

Evaluation of Flavonoids Production in *Passiflora alata* Curtis Elicited with Monohexosilceramidas (CMHs) OF *Fusarium oxysporum*

Bernardino, M.C.¹, Garcia, R.O.², Haido, R.M.T.³, Oliveira, E. A. M.², Barreto-Bergter, E.¹

¹Instituto de Microbiologia, UFRJ-RJ, ² Instituto de Biologia Roberto Alcantara Gomes, UERJ-RJ and ³Instituto Biomédico, UNIRIO-RJ.

Introduction. *Fusarium oxysporum* is a phytopathogenic fungus that has been studied for its economic importance and described as an emerging pathogen which causes opportunistic fungal diseases in immunocompromised human hosts. The cerebrosides or monohexosylceramides (CMHs) are neutral glycosphingolipids containing a monosaccharide, usually glucose or galactose in connection with 1-ortho-betaglycosidic linkage with a ceramide. The elicitor activity of CMHs in phytoalexin synthesis and pathogenesis-related proteins has been demonstrated in different plant species. *Passiflora alata*, known as sweet passion fruit, is resistant to *F. oxysporum*, the causal agent of fusariosis in yellow passion fruit. It has medicinal value, is included in the Brazilian Pharmacopoeia, and is used as an anxiolytic, sedative, diuretic and analgesic. **Objective.** This study aims to evaluate the effect of elicitation with CMH, extracted and purified from the cell wall of *F. oxysporum* in the production of flavonoids in *P. alata* cultures. **Material and Methods.** For this study was used spectrophotometric methods for identification of CMHs, colorimetric to evaluate the antioxidant potential and chromatographic analysis for flavonoids. **Results and Discussion.** By using mass spectrometry (ESI-MS), CMHs were identified as N-2'-hydroxyoctadecenoic -1 - β -D-glucopyranosyl-9-methyl-4,8-sphingadienine, N-2'-hydroxyoctadecanoic -1 - β -D-glucopyranosyl-9-methyl-4-hydroxy-4,8-sphingadienine and N-2'-hydroxyeicosanoyl-1- β -D-glucopyranosyl-9-methyl-4,8-sphingadienine. To evaluate the antioxidant potential, we use the 2,2-diphenyl-1-picrylhydrazyl (DPPH) and observed an increase in the antioxidant potential of the materials that were elicited with CMHs. HPLC analysis of leaf extracts showed the presence of three substances, identified according to standards and literature data, such as orientin, isovitexin and vitexin-2'-O-rhamnoside. It was established validation methodology HPLC-DAD to quantify the vitexin-2 "-O-rhamnoside in extracts of *P. alata*. Starting validation we also observed an increase in production of the major flavonoid (vitexin-2'-O-ramosideo) in extracts of leaves treated with CMHs. **Conclusions.** These results suggest that CMHs are involved in production of secondary metabolites in *P. alata* and has an important biotechnological potential.

Keywords: *Passiflora alata*, *Fusarium oxysporum*, elicitation, flavonoid, vitexin-2 -O-rhamnoside, validation.