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CHEMICAL CONSTITUENTS ISOLATED FROM *ASPERGILLUS SP. FRIZ12*

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Abstract: Fungi are a diverse group of organisms, present in various terrestrial and aquatic habitats. Soil is the habitat traditionally investigates as a source of fungi and other microorganisms used in chemical exploration programs, aimed at isolation of novel bioactive secondary metabolites [1]. This work shows chemical study of *Aspergillus* sp. FRIZ12 occurring in the rhizosphere of *Mimosa acutistipula*, endemic plant in Brazil [2]. One strain is deposited at "Laboratório de Bioensaios e Química de Micro-organismos – LaBQuiM / UFPA" as a code FRIZ12. The fungus was cultived in fifteen Erlenmeyer flasks (1000 mL) containing 200 g of rice ("Uncle's Been®") and 75 mL of water per flasks were autoclaved for 45 min at 121 °C. Small pieces of PDA (Potato Dextrose Agar) containing mycelium of *Aspergillus* sp. were added to 13 Erlenmeyer flasks under sterile conditions, and then the Erlenmeyer flasks were incubated at 25 °C for 25 days for colony growth, two Erlenmeyer flasks were used as control. Biomass was macerated with hexane, ethyl acetate and methanol, in which the hexane (13.23 g), ethyl acetate (8.80 g) and MeOH (230.72 g) extracts were obtained after evaporation in rotary evaporator of resulting solutions. The hexane (5.72 g) and MeOH (10.0 g) extracts were fractionated on silica column using a mixture of hexane, ethyl acetate and methanol, in order increasing polarity, as eluent. The resulting fractions were successively chromatographed on silica gel CC (Column Chromatography) by using hexane, ethyl acetate and methanol as mobile phase in a gradient of polarity and monitored by TLC. The isolated compounds were identified by NMR and MS. Following chemical constituents were isolated 2-benzyl-4H-pyran-4-one (**1**), 5-hydroxymethylfurfural (**2**), ergosterol (**3**), ergosterol peroxide (**4**), cerivisterol (**5**) and uridine (**6**). 2-Benzyl-4H-pyran-4-one (**1**) (Figure 1) is a substituted gamma-pyrone and studies have demonstrated that substituted gamma-pyrones are versatile intermediates in organic synthesis. They can be used as polyketide synthons in the synthesis of polyacetate and spiroketal containing natural products [3]. It is the first report of the isolation of 2-benzyl-4H-pyran-4-one as natural product.

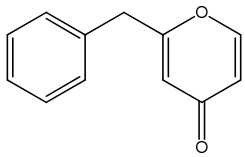

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Figure 1. 2-Benzyl-4H-pyran-4-one (**1**) isolated from *Aspergillus* sp. FRIZ12.

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