



**BIOACTIVE METABOLITES FROM *XYLARIA* SP. AN ENDOPHYTE IN
CASEARIA SYLVESTRIS (FLACOURTIACEAE)**

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Abstract: Endophytic fungi are microorganisms that asymptotically colonize the interior plants, being found in plant organs such as leaves, stems, fruits, seeds and roots and can inhabit the plant throughout its life. In some cases it can be transmitted for future generations by host seed. Interest in studies with endophytic fungi is growing and studies have shown that these organisms are prolific producers of bioactive secondary metabolites of medicinal interest and agriculture, among other applications [1]. In this context, fungi of the genus *Xylaria* sp. belong to the Xylariaceae family (Ascomycota), one of the most known families and it is distributed throughout the world, predominantly in tropical and subtropical regions. Fungi of this type have shown to be potential sources in producing new secondary metabolites, many of which have important biological activities for drug discovery including cytotoxic, antimalarial and antimicrobial activity [2]. *Xylaria* sp., was cultured in rice for 21 days at 26 °C in static mode. The culture was extracted with EtOAc furnishing, after evaporation of the solvent, the crude EtOAc extract, which was partitioned with water by liquid partitioning. The EtOAc fraction was evaporated resulting in crude extract. This extract was dissolved in CH₃CN and defatted with hexane by liquid partitioning, and the CH₃CN fraction was evaporated to give 0.249 g of the crude extract. The crude extract showed to be, active against three cancer cell lines (ovarian carcinoma, colon and glioblastoma), strong activity against fungal pathogens *C. cladosporioides* and *C. sphaerospermum*, and moderate activity in inhibiting the acetylcholinesterase enzyme. CSY-06 was subjected to chromatographic separation by preparative HPLC (reversed-phase) yielding the isolation and structural identification of four known substances (demethylkigelin, kigelin, xylariolide D, and dankasterone A). The relative stereochemistries of these compounds are under investigation.

References:

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[2] Song, F.; Wu, S. H.; Zhai, Y. Z.; Xuan, Q. C.; Wang, T. Secondary metabolites from the genus *Xylaria* and their bioactivities. 2014. *Chemistry & Biodiversity*. 11 : 673-699.