

tion, by biotic or abiotic stimuli, of the plant cells in culture. It is hypothesized that elicitation in tissue culture can enhance secondary metabolism in general.

To test this hypothesis, the current work aims to establish a model tissue culture system, in order to monitor the production of 6-methoxymellein (6MM), a phytoalexin of *Daucus carota*, after elicitation with culture filtrate of the fungus *Sclerotium rolfsii*.

Data are presented on the investigation that has been carried out to construct a model system of Ptc in suspension culture. Different cell lines and culture media have been tested and a HPLC method for monitoring 6-MM production has been developed. Other important culture parameters as fresh weight, dry weight, pH and viability have been investigated. The greatest 6MM production (600 µg/culture) was obtained with the cell line 3L incubated in the light with the culture medium Gamborg B5. The 6MM produced after elicitation was found in the cells as well as in the spent culture medium.

#### PRODUCTION OF CYTOCHALASINS BY *PHOMA EXIGUA* VAR. *HETEROMORPHA*

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The cytochalasins are a group of fungal metabolites showing characteristic biological activities, including inhibitory effect on specific tissues or organs, toxicity to animals, bacteria, algae, fungi and protozoans. Some cytochalasins are also known for their phytotoxic activity.

The analysis of the  $\text{CH}_2\text{Cl}_2$  organic culture extracts of *P. exigua* var. *heteromorpha* (Schulzer et Sacc.) Noordeloos et Boerema, responsible of a severe foliar blight of Oleander, led to the purification of the known cytochalasins A and B.

A further investigation on the organic extracts revealed the presence of two more cytochalasins: deoxaphomin, and a new cytochalasin, named ascochalasin. The investigations up to now realized made it possible to establish the presence of some other cytochalasins.

Using HPLC in combination with HPTLC methods cytochalasins A and B were detected in Oleander leaves naturally infected by the fungus, suggesting that these two metabolites could play a role in the disease. However, it appears that the cytochalasins have only a limited importance in Oleander leaf blight because, even if they are toxic to tomato seedlings, no toxic symptoms were observed either on healthy oleander leaves or on tomato cuttings, after injections with cytochalasins A and B. Moreover, a very strong phytotoxic activity remains in the culture filtrates after exhaustive  $\text{CH}_2\text{Cl}_2$  extraction. Investigations are in progress to purify this main phytotoxic compound.

The structure-activity relationship of chytochalasins A and B was studied by biological assays on *Artemia salina*, tomato seedling, *Geotrichum candidum* and *Bacillus megatherium*. Using some their derivatives and similar natural compounds, it appears that the size and the conformational freedom of the macrocyclic ring are important for biological activity. Moreover, modifications of the hydroxy group on C-7 and of the keto group on C-20, in the [14]-cytochalasins, are also related to toxic properties.