Investigation of new and/or bioactive metabolites from endophytic fungi associated with *Opuntia monacantha* (Cactaceae)

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**Introduction:** In continuing our recently initiated research program to search for new and/or biologically active secondary metabolites from endophytic fungi of the Brazilian Cactaceae (Wolff et al. *3rd BCNP*, 2011), we have investigated four new strains associated with the cladodes of *Opuntia monacantha* (Cactaceae), a species known to possess moderate antitumor and antioxidant activities (Valente et al, *Phcog. Mag.* 3, 167, 2007; Valente et al, *Food Chem.* 123, 1127, 2010).

**Experimental:** The strains were cultured separately for 7 days in Sabouraud Dextrose media, the mycelia-free filtrates were extracted with 

\[ \text{EtOAc} \]

and the solvents evaporated. The yielded extracts were submitted to \(^1\)H NMR and to silica gel TLC (toluene/Et\(_2\)O 1:1, UV at 254 and 364 nm, FeCl\(_3\) and DPPH reagent to visualize the spots) in order to compare their metabolite profiles. The antioxidant activity (DPPH) and the *in vitro* cytotoxic effect in tumor cell line of human breast adenocarcinoma (MCF-7) were also evaluated. One of the extract, with a blue fluorescent spot in TLC (under 254 nm) was fractionated in silica gel Prep-TLC using CH\(_2\)Cl\(_2\)/MeOH 9:1 and some of the separated fractions were submitted to NMR techniques and/or to HPLC-DAD.

**Results/Discussion:** The \(^1\)H NMR and TLC profiles of the extracts revealed differences on the metabolite profiles. The extracts showed just weak antioxidant activity (IC\(_{50}\) from 301.29 to 525.49 \(\mu\)g/mL), and two of them presented significant capacity to inhibit MCF-7 growth after 72h of exposition at low levels (10 \(\mu\)g/mL), with 35 and 45 % of inhibition, respectively. The isolated blue fluorescent fraction proved by NMR and HPLC-DAD to be a mixture of compounds that are currently under investigation.

**Conclusion:** The production of cytotoxic metabolites and potentially interesting compounds in the microbiota associated with *O. monacantha* was demonstrated.

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