

Differential Proteomic Profile and Terpenoid Production in Somatic Embryos of *Jatropha curcas*

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Abstract : Somatic embryos reproduce original seed characteristics and could be implemented in biotechnological studies. *Jatropha curcas* L. is an important plant for biodiesel production, but also is used in traditional medicine. Seeds from *J. curcas* are toxic because contain diterpenoids called phorbol esters, but in Mexico exist a non-toxic variety. Therefore, somatic embryos suspension cultures from non-toxic *J. curcas* variety were induced. In order to investigate the characteristics of somatic embryos, a differential proteomic analysis was made between pre-globular and globular stages by 2-D gel electrophoresis. 108 spots were differentially expressed ($p < 0.02$), and 20 spots from globular somatic embryos were sequenced by MALDI-TOF-TOF mass spectrometry. A comparative analysis of terpenoids production between the two stages was made by RP-18 TLC plates. The sequenced proteins were related to energy production (68%), protein destination and storage (9%), secondary metabolism (9%), signal transduction (5%), cell structure (5%) and aminoacid metabolism (4%). Regarding terpenoid production, in pre-globular and globular somatic embryos were identified sterols and triterpenes of pharmacological interest (alpha-amyrin and betulinic acid) but also it was found compounds that were unique to each stage. The results of this work are the basis to characterize at different levels the *J. curcas* somatic embryos so that this system can be used efficiently in biotechnological processes.

Keywords : *Jatropha curcas*, proteomics, somatic embryo, terpenoids

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