

## Poster Session

P-1

**Identification of Endophytic Bacteria from Micropropagated Yacon (*Smallanthus sonchifolius*) Growing under Autotrophic and Heterotrophic Systems***Moraes RM<sup>1</sup>, de Melo IS<sup>2</sup>, Joshi VC<sup>1</sup>, Sumyanto J<sup>1</sup>, Samoylenko V<sup>1</sup>, Ilias M<sup>1</sup>*<sup>1</sup> National Center for Natural Products Research, Research Institute for Pharmaceutical Sciences, The University of Mississippi, University MS 38677<sup>2</sup> EMBRAPA/Environment, Rodovia SP 340 – Km 127,5 Caixa Postal 69, Jaguariúna – SP – Brasil – CEP: 13820-000

Yacon, *Smallanthus sonchifolius*, an Andean species, is a rich source of dietetic oligofructans with low glucose content, proteins and phenolic compounds. These constituents have shown efficacy in the prevention of diet-related chronic diseases, including gastrointestinal disorders and diabetes [1,2]. Yacon is part of a research program at the National Center for Natural Products Research (NCNPR) and University of Mississippi Field Station to develop new alternative root crops for Mississippi while attempting to improve the diet of low income families. Yacon can be easily propagated by cuttings. Virus and nematode infections have been reported on plants propagated by cuttings in Brazil, a country that has adopted Yacon as specialty crop [3]. We have developed two culture systems, autotrophic and heterotrophic, to produce healthy plants. Herein we describe the presence of endophytic bacteria in micropropagated Yacon. In auxin free media, new roots were induced. Over a 15 day period, the average root induction per explant was 5.45 to 8.75 under autotrophic and heterotrophic cultures, respectively. Root length varied between 3 and 60 mm. The presence of root hairs and lateral roots was noticed only in autotrophic conditions. These beneficial bacteria were identified and chemically characterized. **Acknowledgement:** This research work was partially supported by the USDA/ARS Cooperative Research Agreement No. 58-6408-2-009. **References:** [1] Terada S, et al. (2006) *Yakugaku Zasshi* 126(8): 665–669. [2] Valentová K, Ulrichová J. (2003) *Biomedical Papers* 147: 119–130. [3] Mogor G, et al. (2003) *Acta Horticulturae* 597: 311–313.