In this issue

Podophyllum peltatum

Podophyllum peltatum (L.), known as mayapple plant, belongs to the family Berberidaceae and found mostly in southern Canada and eastern USA. It is perennial and grows in patches as branched rhizome system. The rhizome contains podophyllotoxin possessing the anticancer properties. The semi-synthetic derivatives of this compound like etoposide, etophos and teniposide are used clinically as chemotherapeutic agents for a variety of tumours, including small cell lung carcinoma, testicular cancer and malignant lymphoma. *P. peltatum* has been extensively used to commercially extract podophyllotoxin. *Podophyllum* species has long

growth period and produce single solitary flower, which develops into single berry. Due to long life span and low reproductive value, conventional breeding of these plant species is very difficult and time consuming. In an effort to develop a sustainable source of podophyllotoxin, plant tissue culture technique has been employed for micropropagation and metabolic engineering. High frequency plant production via somatic embryogenesis in *P. peltatum* has been accomplished successfully (see **page 662**).

Positive effects of EGF and PDGFs during cutaneous wound-healing process

Growth factors are essential to the complex process of wound repair and they have become targets for therapeutic interventions. Various growth factors, such as epidermal growth factor (EGF), platelet-derived growth factors (PDGFs) either alone or in combinations have been implicated in the wound-healing process in various tissues. M. L. Gope and R. Gope determine (**page 618**) the effect of optimum concentrations of purified EGF, PDGF-AB, PDGF-BB and PDGF-AA individually and in various combinations on the expression of their receptor mRNAs during acute cutaneous wound-healing process in mice. Daily topical application of EGF and PDGFs individually resulted in approximately two- to three-fold increase in EGF-R and α and β-PDGF-R mRNA levels and combinations of these growth factors produced 2.5 to four-fold increase. Rapid attainment of maximum level of receptor mRNAs on day one and its maintenance at comparatively higher level till day 3 appears to be essential for faster healing with less scar tissue. PDGF-AA + EGF inhibited EGF-mediated wound healing as well as EGF-dependent increase in receptor mRNA levels when applied pre-mixed or within 30 min following EGF application. This is indicative of deleterious effect of PDGF-AA in cutaneous wound-repair process. These results also confirm that PDGF-AA might act through a different molecular pathway compared to PDGF-BB and PDGF-AB.

Changes in marine productivity

One of the benign consequences of increased atmospheric carbon dioxide is that some plants synthesize more dry matter per unit water consumed. A natural question, then, is whether such a 'fertilizer effect' is observed in the oceanic productivity too. Satellites provide ocean colour data (e.g. the Indian Satellite Oceansat-I) and enable large areas of the ocean to be monitored for years to detect changes in chlorophyll pigments and hence productivity. Goes *et al.*, using such data for the western Arabian Sea, a region known for intense upwelling due to monsoon winds and hence higher oceanic productivity, concluded that indeed during the recent past marine productivity has increased in that region. They further attributed to global warming and the consequent strengthening of the monsoon. As palaeoclimate data have clearly shown that the summer and winter monsoons behave oppositely (i.e. when the summer monsoon weakens, the winter monsoon strengthens and vice versa), an increase in marine productivity due to a stronger summer monsoon should be concurrent with a weaker winter monsoon and hence a reduced winter productivity in the north-eastern Arabian Sea. In this issue, Satya Prakash and Ramesh show (**page 667**), by a detailed analysis of SeaWiFs data from the eastern Arabian Sea, that there is no evidence to believe that global warming significantly changes marine productivity, at least in this region during the recent past.