

## E203

### Purification and Characterization of a Novel Calcium-Binding Protein in *Dunaliella salina*.

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Calcium has been reported as a second messenger in various cellular processes by a wide body of evidence. Fundamental to this second messenger system are the  $\text{Ca}^{2+}$ -binding proteins (CaBPs), which function as intracellular receptors for second messenger  $\text{Ca}^{2+}$ . Hence, a novel CaBP was purified in *D. salina*, unicellular green algae. The molecular weight of this CaBP is about 23 kD as estimated by SDS-PAGE and gel filtration, and its pI value was about 5.16. This CaBP is able to bind  $\text{Ca}^{2+}$  in the presence of an excess of  $\text{MgCl}_2$  and KCl both in solution and after SDS-PAGE and electrotransfer to nitrocellulose membrane. Also, the CaBP exhibited  $\text{Ca}^{2+}$ -dependent changes in mobility, UV absorption and fluorescence intensity, indicating its  $\text{Ca}^{2+}$ -dependent conformational changes. In the SDS-PAGE,  $\text{Ca}^{2+}$ -bound form is more faster than  $\text{Ca}^{2+}$ -free form in migration. On the contrary,  $\text{Ca}^{2+}$ -bound form is more slower than  $\text{Ca}^{2+}$ -free form in Non-denaturing PAGE. Meanwhile, UV absorption and fluorescence intensity was somewhat decreased by binding of  $\text{Ca}^{2+}$ .

## E204

### Polyacetylenes in Hairy Roots of Balloon Flower (*Platycodon grandiflorum*)

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Hairy roots of Balloon flower (*Platycodon grandiflorum* A. DC) were induced from the root tissues infected with *Agrobacterium rhizogenes* ATCC 15834. Growth and polyacetylene [ lobetyol (1), lobetyolin (2) and lobetyolinin (3) ] production of ten hairy root clones cultured in 1/4 Gamborg B5 (B5) liquid medium were determined. One selected hairy root clone (D6) grew well in hormone free-B5 liquid medium and showed maximum content of polyacetylenes at week 6 for 1 (0.375% dry wt) and at week 7 for 2 and 3 (3.030% and 0.206% dry wt, respectively) whose levels were much higher than those of the intact plant root (1: 0.019%, 2: 0.077% dry wt, 3 was not detected)

