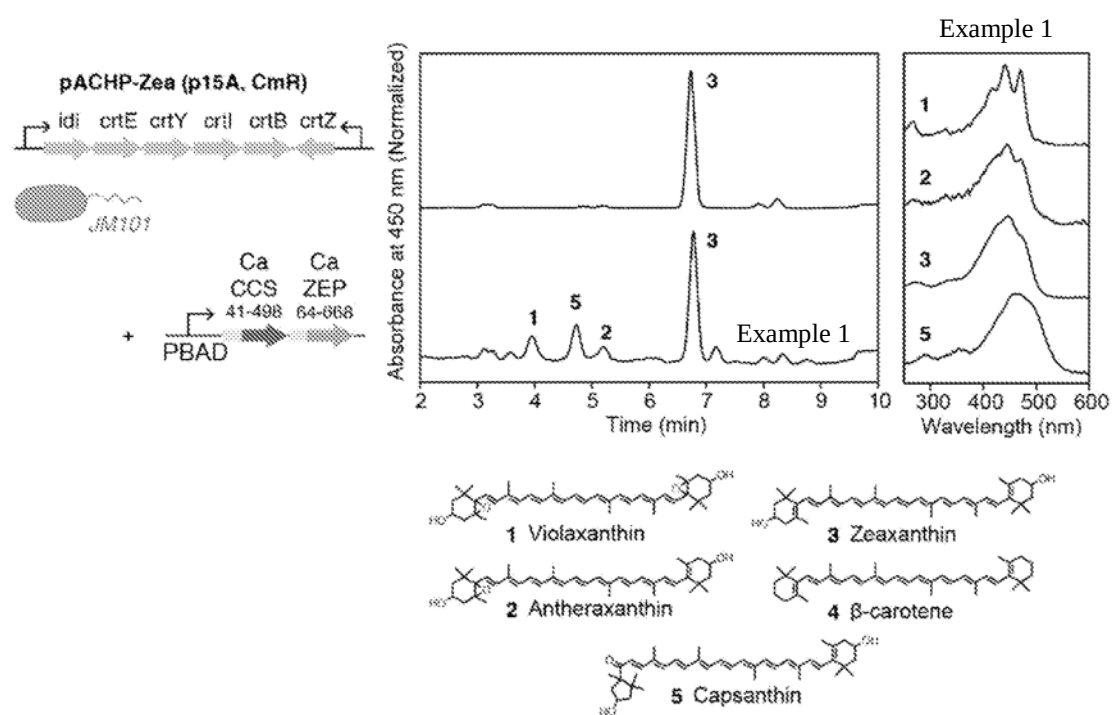


FIG. 7

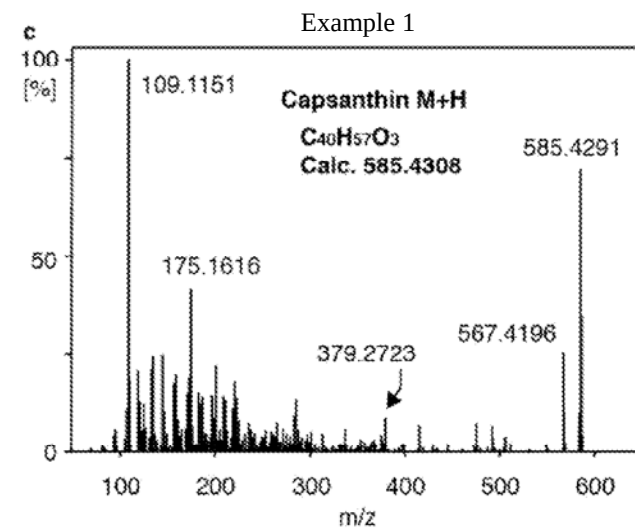
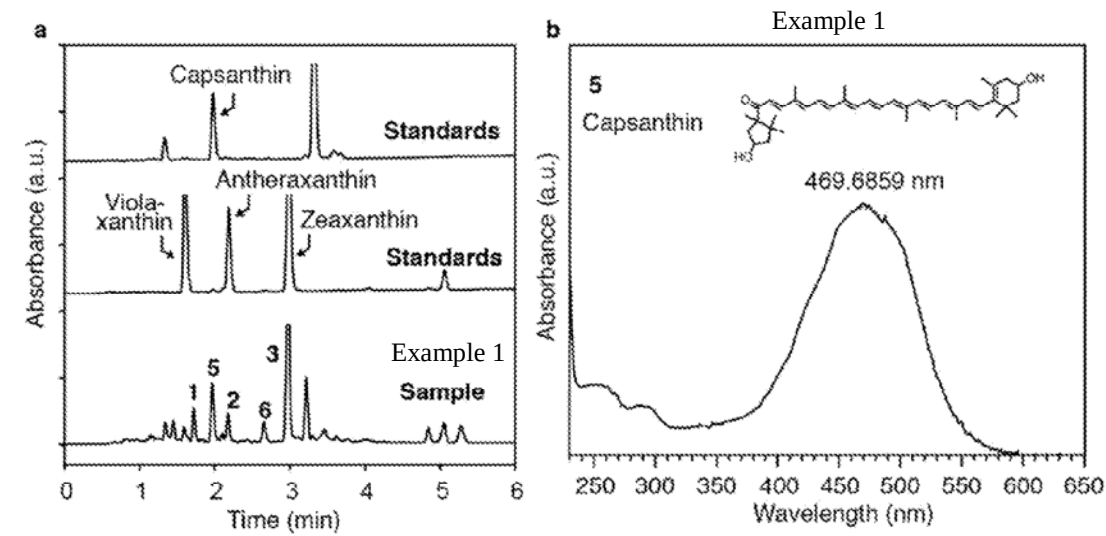


FIG. 8

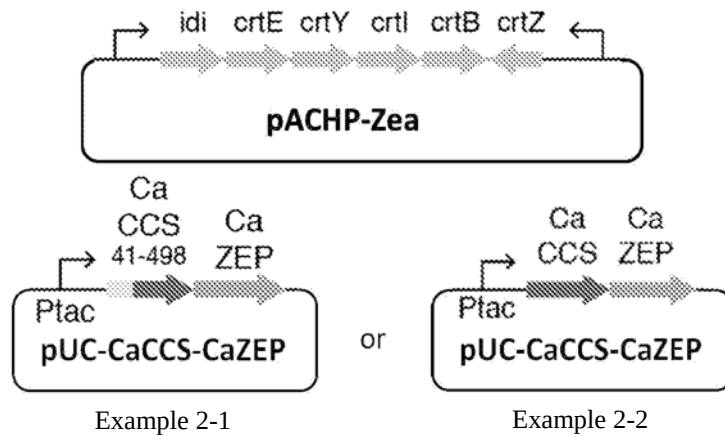


FIG. 9

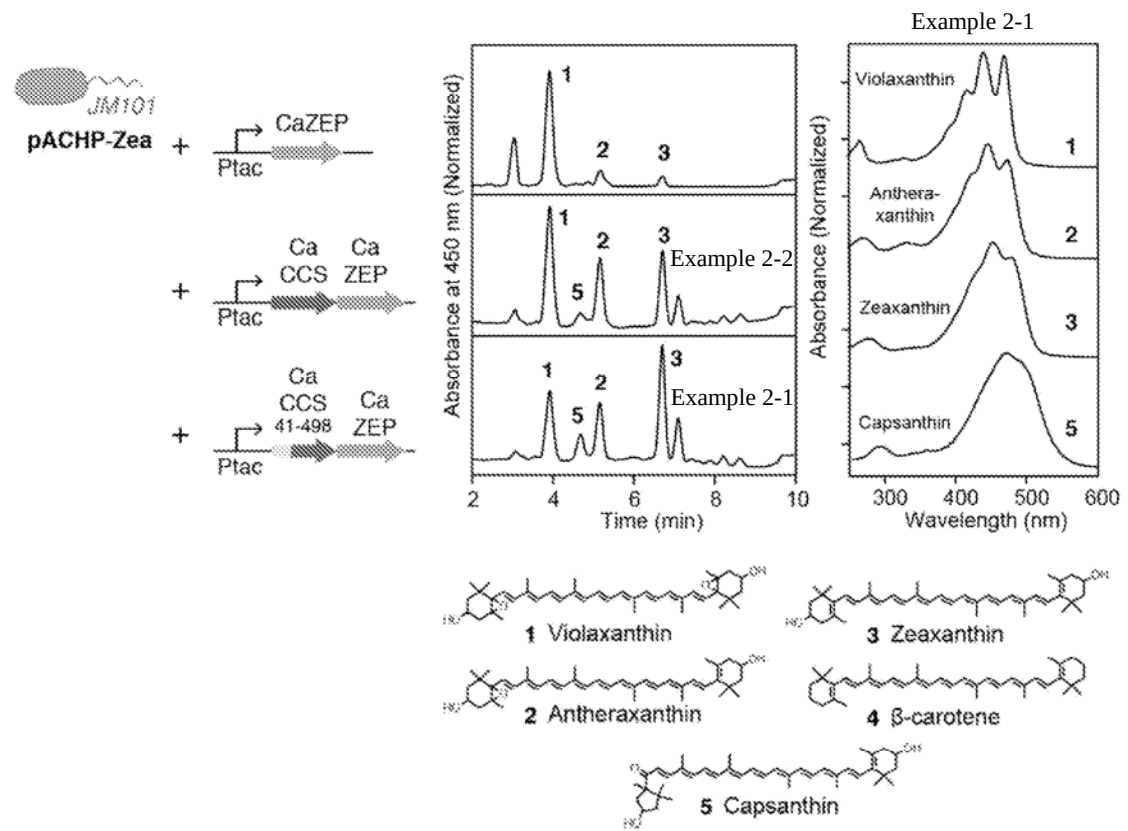


FIG. 10

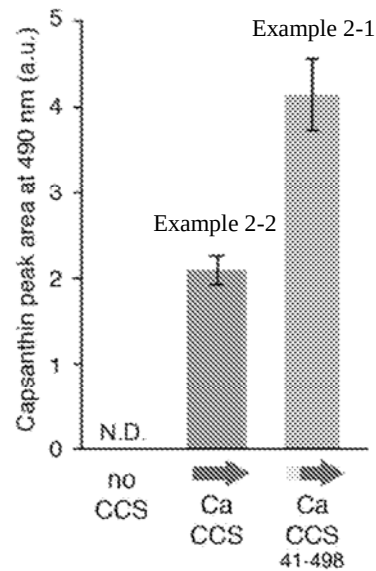


FIG. 11

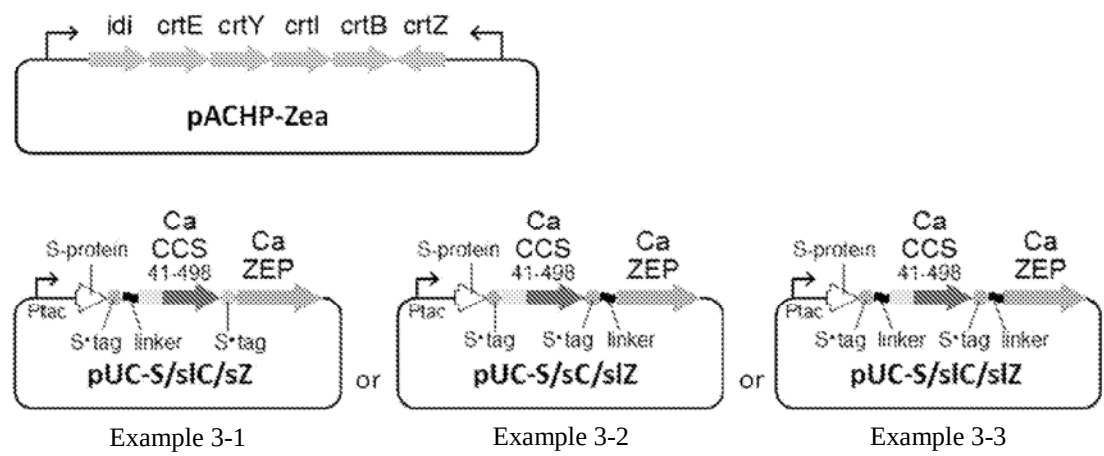


FIG. 12

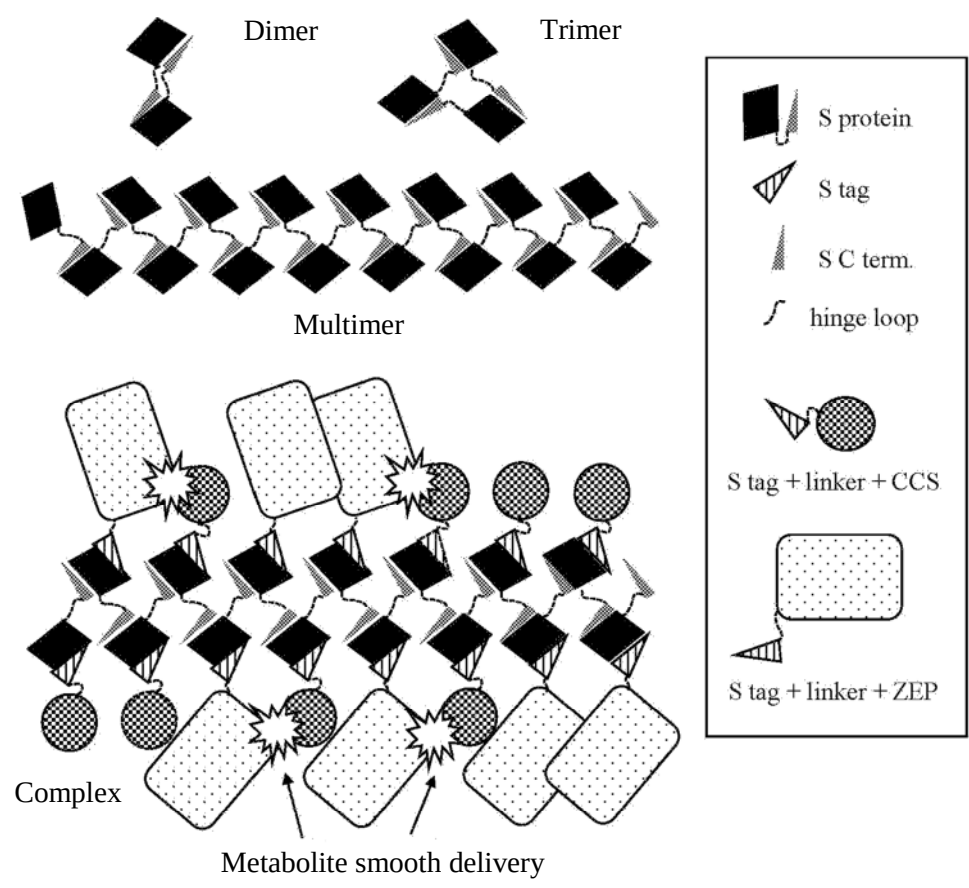


FIG. 13

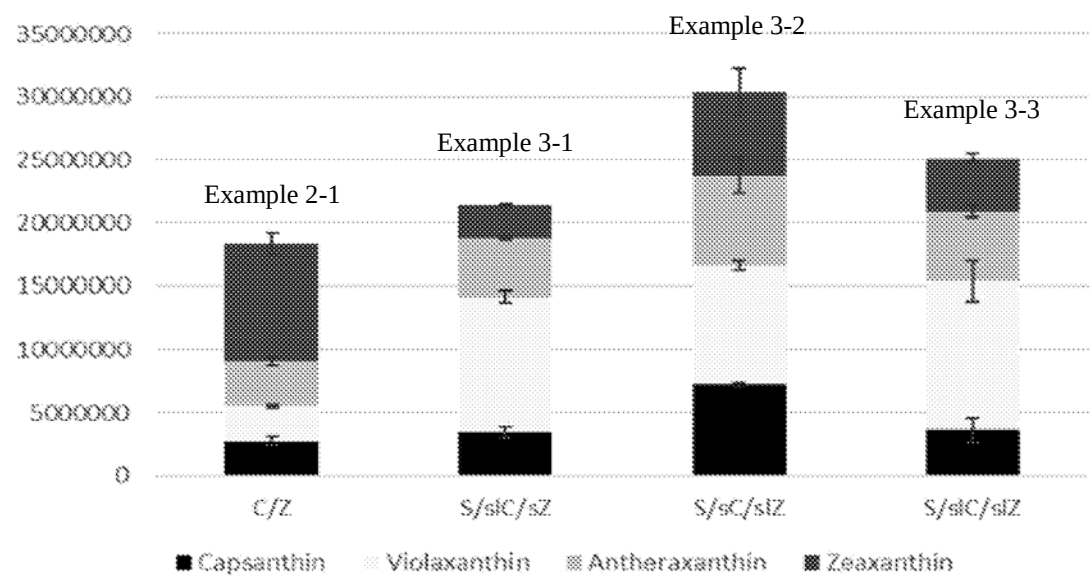


FIG. 14

