

# Hydrogen Peroxide from the Oxidative Burst is Not Involved in the Induction of Taxol Biosynthesis in *Taxus chinensis* Cells

Wen Zhi Lan<sup>a\*</sup>, Wen Min Qin<sup>b</sup>, Long Jiang Yu<sup>a</sup>, and Xi Yang<sup>a</sup>

<sup>a</sup> School of Life Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, China. Fax: +86-27-87 54 368 33.  
E-mail: lanwz73@sohu.com

<sup>b</sup> Department of Biology, University of Waterloo, Ontario N2L 3G1, Canada

\* Author for correspondence and reprint requests

Z. Naturforsch. **58c**, 605–608 (2003);  
received January 13/March 17, 2003

In cell suspension cultures of *Taxus chinensis*, 40 mg/l fungal elicitor from *Aspergillus niger* and 20  $\mu\text{M}$   $\text{HgCl}_2$  elicited 5.7 and 3.6 mg/l taxol, which was a 9-fold and 5-fold increase vs. compared with the control, respectively. The fungal elicitor induced hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) accumulation but  $\text{HgCl}_2$  did not, indicating that  $\text{H}_2\text{O}_2$  was not necessary for enhancement of taxol induced by elicitor. Compared with the treatment with fungal elicitor alone, exogenous catalase, ascorbic acid, diphenylene iodonium and superoxide dismutase induced a 0.45, 0.4, 0.7 and 1.4-fold  $\text{H}_2\text{O}_2$ , but elicited taxol production, which was 0.98, 1.2, 1.1 and 0.9-fold, respectively, vs. non-treated cells. Elicitor-induced taxol production was not accorded with the amount of  $\text{H}_2\text{O}_2$  production.

**Key words:** Elicitor, Taxol, *Taxus chinensis*