Howaida I Abd-Alla, J Pharma Care Health Sys 2018, Volume 5
DOI: 10.4172/2376-0419-C4-035

Habitat specialization through chemical characterization, anti-herpes activity and the promising protocol for *in vitro* propagation of *Aloe barbadensis* (Miller) collected from Egypt and Tunisia

Howaida I Abd-Alla[1], Hussein S Taha[1], Heba D Khlifa[1], Dalila Souguir[2], Mohamed Hachicha[2], Mohamed Ali Ibrahim[1, 3] and Mounir M El-Safty[4]
[1]National Research Centre, Egypt
[2] University of Carthage, Tunisia
[3]University of Mississippi, USA
[4]The Central Laboratory for Evaluation of Veterinary Biologics, Egypt

Analyzing the lipid and protein content of leaves and roots of *Aloe barbadensis* collected from Egypt (AEG) and Tunisia (ATUN) was carried out using by GLC and HPLC, respectively. The HSV-1 infected chicken embryo fibroblasts cell lines were used for evaluation of the *in vitro* antiviral effect. A rapid and high frequency shoots multiplication, rooting and acclimatization protocols for elite Aloes using shoot tip explants was developed. Preliminary comparative molecular screening *in vitro* propagated aloes was carried out and randomly amplified polymorphic DNA (RAPD) markers have been used to check for genetic fidelity of aloes plantlet. Shoot tips explants of the two types were cultured on Murashige and Skoog's (MS) basal medium supplemented with different plant growth regulators TDZ, BAP, NAA for shoots proliferation and roots formation. After two weeks, *in vitro* grown plants were transferred to the poly-cups containing 1:1 ratio of soil and sand, respectively for hardening and then transferred to garden showed 75% of survival. The DNA fingerprint genetic integrity of the multiplied shoots and acclimatized plantlets were evaluated by employing RAPD marker assays. There was great variability in chemical constituents of AEG and ATUN. All the tested samples showed effective antiviral activity with IC50 range of 5-6 µg/mL and substantial Therapeutic Indices (TI) range of 80-83. Cytotoxicity assay indicated that CC50 of leaves and roots of AEG and ATUN were greater than 400 and 500 mg/mL, respectively. Shoot proliferation was found to be best (80%) using MS medium containing BAP 2.0 mg/L. Moreover, second subcultures recorded the highest and significant shootles multiplication. 70% of adventitious root formation was observed in half strength MS medium supplemented with IBA. Over 95% of rooted plantlets survived acclimatization was remarked. The current results indicated that the geographical localization had significant impact on the quality of each Aloe.

Biography

Howaida I Abd-Alla has completed her PhD from the University of Cairo, Egypt and is specialized in Metabolomics Natural Products Chemistry. She has pursued her Post doctorate at Laboratoire des Interactions Moléculaires et Réactivité Chimique et Photochimique UMR CNRS 5623, Université de Toulouse, France. She worked as a Professor in the Chemistry of Natural Compounds Department, National Research Centre, Egypt. She is currently working as the Head of the department where her research focuses primarily on isolation, purification and identification of natural compounds from medicinal plants, bacteria and marine organisms using advanced techniques for identification (1D and 2D NMR analysis), synthesis of derivatives of natural products and bioactive assays *in vivo* and *in vitro* in natural products for use in treating different diseases.

howaida_nrc@yahoo.com

Notes: